Spectrum Auction for Next Generation Mobile Services (NGMS)/5G - 2026

I. Spectrum Auction - a "make-or-break" moment for Pakistan's telecom infrastructure

Pakistan Telecommunication Authority (PTA) held the auction of next-generation mobile (IMT) spectrum on March 10, 2026, raising revenue of USD 507mn. The sale included two lots in the 700 MHz band, all five lots in the 2300 MHz band, all 19 lots in the 2600 MHz band and 22 out of 28 lots in the 3500 MHz band. Jazz emerged as the largest buyer in the auction, acquiring 190 MHz of spectrum followed by Ufone which secured 180 MHz while Zong acquired 110 MHz. This expansion is expected to materially enhance network capacity, improve spectral efficiency, and support higher data throughput across mobile networks, primarily through improved 4G services and a gradual, inclusive transition toward 5G.

So far, Pakistan's mobile telecom sector has remained structurally constrained by limited spectrum availability, following relatively modest allocations in the 2014, 2016, and 2021 auctions. Incremental additions during these rounds failed to keep pace with exponential growth in data consumption, resulting in persistent network congestion, declining quality of service, and limited scope for effective data monetization. Consequently, spectrum scarcity has remained a key structural impediment to sustainable sector profitability.

Band	700 MHz	1800 MHz	2100 MHz	2300 MHz	2600 MHz	3500 MHz	TOTAL
Bandwidth (in MHz)	30 (2x15)	7.2 (2x3.6)	40 (2x20)	50	190	280	597.2

Source: PTA, HMFS Research

Available Spectrum by Band (MHz)

Despite the anticipated increase in spectrum depth, Pakistan's allocation per operator will remain below regional benchmarks, reflecting continued structural underinvestment relative to peer markets where Countries like Japan is deploying 28 GHz for 5G, ultra-fast, high-capacity, and low-latency services, while China has prioritized the 6 GHz band (6425–7125MHz) for 5G and future 6G services. Nevertheless, from a sector perspective, improved spectrum availability constitutes a necessary precondition for stabilizing network performance, supporting medium-term data revenue growth, and enabling gradual ARPU (Average Revenue Per User) recovery. Over the medium term, enhanced capacity is expected to facilitate greater enterprise monetization, support digital service expansion, and improve operating leverage.

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For listed telecom operators and digital infrastructure providers, the 2026 spectrum auction represents a structural inflection point rather than a short-term cyclical catalyst. While near-term financial pressure from spectrum-related investments is likely, successful deployment and capacity enhancements will be central to long-term earnings sustainability and valuation re-rating across the sector.

II. Auction Framework & Mechanics

The auction has been conducted under a technology-neutral framework, enabling operators to deploy acquired frequencies across multiple generations, including 4G and 5G. This approach provides greater operational flexibility, allowing operators to optimize network investments based on evolving demand patterns and device penetration. To hedge against currency devaluation, the base prices remain denominated in US dollars—ranging from USD 0.65mn/MHz for the 3500 MHz band to USD 14mn/MHz for the 1800/2100 MHz bands for investors. Financial viability is further supported by a one-year payment moratorium, after which winners must pay 50% upfront, with the remaining balance spread over five equal annual instalments at a financing cost of KIBOR + 3%. The inclusion of both low-band (coverage) and mid/high-band (capacity) frequencies is intended to support balanced network deployment, ensuring 5G functionality across residential, commercial, and industrial environments. The duration of the License will be fifteen (15) years which will be renewable as per policy.

Frequency Band	Type	Base Price (USD/MHz)	Strategic Role
700 MHz	Paired	6.5M	Deep indoor penetration and rural coverage
1800 / 2100 MHz	Paired	14.0M	Core LTE capacity and network stability
2300 MHz	Unpaired	1.0M	Cost-effective supplemental capacity
2600 MHz	Unpaired	1.25M	High-speed urban and dense-area coverage
3500 MHz	Unpaired	0.65M	Primary 5G and industrial IoT band

Source: Spectrum IM, HMFS Research

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Phased Deployment Framework

Successful bidders in the 2026 spectrum auction will be subject to a phased rollout framework spanning 2026 to 2035, comprising four mandatory implementation phases. Licensees are required to deploy a minimum of 1,000 advanced-technology sites annually, of which at least 20% must be new locations. The fibre-to-the-site (FTTS) ratio is to be increased to 20%-35% in a phased manner. New entrants are required to deploy at least 200 sites per year, with minimum 20% FTTS and 20% 5G coverage.

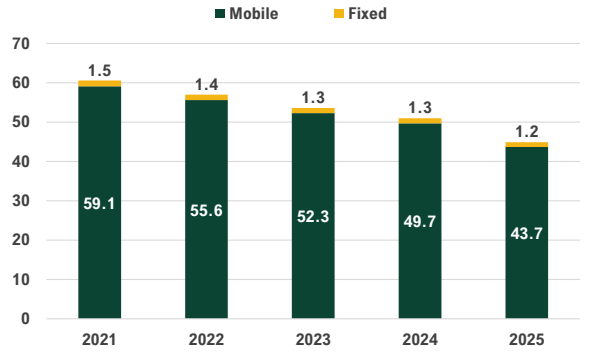
Phase 1: Initial Expansion (2026–2028) - This phase focuses on strengthening coverage in major urban centres and high-demand locations while addressing existing network gaps.

Phase 2: Network Deepening (2028–2030) - This stage extends coverage to additional cities and critical service locations. Priority coverage is required for universities, industrial zones, transport hubs, hospitals, and technology parks.

Phase 3: Geographic Expansion (2030–2032) - It emphasizes coverage expansion into less densely populated areas and remaining underserved regions.

Phase 4: Nationwide Coverage (2032–2035) - The final phase targets comprehensive nationwide network coverage. 5G services are to be expanded to smaller cities and at least 15 additional urban centres, alongside further strengthening of previously covered areas.

Broadband Penetration (Mobile & Fixed Broadband) - Percentage as of June

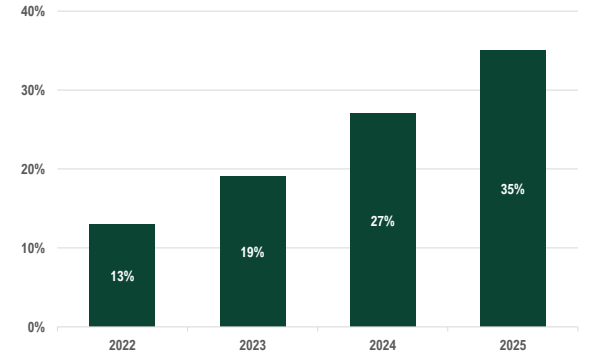


Source: PTA, HMFS Research

III. Evolution of Pakistan's Spectrum Landscape: 2014–2026

Pakistan's progression toward digital connectivity and mobile broadband maturity has been shaped by periodic spectrum releases over the past decade. Each auction cycle facilitated incremental upgrades in mobile technology; however, limited bandwidth availability and relatively high entry costs constrained the sector's long-term capacity expansion. Between 2014 and 2021, Pakistan conducted multiple targeted spectrum auctions aimed primarily at enabling the rollout and expansion of 3G and 4G services.

Growth in Broadband Penetration



Source: PTA, HMFS Research

2014 – Introduction of NGMS

The 2014 Next Generation Mobile Services (NGMS) auction marked Pakistan's formal entry into mobile broadband, enabling the commercial launch of 3G and 4G services. The auction raised approximately USD 1.13bn, in which four cellular operators—Mobilink, Telenor, Zong, and Ufone won licenses. This round established the foundation for mobile internet adoption but allocated

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allocated relatively modest bandwidth relative to long-term demand, transitioning it from 2G to 3G/4G.

2016–2017 – Coverage and Network Expansion

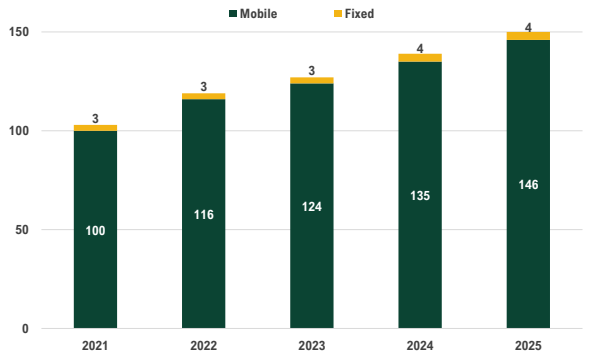
Subsequent auctions in 2016 and 2017 focused on expanding coverage and strengthening existing networks through the release of 850 MHz and additional 1800 MHz spectrum. Telenor and Jazz were the principal participants, consolidating their 4G footprints. These auctions contributed an estimated ~USD 690mn in government revenue but remained limited in scale.

2021 – Incremental Capacity Enhancement

In 2021, the PTA offered additional spectrum in the 1800 MHz and 2100 MHz bands to address rising congestion. Ufone emerged as the sole bidder, acquiring 9 MHz in the 1800 MHz band for USD 279mn. While this improved Ufone's competitive positioning, the overall industry-wide capacity impact remained modest.

By the end of 2025, Pakistan's mobile subscribers reached 201mn (Teledensity: 80.34%) with broadband subscribers increasing to 155mn up 55% since 2021, against the total spectrum holdings of around 274 MHz. This constrained capacity environment resulted in persistent network congestion, and declining service quality, placing structural limits on sector profitability and customer experience.

Broadband Subscribers (Fixed and Mobile) Millions as of June



Source: PTA, HMFS Research

Cell Sites as of June	Total	4G	Fiberized Site
2025	58,423	56,694	17.90%
2024	55,777	53,245	14.80%
2023	53,581	50,359	13.20%
2022	51,768	47,759	11.80%

Source: PTA, HMFS Research

Comparative : Previous Auctions vs. 2026 Release

Feature	2014–2021 Auctions	2026 5G Auction
Total Bandwidth	~274 MHz (over 10 years)	~600 MHz (single release)
Primary Focus	3G and 4G services	5G, IoT, industrial automation
Regulatory Framework	Technology-restricted (initially)	Technology-neutral
Payment Structure	Upfront / limited installments	1-year moratorium + KIBOR + 3%
Market Structure	Four fragmented operators	Three dominant players (post-merger)

Source: PTA, HMFS Research

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V. Economic Payoffs of the Spectrum Investment Cycle

The 2026 spectrum auction is expected to play a central role in Pakistan's medium-term fiscal consolidation and digital transformation agenda. By enabling a material expansion in network capacity and service quality, the auction is likely to support the accelerated development of digital services, industrial automation, fintech platforms, and data-driven business models. Improved connectivity and higher data throughput are expected to enhance overall economic efficiency and reduce structural bottlenecks in service delivery. The successful rollout of 5G-enabled networks is also expected to strengthen Pakistan's attractiveness to foreign investors, particularly in data / cloud services, and digital infrastructure.

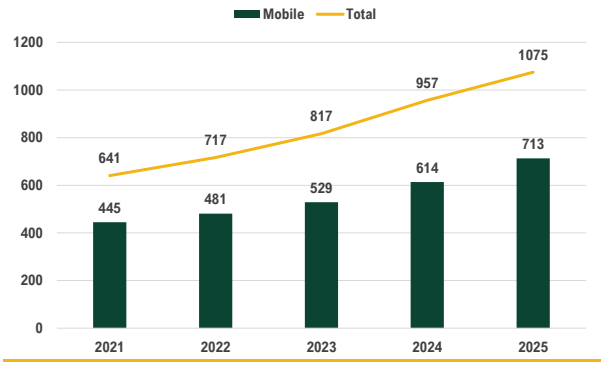
Overall, the development of a high-capacity digital ecosystem is expected to support the emergence of new technology-enabled enterprises and service exports. While projections of a multi-billion-dollar digital economy by 2030 remain subject to execution risk, sustained investment in network infrastructure represents a necessary foundation for transitioning Pakistan from a predominantly consumption-driven digital market toward a more production and services oriented technology hub.

IV. Equity Sector Analysis: Stocks to Watch

The 2026 spectrum auction represents a potential structural catalyst that could reshape sector dynamics. We expect the medium-term investment outlook to diverge across subsectors. Other than telecom operators, infrastructure and digital service providers are also positioned to benefit from accelerated network deployment and densification, supporting a constructive outlook for tower, fiber, and technology service companies. Accordingly, we maintain an overweight stance on digital infrastructure providers and telecom operators with strong balance sheets, execution capabilities, and technology relevance, which tend to benefit from the new spectrum transformations.

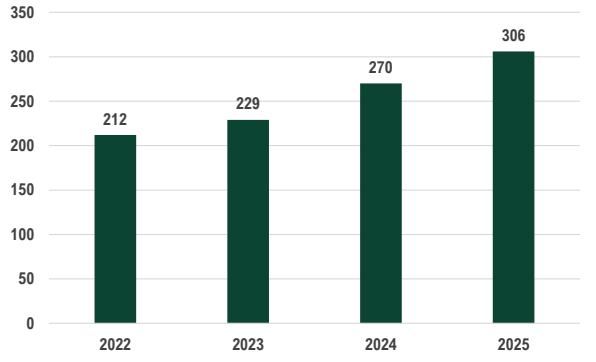
The scale of incremental network investment required to support 5G deployment is expected to generate sustained demand for digital infrastructure and hardware, transmission networks, software integration, cloud connectivity, and device manufacturing. As a result, several non-telecom listed companies are also likely to emerge as beneficiaries of the 5G investment cycle. Though we expect it will take a while before 5G is rolled out in full swing as it is a capital-intensive undertaking with a long-gestation payoff profile.

Telecom Revenue PKR bn - FY



Source: PTA, HMFS Research

Mobile ARPU Per Month- PKR



Source: PTA, HMFS Research

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Furthermore, sustained pressure on ARPUs and a heavy tax regime are expected to undermine the affordability and commercial feasibility of premium services for general users.

Despite all the limitations, we expect the following listed companies are expected to benefit from the auction:

* PTCL (PTC)
* Engro Holdings (ENGROH)
* Air Link Communication (AIRLINK)
* Supernet (GEMSPNL / STL)

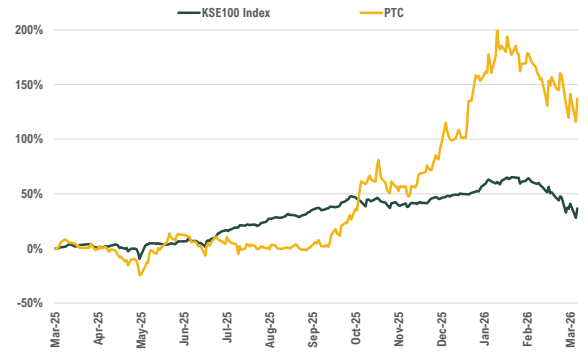
Pakistan Telecommunication Company Limited. (PTC): Best Positioned Post-Auction

PTCL commands approximately 35% mobile market share and the largest combined subscriber base in the country giving it an edge in the sector. It has an integrated platform spanning mobile, fixed broadband, enterprise services, and wholesale infrastructure which provides diversified exposure to the 5G investment cycle. PTCL's ability to internally provision fiber connectivity to mobile sites reduces reliance on third-party transmission and lowers per-site operating costs. This infrastructure enables faster network rollout, improved quality of service, and superior monetization potential of spectrum assets relative to competitors.

Following the formal completion of the Telenor Pakistan acquisition on December 31, 2025, PTCL has emerged as the country's dominant "MergeCo." PTC is well-positioned to leverage its fiber-to-the-tower (FTTT) advantage with the most extensive national fiber footprint, which is essential for 5G's high-capacity needs. PTCL's nationwide fiber backbone of approximately 70,000 km provides a critical structural advantage in the 5G era.

Post-auction, capex intensity is expected to peak in 2026 before normalizing as rollout matures. While leverage is expected to rise in the near term, we believe PTCL's diversified cash flows and synergy-driven cost savings provide adequate buffer. We expect earnings recovery from FY27 onward, driven by synergy realization, improved service quality, enterprise monetization, and improving spectrum utilization.

Relative Performance



Source: PSX, HMFS Research

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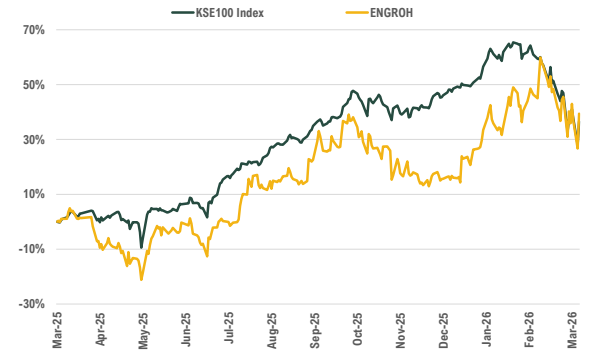
Engro Holdings Limited (ENGROH)

Engro Holdings' strategic expansion into telecom infrastructure through its wholly owned subsidiary Engro Connect positions the company to benefit from the anticipated spectrum auction and the gradual rollout of enhanced mobile networks in Pakistan. Engro Connect has assembled a nationwide tower portfolio ~15,000 sites by integrating Engro Enfrashare's existing infrastructure with the acquisition of over 10,500 towers from Jazz (Deodar) in a ~USD 563 mn transaction. Engro Enfrashare is a dominant player, capturing approximately 52-53% of the independent tower company market share. It has a tenancy ratio of 1.26x, which is lower compared to the global average (above 2.0x), indicating significant room for future growth in co-location.

The rollout of 5G in Pakistan is expected to drive significant demand for enhanced mobile connectivity, but it also brings structural implications for Engro Holdings (ENGROH). Unlike 4G, 5G networks require a higher density of cell sites and towers to maintain coverage and low latency, necessitating additional capital expenditure by Engro Connect to expand its infrastructure footprint. Moreover, 5G equipment and increased tower operations entail higher energy consumption, making solarization and other sustainable power solutions a critical component of deployment. While ENGROH's strong financial position allows it to fund these upfront investments, the full benefits of increased tower tenancy and higher recurring lease revenue are unlikely to materialize immediately; profitability from 5G adoption is expected to emerge gradually, potentially over a period exceeding one year, as operators expand their networks and co-locate on new and upgraded sites.

Relative Performance

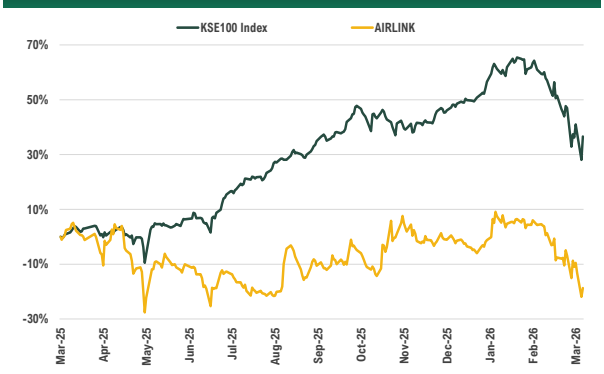


Source: PSX, HMFS Research

Air Link Communication Limited (AIRLINK)

The upcoming 5G spectrum auction and subsequent rollout are expected to serve as a major demand catalyst for Air Link Communication Limited (AIRLINK). As the telecom ecosystem transitions toward 5G, handset replacement cycles are likely to accelerate, creating significant demand for compatible devices. Industry estimates suggest that fewer than 5% of mobile users in Pakistan currently possess a 5G-enabled handset, indicating a substantial upgrade opportunity. Importantly, 5G smartphones are positioned largely in the mid-to-premium price segments, typically commanding a price premium of PKR 5,000–15,000 over comparable 4G models, with the gap widening to nearly PKR 30,000 for high-end devices. For AIRLINK—holding an estimated 20–

Relative Performance



Source: PSX, HMFS Research

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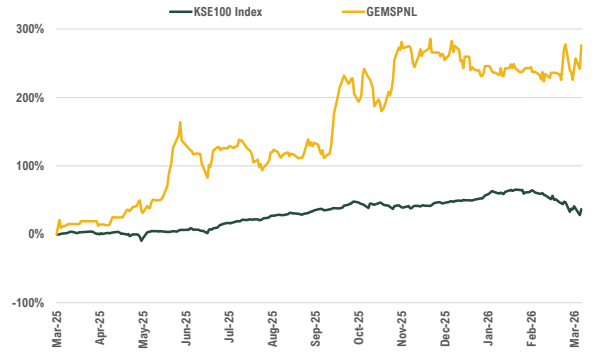
22% share of Pakistan's cellphone market and supported by a strong manufacturing footprint of over 30 assembly lines producing roughly 30 million handsets annually—this transition is expected to enhance revenue realization and margins even if overall unit growth remains moderate.

Beyond the 5G-driven upgrade cycle, AIRLINK's long-term growth outlook is supported by several structural catalysts. The company has built a robust nationwide distribution platform through strategic partnerships with globally recognized brands including Samsung, Xiaomi, Apple (Authorized Reseller), Tecno, itel, Acer Gadgets Inc., and iMiki, enabling consumers to access a diversified product portfolio spanning smartphones, smart TVs, wearables, home appliances, and accessories. Additional growth drivers include the HISENSE partnership, the rollout of Apple mono-brand stores, and the relocation of operations to the Sundar Green Special Economic Zone, which offers tax incentives and operational efficiencies. Furthermore, ongoing cost optimization initiatives—particularly increased reliance on renewable energy—are expected to support margin expansion and improve operational resilience over the medium term.

Supernet Limited (STL / GEMSPNL):

Supernet Limited offers an expansive suite of services including satellite and microwave communications, internet connectivity, FLL-based fixed infrastructure, radio links, and the installation of critical telecom equipment. As a holder of Fixed Local Loop (FLL) licenses across all 14 telecom regions in Pakistan, it has a unique license-driven competitive edge, allowing it to build and operate nationwide infrastructure independently. Supernet's 2026 push into managed services and regional connectivity makes it a key player in the enterprise 5G space. It is likely to emerge as a structural beneficiary of the spectrum and 5G auction due to its strong presence in backhaul (fiber and satellite based), FTTS, FTTH, which are critical enablers of high-capacity mobile networks.

Relative Performance



Source: PSX, HMFS Research

As operators expand spectrum holdings and densify networks, demand for fiber-based transmission and low-latency connectivity will increase, strengthening Supernet's role for telco operators in linking radio sites to core networks through fiber and/or satellite fiber i.e. by deploying high speed High Throughput Satellite technology providing instant 5G availability in rural areas where fiber is not present. By deploying 5G Fixed Wireless Access (FWA) 'Wireless Fiber strategy' in area where fiber is not present will allow Supernet for the rapid

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onboarding of branch offices with fiber-like speeds and will help the industrial sector, enabling 'Industry 4.0' automation for factories and warehouses that require ultra-low latency and high device density.

Supernet is well positioned to capture rising demand for telco / enterprise connectivity, cloud interconnection, and edge computing. Overall, the auction is expected to act as a demand catalyst, enhancing asset utilization and reinforcing Supernet's position as a key neutral digital infrastructure provider.

To note, Supernet Limited (GEMSPNL) and Supernet Technologies Limited (STL) are in the process of being merged into a single unified entity. Under the court-approved scheme of arrangement, existing shareholders will receive approximately 1.68 shares of STL for every 1 share of GEMSPNL held, forming the basis of the value proposition for investors. The consolidation is expected to create a streamlined, debt-free structure, strengthening operational efficiency and positioning the merged STL to expand its digital and ICT footprint across all 14 telecom regions of Pakistan, thereby enhancing its capacity to scale enterprise connectivity and technology solutions nationwide.

VI. Risk Matrix & Investment Headwinds

- High inflation, PKR depreciation and increasing interest rates can raise cost of imported equipment, handset procurement, and foreign debt servicing expenses.
- Aggressive spectrum pricing and unfavorable payment terms straining balance sheets and limiting investment capacity.
- Delays in network rollout, fiber deployment, and equipment imports postponing 5G monetization.
- Slower-than-expected 5G adoption due to device affordability constraints and limited mass-market use cases.
- Intensifying price competition restricting ARPU growth and margin recovery.
- Cost overruns in infrastructure, energy, and logistics reducing projected returns.
- Regulatory uncertainty and changes in taxation, fees, or compliance requirements impacting profitability.

Note: *These scrips are not under our active coverage*

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To arrive at our fair value estimates, HMFS uses different valuation methodologies including but not limited to:

- Discounted cash flow (DCF, DDM)
- Relative Valuation (P/E, P/B, P/S etc.)
- Equity & Asset return based methodologies (EVA, Residual Income etc.)

HMFS RATING GUIDE	
BUY	More than 15% Upside
HOLD	Between 15% Upside & 15% Downside
SELL	More than 15% Downside

Note: All fair value estimates are for a twelve month time horizon unless specified otherwise in the report
Upside/Downside represents the difference between the stated "Fair Value" & the prevailing "Market Price"
Total Return is based on both the Capital Gains return & the Dividend Yield & is exclusive of all applicable taxes