

Fixed Income Group research

5G and the opportunity set for global credit markets

March 2022

- The advent of fourth-generation (4G) wireless mobile networks enabled a lot of value creation, but most was captured by adjacent technology and digital media companies rather than the wireless network operators themselves.
- As fifth-generation (5G) networks roll out in the U.S. this year, we are likely to see a continuation of those trends.
- As fixed income investors, we are cautious about technology and digital media companies. Although they may well continue to capture most of the value from 5G, their debt already tends to be high-quality and is trading at high valuations. We see more value in wireless telecoms and cell tower operators; their credit profiles should improve as carriers expand 5G coverage and monetize this service.

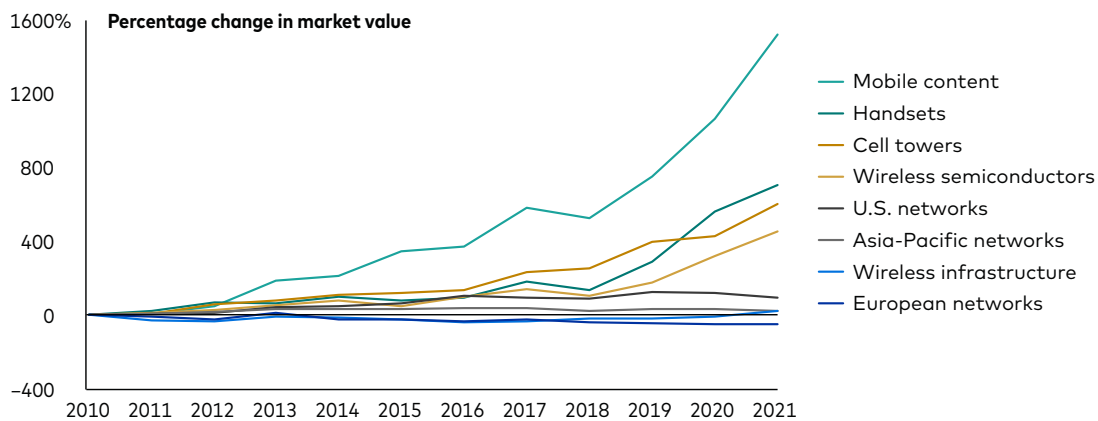
Lessons learned from 4G

It has been 11 years since Verizon rolled out the world's first large-scale 4G wireless network.

4G networks brought about a tremendous amount of change. Social media and video consumption migrated to mobile, and gig economy platforms emerged, all with tremendous social, political, and investment implications.

4G networks enabled value creation, but, as the chart illustrates, wireless carriers and infrastructure manufacturers captured comparatively little of that value. Other parts of the wireless value chain, including semiconductors, handsets, and especially mobile content, received the lion's share.

Stock market increases in the 4G era for parts of the wireless value chain



Note: Data are year-end figures from 2010 through 2021.

Sources: S&P Capital IQ and Vanguard.

Emerging themes in U.S. 5G

As 5G lights up across the U.S., we have been weighing whether this generation of wireless networks will be as significant as the former and what the investment implications could be.

Here are some of the themes we see materializing:

- 5G has kicked off a generational investment cycle in fiber, cell towers, network infrastructure, and data center capacity.
- Higher speeds will create new market opportunities for mobile content, such as cloud gaming, augmented reality, and embedded artificial intelligence.
- This will grow new markets for hardware (such as wearables), drive higher semiconductor content in devices, and spur large investments in semiconductor manufacturing capacity, especially in the west.
- 5G fixed wireless broadband will drive more competition and consumer choice in residential broadband markets.

As in the last cycle, wireless carriers likely won't capture much of the value from 5G networks.

Wireless markets were competitive during the 4G era, and we expect them to become increasingly so because of the blurring of distinctions between wireless and cable providers. Wireless will increasingly compete with cable for home broadband service, especially in underserved areas.

5G makes it more feasible for governments to pursue rural broadband goals through subsidies. These subsidies will boost growth opportunities for wireless but may come at the expense of greater regulatory oversight and lower long-term margins.

Cautious on about tech and digital media

Technology and digital content will continue to capture most of the value from 5G. However, we don't think this implies opportunities for credit investors, for a number of reasons. These high-quality sectors already trade at elevated valuations, leading to an asymmetric risk-return profile (that is, limited upside and comparatively greater downside risk).

Tech companies may use their fortress balance sheets to pursue new market opportunities through mergers and acquisitions (M&A), to the detriment of creditors. The recently announced Oracle-Cerner transaction is a good example.

5G is contributing to high demand for semiconductors today, but we are concerned that the massive supply response will overshoot demand and lead to an inventory-led correction.

Today's dominant technology companies won't necessarily be the winners in 5G applications. Asian markets have a head start and will be more competitive during this cycle.

Regulatory scrutiny is elevated. In the 5G era, tech incumbents will have less latitude to buy rising threats (such as Facebook/Instagram and Alphabet/YouTube).

If regulatory curbs, global competition, and excess capacity slow growth, firms may resort to using their balance sheets to drive earnings-per-share growth, which would entail moving down in credit quality.

Bullish on wireless networks and cell tower operators

We see better fixed income value in wireless telecoms such as Verizon and T-Mobile US and towers including Crown Castle and American Tower. Driven by M&A, the U.S. wireless sector dropped in credit quality during the 4G era. "In the U.S., wireless telecoms migrated from single-A to triple-B credit ratings," said Scott Miles, senior credit analyst. "That wasn't a great outcome for fixed income investors, but, as a result, they offer more value today." Additionally, North American wireless networks have invested heavily recently in capital equipment and wireless spectrum. Balance sheets are stretched, but we expect credit profiles to improve as carriers expand 5G coverage and monetize this service. Carriers should use the current inflationary environment to push up pricing while touting increased network capability.

Wireless earnings growth should shift from low single digits today to mid-single digits or better, accelerating the recovery of credit profiles.

Although the mobile market is saturated, we see major growth opportunities opening for fixed wireless. The drivers will be population growth, pricing, and fixed wireless expansion.

Regulatory oversight will increase as wireless networks displace landlines in some underserved areas, limiting margin growth but also suppressing volatility.

In Europe, expect a slow 5G rollout, greater competition, and limited revenue growth

The themes we see emerging with 5G in Europe are similar to those in the U.S., with some noteworthy differences and nuances:

The European telecom market is more fragmented, with many more operators than in the U.S., where three large, nationwide players dominate. This leads to an intensely competitive market environment, which in turn means revenue growth is likely to be anemic, with limited near-term catalysts for improvement.

The pandemic has highlighted the need for governments, companies, and consumers to have robust broadband connectivity. This is a political priority, and the European Commission has laid out ambitious targets for 5G rollout. These include ensuring uninterrupted 5G coverage in urban areas and along main transport routes by 2025. In March 2021, the commission extended the objective to include universal 5G coverage in all populated areas by 2030.

The rollout of fiber-to-the-home (FttH) has been very fragmented in Europe, and countries including the U.K. and Germany need to make significant investments to catch up. Investment spend is likely to focus on FttH in the near term before gradually shifting to 5G. After a period of significant acquisition activity, telecoms are facing a balancing act to keep leverage in check while investing in network expansion. Consequently, we expect Europe to roll out 5G more slowly than the U.S. and developed Asia.

"The credit profiles in the European telecom sector should hold fairly steady, with network investment remaining elevated in the short-to-medium term and revenue and earnings growth likely to be modest," said Andreas Nagstrup, a European credit analyst based in London. "There are, however, differences among telecom credits even in this somewhat challenging environment, which gives active managers scope to add value."

In the Asia-Pacific region, emerging trends look set to support both the equity and credit markets

Unlike the U.S. and Europe, where there is a degree of homogeneity, Asia Pacific is a highly diverse region, and the pace of 5G rollout varies markedly amid different market structures and regulatory environments. South Korea was first to roll out 5G in April 2019, followed closely by Australia, China, and Japan, whereas India aims to begin in 2022.

In the Asia-Pacific region, as in the U.S., the 4G rollout resulted in significant shareholder value creation that was captured primarily by the U.S.-domiciled FAANGs (Facebook, Apple, Amazon, Netflix, and Google) and their Asian equivalents, the BATs (Baidu, Alibaba, and Tencent). "Asia-Pacific carriers also experienced a decline in credit quality as balance sheets became stretched, with significant increases in leverage to fund 4G investments in a highly competitive environment, limiting revenue growth," said Alicia Low, head of credit research for the region, based in Australia. "The proverbial \$64,000 question is, will 5G be different for Asia-Pacific wireless network operators?"

While 4G and prior rollouts degenerated into a race to the bottom in terms of prices, 5G incumbents appear to have learned from past experiences, with more rational competition and carriers preferring to differentiate based on network quality and speed rather than exclusively on price.

Inflation accelerating back to a pre-COVID pace from currently sluggish levels in Asia should provide carriers with cover to lift pricing, but its double-edged sword could also lead to higher-than-expected 5G rollout costs.

We observe greater capital discipline, particularly in developed markets such as South Korea and Australia, in linking 5G investment to demand growth. Following in the footsteps of U.S. counterparts, Asia-Pacific carriers have or are in the process of recycling capital through divestment of infrastructure assets such as cell towers, with proceeds redeployed into 5G, capital management, and debt reduction—all supportive of credit fundamentals.

As in the European Union, the post-pandemic regulatory environment in the Asia-Pacific region is likely to be more benign, with telecoms seen as national champions and enablers for digitization to support economies recovering from COVID. The regulatory pendulum is swinging against FAANGS and BATs because of their market dominance.

"Although it's fraught with danger to declare 'this time is different,' said Low, "four emerging trends—demand-driven capital expenditures, pricing discipline, capital recycling, and more benign regulatory environments—are supportive for both equity and credit markets in Asia-Pacific telecoms not seen in prior rollouts."

Opportunities for active fixed income managers in global telecoms

"We expect credit profiles in this sector to be broadly stable to slightly improving," said Miles. "There are, however, differences among telecom credits, and we will deploy our global research capabilities to identify which companies in each region may have better prospects for improving their credit profiles and select securities that offer attractive risk-adjusted returns."

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* Includes funds advised by Wellington Management Company LLP.

Note: Data are as of December 31, 2021.

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