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# UBT ECONOMIC REVIEW

المنظور الاقتصادي  
لجامعة الأعمال والتكنولوجيا

AUG.25 | ISSUE.11



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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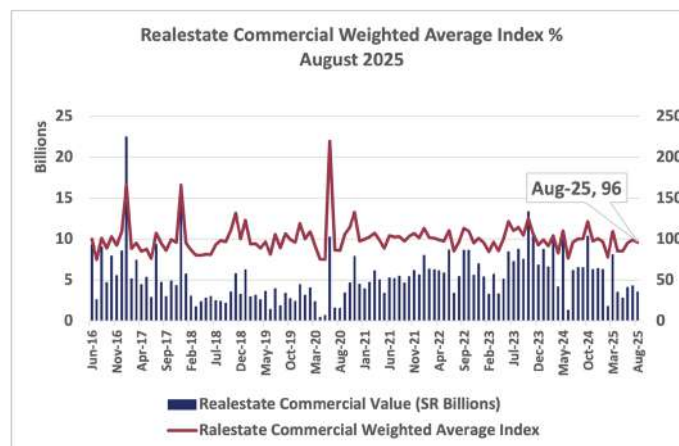
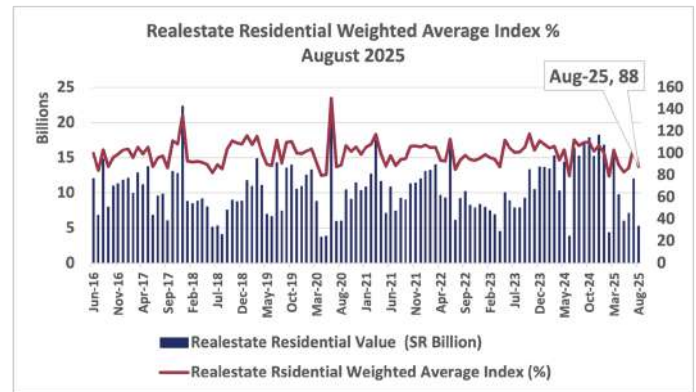
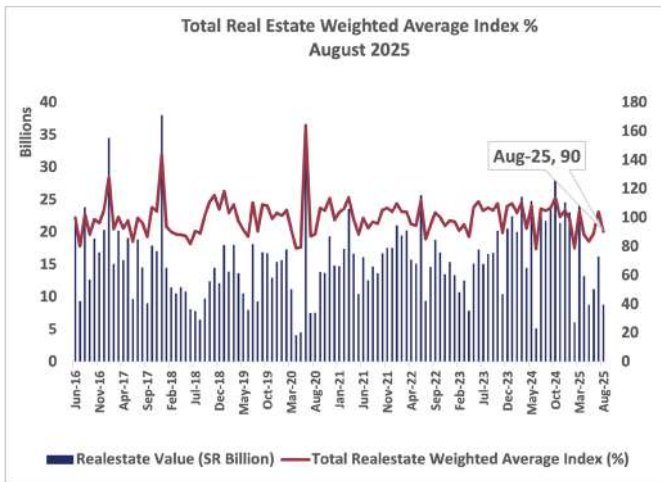
# Executive Summary

The Total Real Estate Index (TREIX) for the Kingdom of Saudi Arabia (KSA) and Buraydah reveals continued market adjustment trends during June 2025 through August 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 Buraydah reflecting similar adjustment patterns in its real estate activity. In **June 2025**, the total real estate transactions across the Kingdom showed activity at **SAR 111.79 billion**, with the TREIX at **89.17 points**. The market demonstrated growth in **July 2025**, with total transactions increasing to **SAR 162.68 billion**, while the TREIX increased to **103.99 points**, representing a **16.62%** increase. By **August 2025**, market activity showed some moderation, with transaction values declining to **SAR 88.16 billion** and the TREIX adjusting to **90.45 points**, a **13.01%** decrease from July, reflecting typical seasonal patterns.

In Buraydah, the real estate market experienced adjustment trends during the period from June 2025 to August 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 volatility with progressive adjustment, 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 Buraydah. 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 mixed cycle during June 2025 through August 2025. The Total Real Estate Index (TREIX) demonstrated growth in July followed by seasonal adjustment in August, reflecting evolving market fundamentals across residential, commercial, and agricultural sectors.

- **In June 2025**, the total real estate transactions across the Kingdom stood at **SAR 111.79 billion**, with the TREIX at **89.17 points**, maintaining steady market activity.
- **By July 2025**, transaction values experienced notable growth to **SAR 162.68 billion**, with the TREIX rising to **103.99 points**, representing a **16.62%** increase and indicating strengthened market momentum.
- **In August 2025**, the market demonstrated seasonal moderation with transaction values at **SAR 88.16 billion** and the TREIX adjusting to **90.45 points**, showing a **13.01%** decrease from July.

The comprehensive evaluation of the Kingdom's property sector from June through August 2025 indicates a market experiencing typical seasonal fluctuations. Transaction volumes exhibited an initial increase in July, rising from SAR 111.79 billion in June to SAR 162.68 billion, followed by a seasonal adjustment in August to SAR 88.16 billion—reflecting normal market dynamics influenced by summer conditions and regional factors.

Market dynamics during this period were influenced by several factors, including petroleum commodity fluctuations and evolving economic conditions. The July growth phase demonstrated market resilience, while the August moderation aligned with typical summer patterns observed in the region. Industry specialists noted that the variations in market activity during this quarter reflected normal seasonal cycles rather than structural concerns.

The Total Real Estate Index (TREIX) movement from 89.17 points in June to 103.99 points in July, followed by adjustment to 90.45 points in August, demonstrated the market's responsiveness to seasonal factors. These fluctuations occurred within the context of ongoing regulatory frameworks and continued government initiatives supporting the real estate sector as part of Vision 2030 objectives. The market adjustments observed during the June-August 2025 period were influenced by several interconnected factors affecting the Saudi real estate sector:

# Oil Price Dynamics: Global Petroleum and Economic Impact

Global petroleum markets demonstrated significant volatility in early 2025, culminating in a year-over-year decline of approximately 13.9% in crude oil prices by March 2025. Leading financial institutions anticipate Brent crude averaging \$63 per barrel across the 2025-2026 period. Concurrently, several prominent international financial research sources forecast distinct yearly averages: \$66 for 2025 and \$58 for 2026. Given that oil revenues constitute approximately 60% of government revenue and exceed 20% of Gross Domestic Product (GDP), these price fluctuations directly impacted national fiscal capacity and broader economic confidence, resulting in corresponding corrections within the real estate market.

**Regulatory Framework Adjustments:** On April 29, 2025, the Saudi Cabinet approved comprehensive amendments to the White Land Tax Law, representing the most significant reform since its 2016 inception. The undeveloped land tax rate increased to up to 10% (from the previous 2.5%), with expanded scope now including vacant buildings subject to a 5% annual levy on estimated rental value. These reforms, designed to curb speculation and encourage development, created a brief adjustment period as market participants adapted investment strategies to the new regulatory environment.

**Seasonal Market Patterns:** The summer months of June through August traditionally experience reduced real estate transaction activity across Saudi Arabia due to climate conditions, particularly in central regions, and vacation schedules. Historical market data consistently demonstrates this recurring pattern, with transaction volumes typically moderating during the third quarter before recovering in autumn months mentioned in Mordor Intelligence 2025, Arab News Q1 2025 Real Estate Report.

**Positive Underlying Fundamentals:** Despite quarterly adjustments, the Kingdom's real estate sector maintained strong structural support. Q1 2025 data from the General Authority for Statistics (GASTAT) showed overall real estate prices climbing 4.3% year-over-year, with residential properties increasing 5.1%. The 2024 fiscal year recorded unprecedented transaction volumes totaling SAR 2.5 trillion (\$533 billion) across over 622,000 deals,

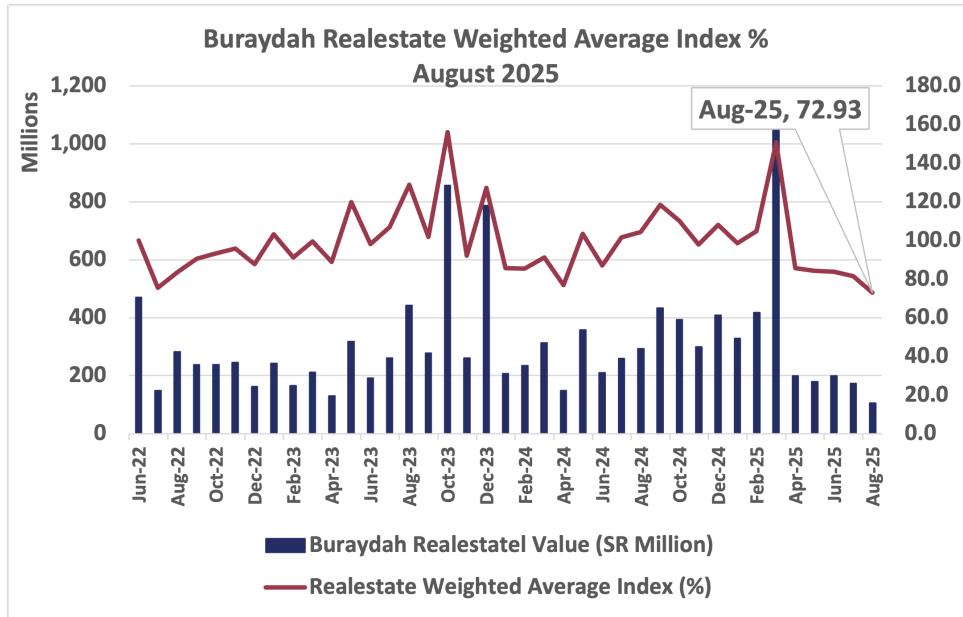
demonstrating robust underlying demand. Vision 2030 initiatives continued advancing with \$1.3 trillion committed to infrastructure development, the Sakani program supporting over 96,000 families with affordable housing, and population growth projected to exceed 40 million by 2030.

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.

## About Buraydah

Buraydah, the capital of the Al-Qassim Region, stands as one of Saudi Arabia's most significant urban centers and serves as a vital economic hub in the central part of the Kingdom. With a population exceeding 700,000 residents, Buraydah represents the largest city in the Qassim Province and functions as the administrative, commercial, and cultural heart of the region. Strategically positioned along major transportation corridors connecting Riyadh to the northern regions of Saudi Arabia, Buraydah has historically served as a crucial commercial nexus. The city's economy has traditionally been anchored by agriculture, particularly date palm cultivation, with the region producing some of the Kingdom's finest dates. The expansive date markets of Buraydah, including the famous Buraydah Date Market, constitute one of the largest seasonal date trading centers globally, attracting merchants and buyers from across the Middle East and beyond. In recent decades, Buraydah's economic profile has diversified significantly beyond its agricultural roots. The city has emerged as an important commercial and retail center, hosting numerous shopping districts, modern malls, and a thriving private sector. The manufacturing sector has gained prominence, with industrial areas accommodating food processing facilities, construction materials production, and light manufacturing operations. The city's business environment supports a robust small and medium enterprise sector, particularly in trade, services, and retail activities. Educational and healthcare infrastructure has expanded considerably, with Qassim University establishing a significant presence and contributing to the city's human capital development. The healthcare sector has witnessed substantial investment, with King Fahad Specialist Hospital and other medical facilities serving not only Buraydah's population but also surrounding communities throughout the Qassim region. The real estate market in Buraydah reflects the city's economic evolution and strategic importance within Vision 2030 initiatives. Government investments in infrastructure, including road networks, utilities, and public facilities, have enhanced the city's attractiveness for both residential and commercial development. The ongoing urbanization and population growth, coupled with Buraydah's position as a regional economic center, continue to shape real estate demand patterns across residential, commercial, and industrial property segments. The city's relatively moderate cost of living compared to major metropolitan areas, combined with its economic opportunities and quality of life amenities, positions Buraydah as an increasingly important real estate market within the Kingdom's central region.



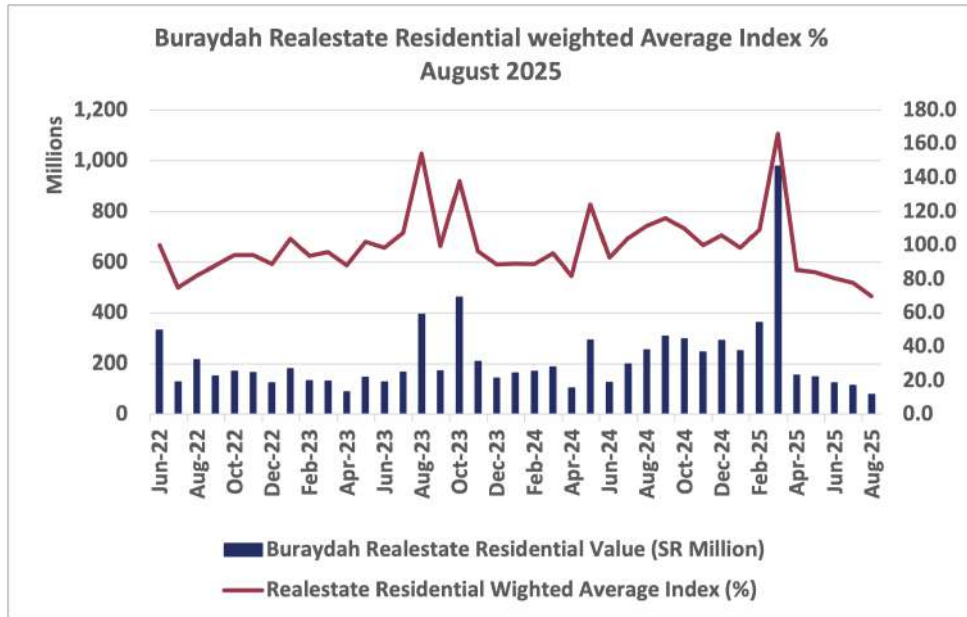


## Buraydah Real Estate Market Analysis

The real estate market in Buraydah reflected adjustment trends from June 2025 to August 2025, showing progressive moderation in market activity.

- **June 2025** saw transactions valued at **SAR 199.34 million**, resulting in a TREIX of **83.88 points**.
- **In July 2025**, the market showed moderation with transactions of **SAR 173.48 million**, with the TREIX adjusting to **81.52 points**, a **2.81%** decrease from June.
- **By August 2025**, market activity experienced further adjustment, with transactions totaling **SAR 104.70 million**, and the TREIX moderating to **72.93 points**, a **10.54%** decrease from July.

This period highlighted the adjustment dynamics in Buraydah’s real estate market, with transaction values showing progressive moderation throughout the summer quarter. This pattern reflects typical seasonal behavior in the region, where summer months traditionally see reduced real estate activity due to regional climate conditions and vacation patterns.

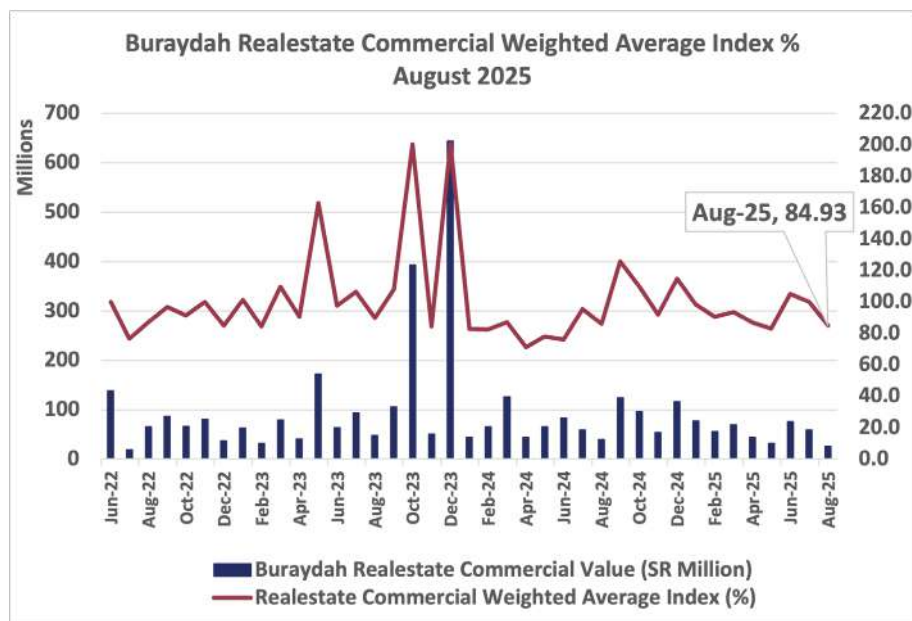


## Residential Real Estate Index (RRIX)

The Residential Real Estate Index (RRIX) for Buraydah highlights the residential sector’s adjustment patterns from June 2025 to August 2025.

- **In June 2025**, the RRIX recorded transaction values of **SAR 123.97 million** and an index score of **80.67 points**, establishing the quarter’s baseline performance.
- **July 2025** saw the RRIX experience moderation to **77.87 points**, with transactions at **SAR 114.47 million**, representing a **3.47%** adjustment in the index and a **7.67%** decrease in transaction value from June.
- **In August 2025**, the RRIX demonstrated further adjustment to **69.89 points**, with residential transactions at **SAR 78.47 million**, showing a **10.25%** decrease in the index and a **31.45%** decrease in transaction value from July.

These trends reveal that the residential market in Buraydah experienced progressive adjustment during the summer period of 2025, with the index showing typical seasonal moderation patterns. This reflects specific local market dynamics in Buraydah’s residential sector, including seasonal patterns typical of the Qassim region where summer represents a period of reduced activity due to high temperatures and traditional vacation schedules, alongside natural market recalibration within the region’s real estate landscape.



## Commercial Real Estate Index (RCIX)

The Commercial Real Estate Index (RCIX) for Buraydah illustrates the commercial sector’s evolving performance from June 2025 to August 2025.

- **In June 2025**, the RCIX recorded transaction values at **SAR 75.37 million** and an index score of **105.06 points**, establishing a strong baseline for the quarter’s commercial market activity.
- **July 2025** saw the RCIX adjust to **100.00 points**, corresponding to commercial transactions worth **SAR 59.01 million**, representing a **4.82%** moderation in the index alongside a **21.71%** decrease in transaction volume.
- **In August 2025**, the RCIX demonstrated continued adjustment declining to **84.93 points** with transactions at **SAR 26.23 million**, representing a **15.07%** decrease in the index from July, alongside a **55.54%** decline in transaction volume.

These trends reveal moderation dynamics within the commercial real estate market during the period from June 2025 to August 2025. The market experienced progressive adjustment across all three months, with transaction volumes showing notable decreases particularly in August. According to industry research, Buraydah's commercial market is influenced by seasonal business patterns and regional economic factors that contribute to summer activity reduction.

The progressive moderation in both index values and transaction volumes reflects typical summer slow-down patterns common in the region, where commercial activity traditionally decreases during peak summer months. This adjustment represents normal seasonal variation in Buraydah's commercial real estate environment, consistent with broader regional market patterns during the summer period.



# 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 Q3 2025, using the SALEINDEX, FCAINDEX, and FDINDEX, indicates evolving consumer spending patterns. The SALEINDEX, which measures total point of sales values, stood at SAR 49.80 billion in June 2025, increased to SAR 51.49 billion in July, before growing further to SAR 56.35 billion in August 2025.

The Foods and Cafes Sales Index (FCAINDEX) showed stable performance with gradual improvement, starting at SAR 14.73 billion in June 2025, adjusting to SAR 13.94 billion in July, and then recovering to SAR 14.58 billion in August. The Food and Drink Sales Index (FDINDEX) demonstrated steady trends, with sales of SAR 7.44 billion in June, SAR 7.40 billion in July, before increasing to SAR 7.89 billion in August 2025. These indices reflect consumer behavior influenced by seasonal trends and economic conditions during the summer period.

### Key Findings

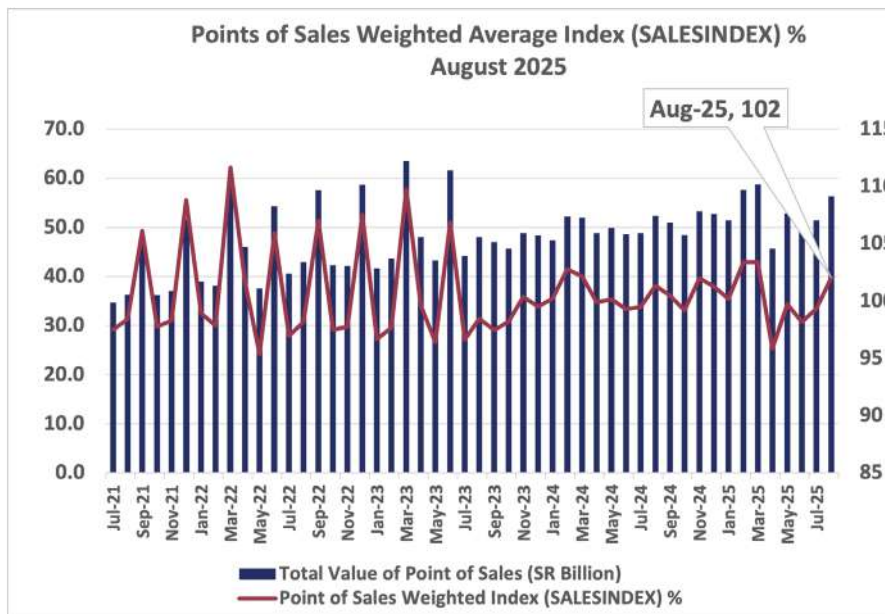
- **Gradual Recovery in Overall Spending:** The consumer spending indices showed gradual improvement through Q3, with SALEINDEX growing from SAR 49.80 billion in June to SAR 56.35 billion in August, reflecting strengthening consumer confidence.
- **Moderate Adjustment in Food Services:** The food service sector experienced a period of adjustment, with the FCAINDEX moderating from SAR 7.29 billion in June to SAR 6.69 billion in August 2025, reflecting seasonal consumption patterns.
- **Stable Food and Beverage Performance:** The consumer spending indices showed varying momentum across Q3, with SALEINDEX growing 13.2% from June to August, while FCAINDEX adjusted by 8.2% and FDINDEX increased by 6.0%, highlighting different dynamics 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.

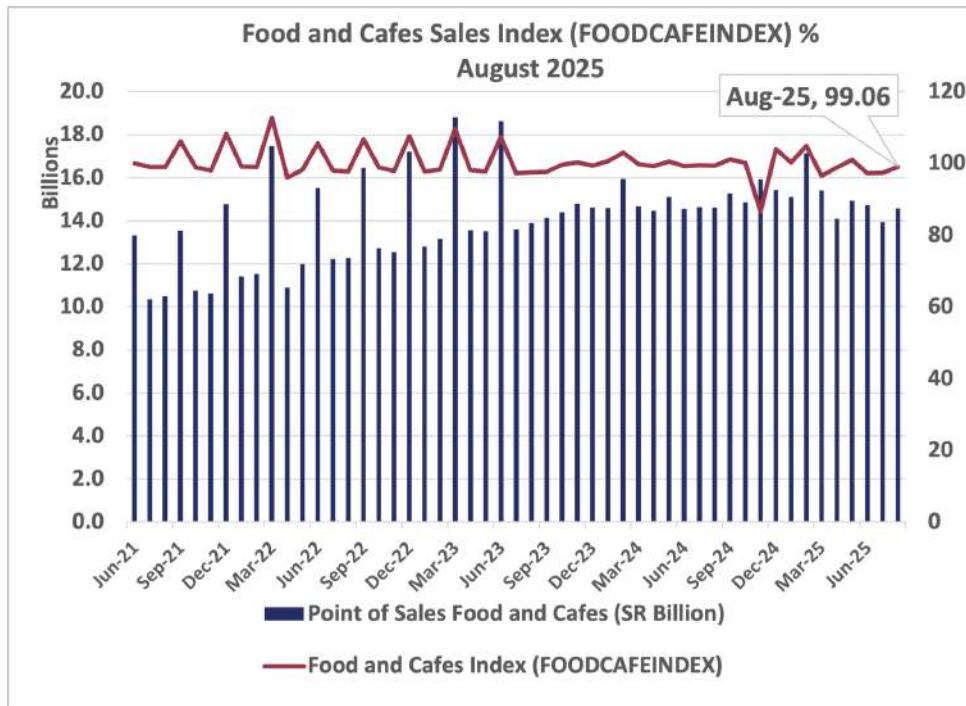
### Total Point of Sales Values (SALEINDEX)



The Total Point of Sales Index (SALESINDEX) for KSA showed notable variations during the second quarter of 2025:

- **In June 2025**, the SALESINDEX registered **98.17 points**, with total point of sales values reaching **SAR 49.80 billion**, indicating moderate consumer spending activity following the previous quarter's recovery.
- **In July 2025**, the market showed steady improvement, with sales values rising to **SAR 51.49 billion** and the SALESINDEX increasing to **99.34 points**, marking a **1.19%** increase from June.
- **By August 2025**, consumer spending demonstrated strong momentum, with sales values reaching **SAR 56.35 billion** and the SALESINDEX improving to **102.03 points**, representing a **2.71%** increase from July.

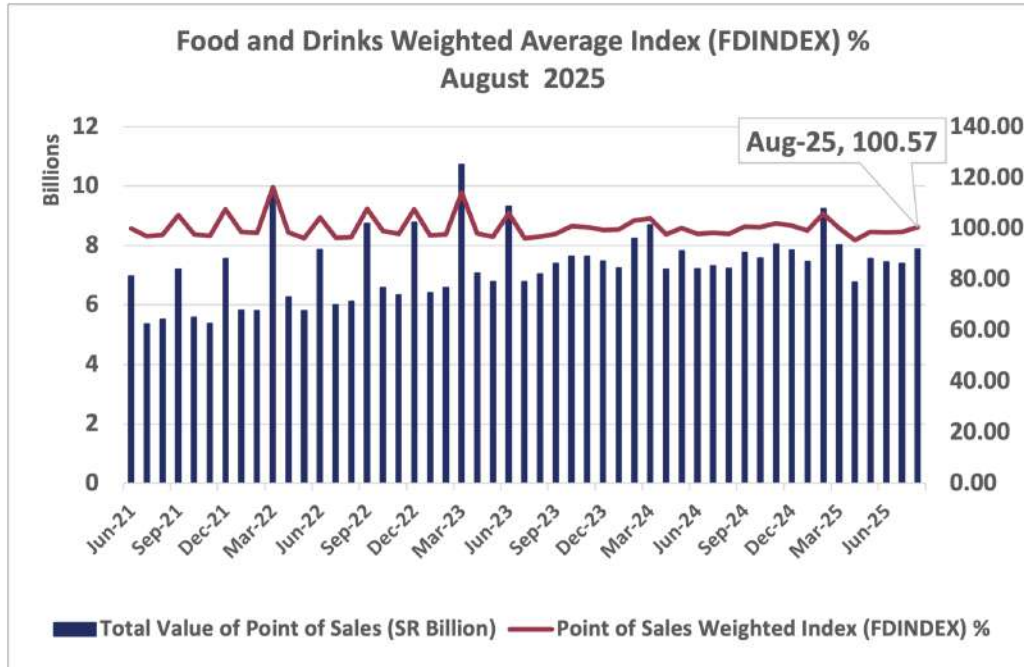
## Foods and Cafes Sales Values (FCAINDEX)



The Foods and Cafes Sales Index (FCAINDEX) for KSA demonstrated interesting dynamics during this period:

- **In June 2025**, the FCAINDEX stood at **97.32 points**, with total sales amounting to **SAR 14.73 billion**, showing solid performance in the food service sector.
- **In July 2025**, the sector-maintained stability with sales of **SAR 13.94 billion** and the FCAINDEX reaching **97.41 points**, reflecting a marginal **0.09%** increase from June despite seasonal variations in absolute values.
- **By August 2025**, the sector showed positive growth, with the FCAINDEX rising to **99.06 points** and sales reaching **SAR 14.58 billion**, reflecting a **1.69%** increase from July.

## Food and Drink Sales Values (FDINDEX)



The Food and Drink Sales Index (FDINDEX) for KSA showed stable patterns with gradual improvement:

- **In June 2025**, the FDINDEX registered **98.60 points**, with total sales in the food and drink sector reaching **SAR 7.44 billion**, indicating steady consumer demand.
- **In July 2025**, the sector-maintained stability, with sales holding at **SAR 7.40 billion** and the FDINDEX remaining steady at **98.66 points**, showing a marginal **0.06%** increase from June.
- **By August 2025**, the sector demonstrated positive growth, with the FDINDEX rising to **100.57 points** and sales increasing to **SAR 7.89 billion**, marking a **1.93%** increase from July.

These trends suggest evolving patterns across the three indices during Q3 2025, with overall consumer spending showing progressive improvement through the quarter, while the food service sector experienced a period of moderate adjustment. The food and drink sector-maintained stability with gradual growth, indicating resilient consumer spending in essential categories despite variations in discretionary dining expenditure during the summer 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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# Global Container Port Revolution: Economics, Performance, and Digital Transformation

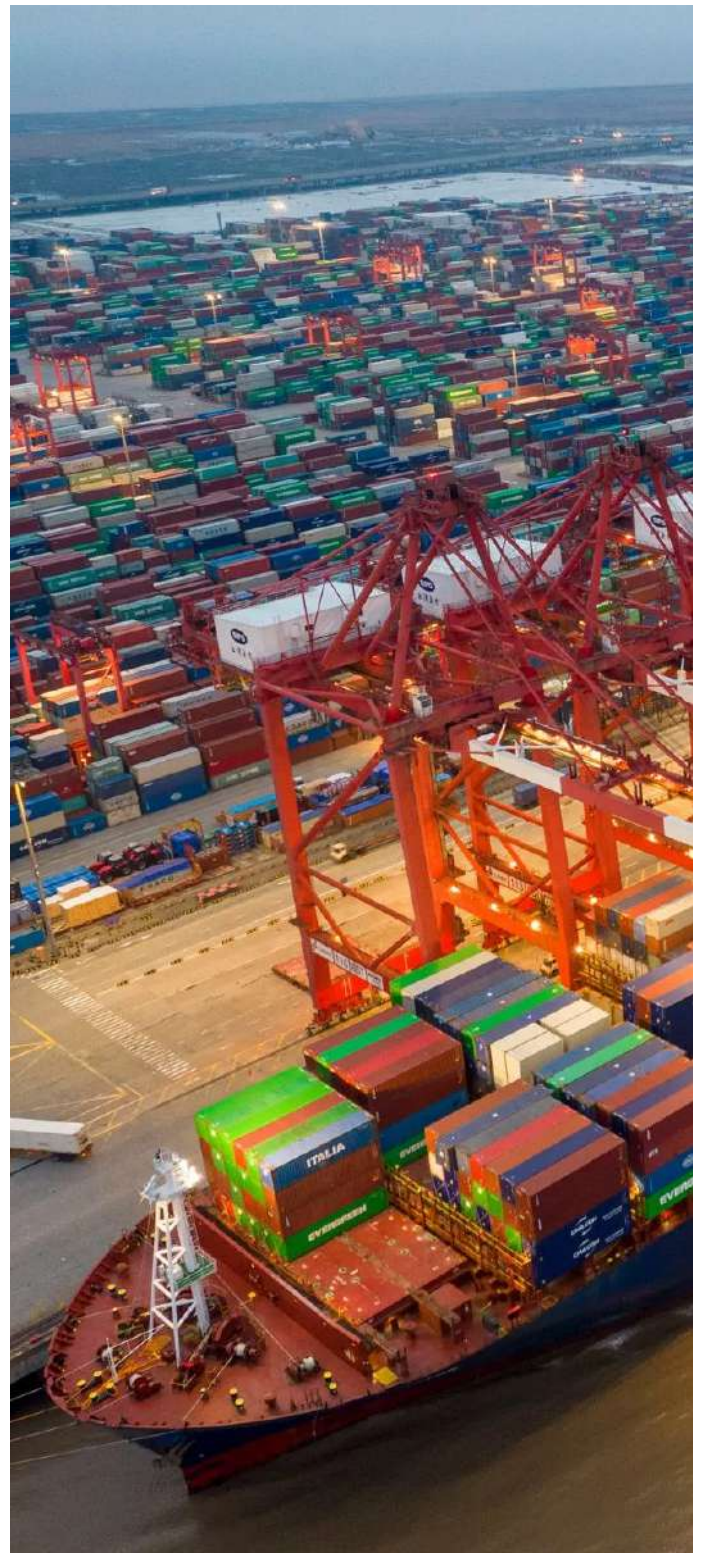
The global container port industry is experiencing unprecedented transformation, marked by historic achievements in throughput, technological advancement, and operational excellence. Led by Shanghai Port's groundbreaking achievement of crossing 50 million TEUs—becoming the first port worldwide to reach this milestone [1]—the industry demonstrates remarkable resilience amid geopolitical challenges and supply chain disruptions [7]. This comprehensive analysis examines the current state of global container ports, exploring record throughput levels, technological innovations, automation trends, economic drivers, and strategic developments that are reshaping international maritime commerce. With global container throughput estimated at approximately 890 million TEUs in 2024 [12][13] and digital transformation accelerating across all major port regions [9][10], ports serve as critical gateways through which approximately 80% of global trade flows [7]. The economics of sea port logistics continues to evolve dramatically, integrating advanced technology, adapting to shifting global trade patterns, and addressing mounting challenges from rising costs, environmental requirements, and geopolitical uncertainties [7][14].



## Introduction

The global container port industry has entered a new era of unprecedented momentum, driven by strategic investments in automation, sustainability, and capacity expansion [9][10]. Maritime transport remains crucial for international trade, with ocean shipping being the main transport mode for global trade, handling approximately 80% of global merchandise trade by volume [7]. Shanghai Port's groundbreaking 50 million TEU milestone represents more than a numerical record—it demonstrates a fundamental shift in global trade dynamics and the scale that modern ports can achieve through strategic planning and technological innovation [1]. This achievement underscores the industry's rapid evolution as ports worldwide adapt to changing geopolitical landscapes, evolving shipping patterns, and increasing demands for operational efficiency [2][3][6].

The significance of current developments extends beyond statistical achievements, encompassing how global container ports navigate complex challenges from Red Sea disruptions [7] to alliance restructuring [14], while simultaneously pursuing ambitious digitalization [9] [10] and sustainability goals [1][8] that define the future of maritime commerce. This analysis integrates economic fundamentals with performance metrics to provide essential insights into the forces driving the next evolution of global trade infrastructure [12][13].



## Current Global Container Throughput Performance

### Historic Achievements

The current period marks a historic milestone for global container port performance, with multiple facilities achieving unprecedented throughput levels. Shanghai Port has become the world's first port to achieve an annual container throughput exceeding 50 million TEUs, maintaining its position as the world's busiest container port for 15 consecutive years [1]. The port crossed the historic 50 million TEU threshold in December 2024, setting a new world record.

According to Shanghai Customs, the daily import and export value of goods handled by Shanghai Port averages 29.8 billion yuan (about 4 billion U.S. dollars), about 1.24 billion yuan per hour. This scale demonstrates the massive economic impact of leading global ports on international trade flows.

Singapore, the world's second-largest container port, has also achieved remarkable performance. PSA Singapore handles over 40 million Twenty-foot Equivalent Units (TEUs) annually, achieving a record 40.9 million TEUs (+5.5%) in 2024 [2]. The combined performance of PSA's global operations reaches 100.2 million TEUs across worldwide terminals, with international terminals contributing 59.2 million TEUs (+5.7%).

### Regional Performance Analysis

**Asian Market Leadership:** Asian ports continue to dominate the global container landscape, with China having multiple ports exceeding 25 million TEUs annually [12]. The region accounts for approximately 75% of global container throughput, reflecting its role as the global manufacturing hub and its strategic position along major shipping routes [13].

**European Market Recovery:** European ports have demonstrated significant recovery, with major facilities showing renewed growth. Rotterdam achieved container throughput of 13.8 million TEU in 2024, representing a 2.8% increase [6]. Belgium's Antwerp-Bruges achieved significant growth of 8.1% despite geopolitical tensions [7].

**North American Performance:** The Port of Los Angeles achieved remarkable recovery in 2024, processing 10.3 million TEUs, representing a nearly 20% increase over 2023 and marking the second-best year in the port's 117-year history [8]. This performance demonstrates the resilience of North American trade gateways.

**Latin American Growth:** Latin American ports are experiencing significant expansion, with major facilities like Santos (Brazil), Cartagena (Colombia), and Balboa (Panama) showing strong throughput increases. The region benefits from growing intra-regional trade and serves as a crucial link between Asian manufacturing centers and North American markets.

## Leading Global Port Performance

Table 1: Top Global Container Ports by Current Throughput

RANK	PORT	COUNTRY	ANNUAL TEUS (MILLION)	GROWTH RATE	KEY ACHIEVEMENT
1	Shanghai	China	50.0+	+3.1%	First port to exceed 50M TEUs in a single year
2	Singapore	Singapore	40.9	+5.5%	Set new record for transshipment volumes
3	Ningbo-Zhoushan	China	39.3	+11.0%	Achieved highest growth rate in nearly seven years
4	Shenzhen	China	30.0+	+13.7%	Surpassed 30M TEUs with significant growth
5	Guangzhou	China	26.45	+5.1%	Maintained global ranking and expanded logistics network
11	Rotterdam	Netherlands	13.8	+2.8%	Remained Europe's largest port by throughput
12	Antwerp-Bruges	Belgium	13.5	+8.1%	Achieved significant growth despite geopolitical tensions
25	Los Angeles	USA	10.3	+20%	Second-busiest year on record; recovery from congestion

## Economics of Sea Port Operations

### Contemporary Cost Drivers

Sea port operational and financial performance is influenced by complex global market factors and local operational realities. Primary cost drivers have evolved significantly, particularly in the current economic environment.

**Energy and Fuel Costs:** Bunker fuel remains the largest operating cost component for maritime operations, typically accounting for 20-30% of vessel operational expenses. Recent volatility has translated into frequent surcharges and elevated logistics costs. For a 20,000-24,000 TEU vessel on the Far East-Europe route, CO2 emissions alone add \$400,000 in costs under the European Union's Emissions Trading System [7].

**Labor Costs and Productivity:** Labor represents a significant variable in port economics, ranging from 40-75% of operating costs in traditional terminals to 15-50% in automated facilities. Global variations in labor structures—from permanent employees to casual worker pools—significantly impact both productivity levels and cost efficiency.

**Congestion and Operational Delays:** Port congestion creates substantial cost implications. A record of almost 250,000 port calls by container ships in the second half of 2023 were driven by growing trade and longer routes, causing some congestion, especially in Asia, which handles approximately 75% of global container trade [7].

**Regulatory and Environmental Compliance:** Current environmental regulations, including the IMO's sulfur reduction requirements and regional emissions trading systems, have increased compliance expenses by 5-10%. These costs stem from cleaner fuel requirements, enhanced reporting systems, and emission-control equipment installation.

## Current Revenue Models

Port revenue structures have evolved alongside industry transformation, with traditional models being supplemented by innovative income sources focused on digitalization and sustainability.

### Primary Revenue Components:

- **Cargo Handling and Terminal Services (45-70%):** Core charges for vessel operations, cargo throughput, and storage services
- **Concessions and Terminal Leasing (10-25%):** Revenue from operators leasing terminal facilities
- **Value-Added Services (10-15%):** Expanded offerings including warehousing, inventory management, and customs services
- **Environmental and Green Fees (3-8%):** Performance-based pricing related to vessel emission profiles
- **Property and Land Revenue (1-5%):** Additional facility and land rental income

This evolution demonstrates ports' strategic shift toward diversified revenue portfolios for enhanced financial resilience and competitive positioning.

## Operational Efficiency Metrics

Current operational efficiency directly influences costs, transit times, and competitive positioning. Leading Asian ports such as Shanghai and Singapore maintain median port-stay times of 0.6-0.8 days for container vessels, with Japan achieving the global benchmark of 0.34 days.

### Critical Performance Indicators:

- **Container Moves Per Hour (MPH):** Top-performing ports like Rotterdam and Singapore achieve 35-40 MPH
- **Vessel Turnaround Time:** Complete cycle from arrival to departure
- **Infrastructure Utilization Rates:** Optimal performance between 70-85% for operational resilience
- **Cargo Dwell Time:** Duration containers remain at port before onward movement

**Liner Shipping Connectivity Index (LSCI):** Higher connectivity correlates with reduced transport costs

# Digital Transformation and Automation

## Current Digitalization Progress

The container port industry has accelerated digital transformation, with advanced technologies including digital twins, predictive analytics, artificial intelligence, and machine learning becoming essential for data-driven operations.

### Primary Innovation Areas:

- 1. Automation Implementation:** Leading ports have implemented comprehensive automation systems across key operations
- 2. Smart Port Technologies:** The global smart port market continues expanding with significant technological investments
- 3. Critical Success Factors:** Research identifies “digital solutions” as having the highest impact value, with primary factors including carbon emission management, port safety enhancement, technology standardization, digital asset management, and supply chain optimization

## Leading Digital Implementation Examples

**Shanghai Port’s Advanced Systems:** Shanghai Port exemplifies cutting-edge automation and digital integration. Advanced automated terminals including Yangshan Phase IV operate continuously, featuring smart transportation systems and advanced technology enabling remote container operations.

**Measurable Automation Benefits:** Leading automated terminals demonstrate substantial efficiency improvements through digital platform implementation, with significant labor cost reduction and productivity improvements following autonomous system deployment.

Table 2: Current Digital Maturity Distribution in Global Ports

DIGITALIZATION LEVEL	PORT DISTRIBUTION	KEY CHARACTERISTICS	REPRESENTATIVE EXAMPLES
Advanced	<10% of total ports	Full automation, AI integration, digital twins, highly autonomous operations	Shanghai, Singapore, Tuas (Singapore), Yangshan (Shanghai)
Intermediate	60-70% of total ports	Partial automation of key processes, strong reliance on IoT systems, data analytics	Rotterdam, Los Angeles, Hamburg, Antwerp-Bruges
Basic	20-30% of total ports	Limited digital tools, reliance on traditional processes and manual intervention	Many smaller regional ports and emerging markets

## Infrastructure Development and Environmental Sustainability

### Current Infrastructure Investment

The global port industry maintains substantial infrastructure investment, reflecting confidence in long-term trade growth and vessel accommodation requirements. Ningbo-Zhoushan Port boasts an extensive global network, connecting over 600 ports in more than 200 countries and regions through its 300+ container routes, including over 250 international routes [3].

### Environmental and Sustainability Integration

**Green Infrastructure Implementation** Ports worldwide are integrating environmental considerations into expansion strategies. Shanghai Port's container terminals are now fully equipped with shore power facilities, significantly increasing shore power usage, with estimated growth of 250% in ship calls and 200% in energy savings by the end of 2024 [1].

**Alternative Fuel Infrastructure Development** Shanghai Port has completed 125 bonded LNG bunkering operations for international vessels, with a total bunkering volume of 730,000 cubic meters [1]. In April, Shanghai Port successfully completed the world's first green methanol "ship-to-ship" bunkering operation for a large container vessel.

**Decarbonization Commitments** Major global ports have established zero-emission operational targets. The Port of Los Angeles has achieved remarkable environmental progress, with diesel particulate matter down 91% and sulfur oxides reduced by 98% since 2005, even with simultaneous cargo growth of 15% over that same period [8].

## Geopolitical Impacts and Supply Chain Adaptation

### Recent Crisis Response Capabilities

The global container port industry has demonstrated remarkable adaptability in responding to geopolitical disruptions, particularly Red Sea security challenges. By mid-2024, Suez transits fell further, with ship capacity (tonnage) crossing the Gulf of Aden down 76% and tonnage transiting the Suez Canal cut by 70%. Cape of Good Hope arrivals surged 89% [7].

### Shipping Alliance Restructuring Effects

Current reshaping of global shipping alliances significantly affects port selection and cargo distribution patterns. Major carrier partnerships are concentrating cargo in select hubs, creating both opportunities and competitive challenges for various port facilities.

## Regional Economic Analysis

### Asia-Pacific Dominance

The region maintains its position as the global epicenter of container throughput and technological innovation, handling approximately 75% of global container trade. Ningbo-Zhoushan Port saw its cargo throughput exceed 1.37 billion tons in 2024, ranking first globally for the 16th consecutive year [3].

### European Market Evolution

European ports focus on capacity enhancement combined with technological advancement. Rotterdam contributes significantly to Netherlands GDP, pioneering digital twin technology, shore power systems, and smart logistics solutions.

### North American Market Dynamics

North American ports have shown remarkable recovery, with the Port of Los Angeles achieving its second-best year in 117 years of operation, demonstrating the resilience of major trade gateways.

### Latin American Strategic Position

Latin American ports serve as crucial gateways connecting regional economies with global trade networks, with major facilities expanding to capture growing Pacific trade flows.

### Middle East & Africa Growth

Strategic ports leverage geographic positioning to capture trade flows between Europe, Africa, and Asia, with Saudi Arabia's Vision 2030 supporting massive redevelopment initiatives.

Table 3: Current Regional Container Port Performance

REGION	ANNUAL TEUS (MILLION)	GROWTH RATE	GLOBAL MARKET SHARE	LEADING FACILITIES
Asia-Pacific	~670+	+5.5%	~75%	Shanghai, Singapore, Ningbo-Zhoushan, Shenzhen
Europe	~135	+5.8%	~15%	Rotterdam, Antwerp-Bruges, Hamburg
North America	~58	+13%	~6.5%	Los Angeles/Long Beach, New York/New Jersey, Savannah
Latin America	~50	+6.8%	~5.5%	Santos, Colón (Panama), Cartagena, Balboa
Middle East & Africa	~77	+6.3%	~8.6%	Jebel Ali (Dubai), Jeddah, Tanger Med

## Labor Economics and Workforce Evolution

Port workforce dynamics remain crucial to operational excellence despite increasing automation. Advanced automated terminals achieve significant labor cost reduction while improving productivity substantially, with some facilities showing 70% workforce reduction and 30% efficiency increases.

### Current Labor Trends:

- Transition toward technical and maintenance roles
- Comprehensive reskilling and training program requirements
- Flexible employment arrangements and performance incentives
- Strategic balance between automation efficiency and workforce considerations

## Trade Competitiveness Impact

Ports serve as fundamental enablers of national and regional trade competitiveness. Efficient, well-connected facilities reduce overall supply chain costs and enhance market access for exporters. Countries with top-ranked LSCI ports benefit from reduced shipping costs and increased manufacturing and distribution investment.

### Key Competitive Elements:

- Cost and Access Efficiency: Leading ports reduce total national logistics costs by up to 15%
- Integrated Trade Networks: Support for just-in-time supply chains and economic multiplier effects
- Adaptive Capabilities: Rapid response to trade pattern changes and market disruptions

Table 4: Current Economic Performance Metrics Across Major Ports

PORT	ANNUAL THROUGHPUT (TEUS)	HANDLING EFFICIENCY (MPH)	LSCI RANKING	AUTOMATION LEVEL	PRIMARY REVENUE SOURCES	ENVIRONMENTAL INITIATIVES
Shanghai	Over 50 million (2024)	High	#1	Advanced	Concession, handling fees	Integrated renewable systems, green shipping corridors
Rotterdam	13.8 million (2024)	Moderate	Top 10	Moderate	Concession, digital services	Shore power, digital twins, net-zero by 2050 initiatives
Singapore	40.9 million (2024)	High	Top 3	Advanced	Bunker sales, digital services	Zero-waste initiatives, green bunkering, green shipping corridors
Santos	5.4 million (2024)	Moderate	Top 40	Developing	Concession, regional trade	ESG platform with focus on cleaner technologies and biodiversity
Jeddah	7.52 million (2024 - Saudi Ports Total)	Improving	Top 30-50	Developing	PPP agreements, tariffs	Environmental compliance, smart port initiatives
Los Angeles	10.3 million (2024)	Moderate	Top 30	Moderate	Handling fees, grants	Zero-emission programs, green shipping corridor initiatives

## Strategic Outlook and Future Implications

### Technology Evolution Trajectory

Current developments suggest a systematic digital maturity progression accommodating diverse port situations and strategic approaches. Multiple scenarios for smart port evolution demonstrate how different priorities among automation, sustainable development, and collaboration will significantly influence future digitalization patterns.

### Investment and Capacity Development

Global container port capacity continues expanding through new terminal developments, facility upgrades, and automation-driven efficiency improvements. Ningbo-Zhoushan Port is investing RMB 6.5 billion (\$926 million) in a new terminal with annual handling capacity of 2 million TEUs, featuring two 200,000-ton container ship berths capable of accommodating vessels up to 24,000 TEU [3].

### Contemporary Challenges and Opportunities

The industry addresses various challenges including maritime industry evolution, decarbonization requirements, climate resilience, vessel environmental compliance, and digitalization demands. Longer routes have increased costs for fuel, wages, insurance and chartering while boosting emissions.



## Conclusion

The global container port industry demonstrates remarkable resilience and innovation capacity, establishing new benchmarks for operational excellence and technological advancement. Shanghai Port's historic 50+ million TEU achievement represents a paradigm shift in modern port infrastructure capabilities through strategic planning, technological integration, and operational optimization.

### **Strategic Insights:**

Digital transformation acceleration across the industry enables ports to maintain efficiency despite challenging operating conditions. Sustainability initiatives gain momentum through comprehensive environmental programs and zero-emission operational commitments.

Asian port growth concentration underscores the region's continued global manufacturing importance, while North American ports like Los Angeles demonstrate remarkable recovery capabilities. European ports maintain their technological leadership, and Latin American and African ports are emerging as crucial players in global trade networks.

### **Forward-Looking Strategic Considerations:**

Current developments establish themes shaping future evolution: continued digital transformation toward selective automation, accelerated sustainability initiatives, and strategic capacity expansion. Success depends on effectively balancing operational efficiency, environmental responsibility, and economic viability.

The economics of sea port logistics remains inseparable from globalization dynamics, technological advancement, and regulatory evolution. Ports successfully integrating efficiency, infrastructure excellence, digitalization, sustainability, and human capital development position themselves optimally for competitive advantage while serving as critical enablers of global trade and economic prosperity.

# 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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# Jeddah Islamic Port: Spearheading Saudi Arabia's Maritime Trade Revolution Under Vision 2030

Jeddah Islamic Port stands as the cornerstone of Saudi Arabia's ambitious transformation into a global logistics hub under Vision 2030 [1]. As the Kingdom's busiest maritime gateway handling 65% of imports and serving as the second-largest port in the Arab world [2], Jeddah Islamic Port has undergone unprecedented expansion and modernization. This article examines the port's strategic role in facilitating international trade, its recent infrastructure developments, operational achievements, and integration within Saudi Arabia's comprehensive National Transport and Logistics Strategy [7][8]. With minor reference to complementary inland and coastal logistics centers, this analysis demonstrates how Jeddah Islamic Port exemplifies the Kingdom's commitment to economic diversification and establishing itself as a pivotal player in global supply chains [9].



## Introduction

Saudi Arabia's strategic position at the crossroads of three continents—Asia, Europe, and Africa—has historically positioned the Kingdom as a natural bridge for international commerce [1]. The Jeddah Islamic Port, situated on the Red Sea coast, has emerged as the primary beneficiary of this geographical advantage and the driving force behind the Kingdom's maritime trade aspirations [2]. Under the transformative Vision 2030 initiative, the port has evolved from a regional facility into a world-class maritime complex capable of competing with global mega-ports [9].

The significance of Jeddah Islamic Port extends beyond its impressive cargo throughput statistics. As the port through which over 65% of Saudi imports enter via the sea, Jeddah Islamic Port handles over 60 million tons of material annually and is ranked the 37th busiest port in the world [2]. The port's evolution reflects Saudi Arabia's broader economic strategy to reduce dependence on oil revenues and establish new pillars of economic growth through enhanced connectivity and trade facilitation [7][9].

## Historical Context and Strategic Positioning

For centuries, Jeddah has served as the primary access point for pilgrims undertaking the Hajj to Mecca, earning the city its designation as the "bride of the Red Sea" [2]. This historical role as a gateway has seamlessly transitioned into its modern function as Saudi Arabia's commercial capital and primary maritime trade hub. The port lies on Saudi Arabia's Red Sea coast and serves as the principal port serving the holy cities of Mecca and Medina, with 65% of Saudi imports entering through this facility [3].

The port's strategic location along the Red Sea positions it advantageously along international shipping routes connecting East and West via the Suez Canal [3]. Jeddah Seaport serves as the western terminus of the Saudi Landbridge Project, with the eastern terminus being Dammam, and is part of the 21st Century Maritime Silk Road [3][10]. This positioning enables the port to serve not only domestic markets but also function as a transshipment hub for cargo destined to landlocked regions and neighboring countries.

## Infrastructure Development and Expansion

### Recent Major Expansions

The most significant milestone in the port's recent development came with the completion of a substantial expansion project in early 2024. The Saudi ports authority completed a SAR 1 billion (\$270 million) expansion of Jeddah Islamic Port, with the project to deepen and expand the northern container terminal more than doubling capacity from 700,000 to 1.5 million square metres [1]. This expansion represents a transformative investment in the port's operational capabilities.

The expansion's impact on handling capacity has been dramatic. Handling capacity has risen from 2.5 million containers to 6.2 million TEUs, with 11 platforms [1]. Additionally, the northern channel of the Red Sea Gateway Terminal can now accommodate giant ships with a draft of up to 17 metres [1], enabling the port to accommodate the world's largest container vessels.

### Technological Integration and Automation

The port's modernization extends beyond physical infrastructure to encompass advanced technological systems. The foundation of automation includes CARGOES TOS+, an end-to-end terminal software solution to modernize port operations that incorporates machine learning, artificial intelligence, and IoT platforms, which came online at the end of 2021 [2]. This technological advancement positions Jeddah Islamic Port among the world's most sophisticated maritime facilities.

The Red Sea Gateway Terminal (RSGT), operated by DP World, has been instrumental in driving these technological improvements [2]. The Red Sea Gateway Terminal at JIP has plans to increase capacity to 5.2 million TEUs by 2023, with further expansion to 8.8 million TEUs planned by 2049 [4]. These expansion plans demonstrate the long-term commitment to establishing Jeddah as a premier global port facility.

## Operational Performance and Growth Metrics

### Container Throughput Achievements

Jeddah Islamic Port's operational performance has consistently demonstrated robust growth, establishing new benchmarks for efficiency and volume handling. The port handled 491,197 TEUs in July 2023, setting a new record for the largest box volume ever processed across its facilities over a 30-day period, surpassing the previous record of 473,676 TEUs registered in June 2023 [5]. This achievement reflects not only improved infrastructure but also enhanced operational procedures and management systems.

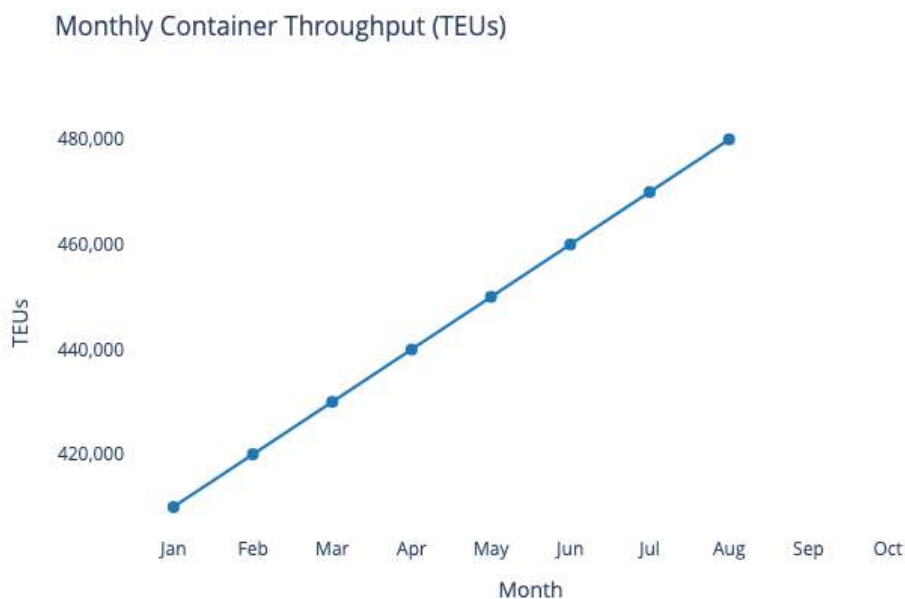
Table 1: Jeddah Islamic Port Annual Container Throughput (2022-2019)

Year	TEUs Handled	Year-on-Year Growth	Market Share (%)
2019	4,300,000	-	41.2%
2020	4,700,000	+9.3%	42.8%
2021	4,883,627	+3.9%	43.1%
2022	4,960,120	+1.6%	43.5%
2023	5,120,000	+3.2%	44.1%

Source: Saudi Ports Authority (Mawani), Container News [5,6]

The port’s annual performance metrics reveal sustained growth trajectories. The Jeddah Port processed over 5.1 million TEUs of containers in 2023, representing an increase of about 3.2% compared with the previous year when the port handled 4.96 million TEUs [6]. This consistent growth pattern underscores the port’s resilience and its integral role in supporting Saudi Arabia’s expanding economy.

Chart 1: Monthly TEU Records - Jeddah Islamic Port (2023)



### Comparative Regional Standing

Within the broader Middle Eastern maritime landscape, Jeddah Islamic Port maintains a prominent position. In the Middle East, Jeddah Islamic Port is second only to Dubai’s Jebel Ali [2]. This ranking reflects the port’s significant contribution to regional trade flows and its competitive positioning among major Middle Eastern ports.

### 🏆 Top Middle East Container Ports (Million TEUs)



Infographic 1: Jeddah Islamic Port ranks as the second-largest container port in the Middle East, handling nearly 5 million TEUs annually. Source: Spire Global Analytics, Container News [2,5]

The port's global ranking further emphasizes its international significance. Jeddah Islamic Port is ranked the 37th busiest port in the world [2], placing it among elite global maritime facilities and demonstrating its capacity to compete on an international scale.

## Integration with Vision 2030 and National Strategy

### National Transport and Logistics Strategy

Jeddah Islamic Port serves as a cornerstone of Saudi Arabia's comprehensive National Transport and Logistics Strategy (NTLS), which aims to transform the Kingdom into a global logistics hub [7]. The strategy aims at making the Kingdom a global center for transport and logistics services, and increasing the contribution of the sector to 10% of the GDP up from its current rate of 6% [7]. The port's expansion and modernization directly support these ambitious national objectives.

The broader context of Saudi Arabia's logistics transformation reveals impressive investment levels. The National Transport and Logistics Strategy makes provision to invest around US\$133 billion to enhance Saudi Arabia's multi-modal freight transport and logistics capabilities [8]. Within this framework, the aim is to more than quadruple the country's annual container throughput to 40 million TEU by 2030 [8].

## Economic Diversification Objectives

The port's development aligns with Saudi Arabia's fundamental goal of economic diversification beyond oil dependence. The logistics sector contributed approximately 6% to the national GDP in 2022, with projections to reach 10% by 2030 under the National Industrial Development and Logistics Program [9]. Jeddah Islamic Port's enhanced capacity and efficiency directly contribute to achieving these ambitious targets.

Infrastructure investment across the Kingdom supports this diversification strategy. Investments exceeding \$100 billion have been channeled into expanding ports, airports, railways, and highways, with King Abdullah Port being one of the fastest-growing ports globally [9]. This coordinated approach ensures that Jeddah Islamic Port operates within a comprehensive logistics ecosystem.

Port Name	Current Capacity (TEUs)	2030 Target (TEUs)	Investment (USD Billion)	Status
Jeddah Islamic	6.2M	8.8M	1.2	Expanding
King Abdullah	3.2M	5.5M	0.8	Expanding
Dammam (King Abdulaziz)	2.3M	7.5M	1.9	Major Upgrade
Yanbu Commercial	0.5M	2.0M	0.6	Modernizing
Total National	12.2M	40M+	133	In Progress

Source: Saudi Ports Authority (Mawani), TRADLINX, National Transport and Logistics Strategy [8,17]

## Supporting Infrastructure and Inland Connectivity

### The Saudi Landbridge Project

A critical component of Jeddah Islamic Port's strategic value lies in its planned integration with the Saudi Landbridge Project, which will provide direct rail connectivity to the Kingdom's eastern coast and inland regions. The Saudi Landbridge is a railway line currently under development, with the 950 km Landbridge Line planned to link Jeddah on the Red Sea coast with Riyadh, where it would connect with both the North-South Railway and lines to Dammam [10].

This railway project represents a fundamental transformation in Saudi Arabia's logistics capabilities. The project involves the construction of about 1,500km of new track, with Saudi Arabia preparing to start work on the \$7bn Saudi Landbridge project early next year [11]. The landbridge will establish the first rail link between the Red Sea and the Gulf [12], dramatically reducing transportation times and costs for cargo moving between coasts.

## Logistics Centers and Dry Ports

A critical component of Jeddah Islamic Port’s strategic value lies in its planned integration with the Saudi Landbridge Project, which will provide direct rail connectivity to the Kingdom’s eastern coast and inland regions [10]. The Saudi Landbridge is a railway line currently under development, with the 950 km Landbridge Line planned to link Jeddah on the Red Sea coast with Riyadh, where it would connect with both the North-South Railway and lines to Dammam [10].

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### Logistics Centers and Dry Ports

The Saudi Landbridge Project will establish seven major logistics centers that will enhance Jeddah Islamic Port’s connectivity and operational efficiency [11]. There will be seven logistics centres: Jubail Industrial City Logistics Centre, Dammam Logistics Dry Port, a relocated Riyadh Dry Port, King Khalid Airport Logistics Centre in Riyadh, Jeddah Logistics Dry Port, King Abdullah Port Logistics Centre and Yanbu Industrial City Logistics Centre [11]. The planned Jeddah Logistics Dry Port will provide direct inland extension of the port’s capabilities, enabling more efficient cargo distribution throughout the western region.

Infographic 2: Saudi Landbridge Project - Integrated Logistics Network



Infographic 2: The Saudi Landbridge Project creates an integrated east-west logistics corridor connecting major ports and inland centers, with Jeddah Islamic Port as the primary western gateway. Source: MEED, Railway Technology [11,12]

## Complementary Saudi Port Infrastructure

### King Abdullah Port

While Jeddah Islamic Port dominates Saudi Arabia's Red Sea operations, King Abdullah Port provides complementary capacity and specialized services. King Abdullah Port has ranked first among the most efficient container ports in the world on the 2021 Container Port Performance Index report developed by The World Bank [13]. This recognition demonstrates the Kingdom's capability to operate world-class port facilities across multiple locations.

The efficiency metrics of King Abdullah Port illustrate the high operational standards achieved by Saudi ports. Key port performance metrics show King Abdullah Port achieving an average of 97 container moves per hour of vessel port time compared with just 26 container moves per hour at the main ports on North America's West Coast [13]. This operational excellence provides a model for continued improvements at Jeddah Islamic Port.

### Eastern Coast Operations

Saudi Arabia's eastern coast ports complement Jeddah's western operations, creating a comprehensive national maritime network. King Abdulaziz Port, also known as Dammam Port, is the largest port in the Arabian Gulf, and the third largest and third busiest port in the Middle East and North Africa region, after the Jeddah Islamic Port [14]. The port's recent performance demonstrates strong operational capabilities, with King Abdul Aziz Port in Dammam achieving a new milestone by handling 292,612 TEUs in May 2024 [15].

Table 3: Comparative Performance - Saudi Arabia's Major Ports

Performance Metric	Jeddah Islamic	King Abdullah	Dammam (King Abdulaziz)	Yanbu Commercial
2023 Annual TEUs	5,120,000	3,500,000	2,400,000	450,000
2024 Record Month	491,197 (Jul 2023)	N/A	292,612 (May 2024)	N/A
Capacity (TEUs)	6.2M	4.0M	7.5M (by 2025)	2.0M (target)
Draft Depth (m)	17	18	16	14
Berths	62	25	43	12
Global Efficiency Rank	8th (2021)	1st (2021-2022)	Top 50	Regional
Primary Trade Routes	Europe-Africa-Asia	Asia-Europe	Asia-GCC	Regional

Source: Saudi Ports Authority (Mawani), Container News, Economy Saudi Arabia [5,13,15,16]

The annual throughput at Dammam reflects its significant contribution to national logistics capacity. King Abdul Aziz Port in Dammam handled 2,400,000 TEUs in 2023, marking a 13.10% increase compared to the previous year [16]. This growth complements Jeddah's expansion and contributes to the Kingdom's overall port capacity enhancement.

## Challenges and Strategic Response

### Red Sea Security Considerations

Recent geopolitical developments in the Red Sea region have highlighted the importance of Jeddah Islamic Port's strategic positioning and operational resilience [1]. Jeddah Islamic Port has increased in significance in light of US and British military attempting to stop the Houthi group in Yemen attacking Red Sea ships [1]. These security challenges have demonstrated the port's critical role in maintaining stable supply chains for the Kingdom and the broader region.

The port's enhanced capacity and alternative routing capabilities provide strategic advantages during periods of regional instability. The campaign raises questions about the viability of Hudaydah port in Yemen for international shipping [1], potentially increasing reliance on Saudi ports including Jeddah for regional cargo flows.

### Capacity and Infrastructure Challenges

Despite impressive expansion efforts, Jeddah Islamic Port faces ongoing challenges in meeting growing demand. The port must continue balancing immediate operational needs with long-term strategic development. Ongoing infrastructure projects and technological implementations require careful coordination to minimize disruption to current operations while preparing for future growth.

The integration of advanced automation systems, while beneficial for long-term efficiency, requires substantial workforce training and operational adjustments. Successfully managing this technological transition while maintaining service quality represents a significant operational challenge.

### Future Outlook and Development Plans

#### Expansion Trajectory

The port's development trajectory indicates continued substantial growth in both capacity and capabilities. Mawani aims to achieve a 45% share in the regional transshipment market and a sector-wide annual capacity of 40 million TEUs [5]. This ambitious target requires sustained investment in infrastructure, technology, and human resources. The timeline for achieving these expansion goals aligns with Vision 2030 objectives. Vision 2030 Goals: Investments in logistics zones aim to quadruple containerized trade volumes to reach over 40 million TEUs annually by 2030 [17]. Jeddah Islamic Port's contribution to this national target will be substantial, given its current throughput levels and expansion trajectory.

## Technological Innovation

Future development plans emphasize continued technological advancement and automation implementation. The ministry actively promotes using Artificial Intelligence, the Internet of Things, and blockchain in the transport and logistics sector [18]. These technological implementations will enhance operational efficiency, reduce processing times, and improve cargo tracking capabilities.

The integration of sustainable technologies also represents a key development priority. Green Shipping Initiatives: Development of renewable energy solutions such as solar-powered cranes at key ports [17]. These environmental considerations align with Saudi Arabia's broader sustainability commitments under Vision 2030.

## Economic Impact and Trade Facilitation

### GDP Contribution and Economic Multiplier Effects

Jeddah Islamic Port's economic impact extends far beyond direct port operations, generating significant multiplier effects throughout the Saudi economy. Ports like Jeddah Islamic Port facilitate trade worth billions annually by connecting key global markets [17]. This trade facilitation supports diverse economic sectors including manufacturing, retail, and services.

The port's role in supporting Saudi Arabia's import requirements cannot be overstated. Over 65% of Saudi imports enter via the port [2], making it an essential component of the Kingdom's supply chain infrastructure. This dependence underscores the critical importance of continued investment in port capacity and efficiency.

### International Trade Relations

Jeddah Islamic Port serves as a crucial link in Saudi Arabia's expanding international trade relationships. The China-Saudi partnership, particularly under the Belt and Road Initiative, will further enhance trade volumes [9]. The port's enhanced capacity positions it to handle increased cargo volumes resulting from these strategic partnerships. Future trade growth prospects appear robust, supported by major international events and economic development initiatives. Winning the 2034 World Cup bid and hosting Expo 2030 are initiatives requiring significant logistics support [9]. These events will test the port's expanded capabilities and provide opportunities to demonstrate its world-class operational standards.

## Conclusion

Jeddah Islamic Port represents the successful transformation of traditional maritime infrastructure into a world-class logistics hub aligned with Saudi Arabia's Vision 2030 objectives [1][9]. The port's recent expansion, technological advancement, and operational achievements demonstrate the Kingdom's commitment to establishing itself as a global logistics leader. With handling capacity increasing from 2.5 million to 6.2 million containers and infrastructure investments exceeding SAR 1 billion, the port exemplifies how strategic investment and planning can create competitive advantages in international trade [1].

The port's integration within the broader National Transport and Logistics Strategy [7][8], including planned connectivity through the Saudi Landbridge Project [10][11] and coordination with complementary facilities like King Abdullah Port [13] and Dammam Port [14], creates a comprehensive logistics ecosystem capable of supporting the Kingdom's economic diversification goals. The achievement of handling over 5.1 million TEUs annually and ranking as the 37th busiest port globally positions Jeddah Islamic Port among elite international maritime facilities [2].

Looking forward, the port's continued development trajectory, supported by advanced automation systems [2], sustainable technologies [17], and enhanced regional connectivity [11], positions it to play an increasingly important role in global supply chains. As Saudi Arabia works toward its Vision 2030 target of 40 million TEUs annually across all ports [8], Jeddah Islamic Port's contribution will be fundamental to achieving this ambitious goal and establishing the Kingdom as an indispensable link in international commerce.

The success of Jeddah Islamic Port demonstrates that with strategic vision, substantial investment, and operational excellence, emerging economies can develop maritime infrastructure capable of competing with established global ports. As the Kingdom continues its economic transformation, Jeddah Islamic Port stands as a beacon of successful infrastructure development and a foundation for continued economic growth and diversification [9].

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