

Industrialised Construction: Scaling Housing Delivery in Germany

IN A NUTSHELL

- Germany's housing shortage increasingly reflects a delivery constraint, as rising construction costs, labour shortages and lengthy planning processes limit new supply. Industrialised construction can shorten construction periods, improve delivery certainty and reduce labour.
 - The key bottleneck is not manufacturing capacity but access to planning-ready land and repeatable project pipelines.
 - Public landowners, municipalities and established developers can provide the land access, planning visibility and demand required to scale industrialised housing delivery.
 - Policy support through KfW financing and housing programmes can improve project viability.
 - Modular construction is unlikely to lower market rents directly, but it can enhance project economics through faster delivery, lower financing carry and reduced execution risk.
 - Industrialised construction should be viewed less as a construction technology and more as a housing delivery platform, where planning-ready land and visible demand determine investment outcomes.
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Building Faster, Building Smarter: The Investment Case for Modular Housing in Germany

Modular housing is unlikely to solve Germany's housing shortage on its own. However, when combined with public-private land partnerships, leasehold structures and industrialised delivery models, it can become a scalable platform for accelerating residential supply. Germany's housing deficit is increasingly constrained not by a lack of demand, but by rising construction costs, labour shortages and lengthy planning procedures that limit the scalability of traditional development.

While industrialised construction improves delivery efficiency, access to scalable land pipelines remains the critical determinant of investment success. The opportunity is therefore not construction technology itself, but the combination of land, policy support and repeatable delivery models.

As public policy becomes increasingly supportive through subsidised financing, planning reforms and affordable housing initiatives, investors may be able to combine faster housing delivery with attractive risk-adjusted returns while helping address Germany's structural housing shortage.

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Germany's Housing Challenge

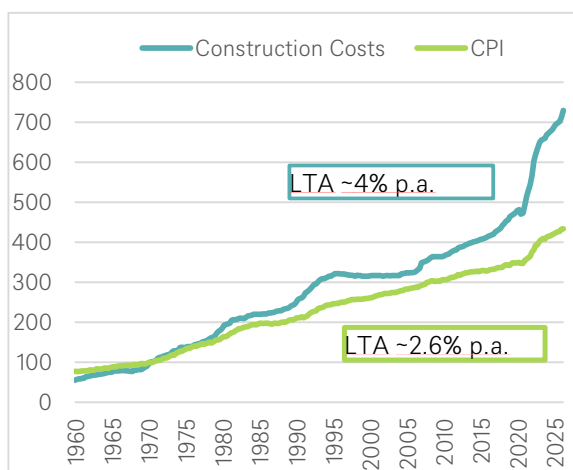
Supply shortages and rising costs limit new supply

Germany's housing markets face a structural challenge that extends far beyond supply shortages. Traditional construction is becoming increasingly difficult to scale, predict and afford. Over the past five decades, construction costs in Germany have risen significantly faster than consumer prices, averaging approximately 4% per annum compared with around 2.6% for consumer prices.

While material prices have historically been the most volatile component of construction costs – particularly during periods of energy price shocks – the recent cost cycle highlights a more fundamental issue: labour costs have become the dominant and most persistent source of inflation. Since 2023, labour costs have increased materially faster than material costs and continue to show a stronger long-term upward trajectory. Unlike material costs, which tend to normalize after supply-chain or energy-related disruptions, labour costs rise steadily and are difficult to reverse. This trend is likely to intensify as demographic ageing, skilled labour shortages and rising wage expectations further constrain the construction workforce.

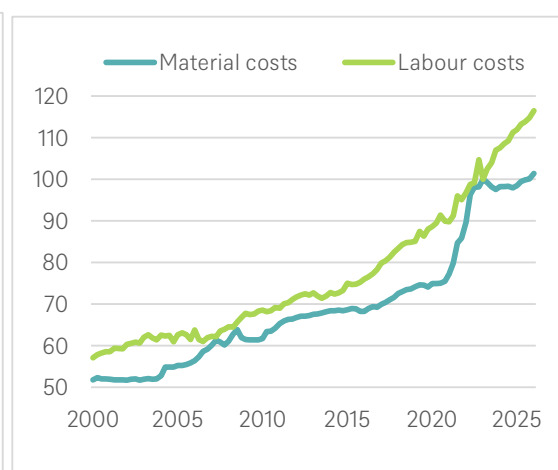
Inflation vs Construction Costs

Index 1970 = 100



Material vs labour costs

Index Q1 2023 = 100



Source: DWS, Macrobond, Destatis, July 2026

In June 2026, roughly one-third of European construction firms reported labour shortages, close to historical highs, indicating that labour availability has become a structural constraint rather than a cyclical challenge.

At the same time, conventional construction continues to suffer from a productivity problem. While labour productivity across the broader economy has improved steadily over recent decades, productivity in construction has stagnated or even declined. The industry remains heavily dependent on fragmented, site-based processes that have proven difficult to modernise and scale efficiently. As a result, rising labour scarcity is translating directly into higher construction costs, longer delivery times and increased project risk.

Modular and industrialised construction offers a potential response to these challenges. By shifting a substantial share of building activity from construction sites into factory environments, modular housing can reduce labour requirements by more than 40%, improve quality control and significantly shorten delivery timelines. More importantly, industrialised production allows the sector to benefit from the same technological forces that have transformed manufacturing, including automation, robotics and artificial intelligence. As these technologies mature, factory-based construction is expected to achieve further productivity gains, reducing unit costs and increasing delivery capacity.

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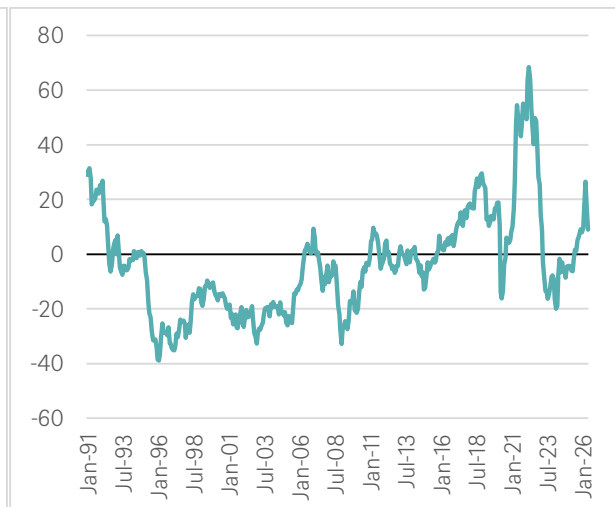
Shortage of labour force

Monthly question (% , s.a.)



Prices expectations over the next 3 months

Balance (s.a.)



Source: European Commission, July 2026

We expect industrialised construction to gain market share over the coming decade, supported by Germany’s housing undersupply, persistent labour constraints and the need for faster, more predictable delivery. However, adoption will depend on access to planning-ready land, repeatable project pipelines and sufficient factory utilisation. For investors, the opportunity lies less in exposure to a construction technology than in delivery platforms capable of combining these conditions at scale.

Why Industrial Construction

Faster, Greener and More Scalable Housing Delivery

Industrialised Construction Benefits

-  **50-70%**
Faster construction
-  **40%**
Reduction in labour
-  **Up to 83%**
Waste reduction
-  **5-15%**
Potential cost savings

Industrialised construction is gaining traction as a potential response to Germany’s housing shortage and the structural productivity constraints facing the construction sector. By shifting a significant share of production from construction sites to controlled factory environments, developers can accelerate delivery, improve quality consistency and reduce execution risk.

The most immediate benefit is speed. Depending on the construction system and project type, modular and off-site methods can reduce the on-site construction period by approximately 50–70%. By shifting activities from the construction site to the factory, industrialised construction can reduce labour demand by up to 40%, mitigating the impact of persistent skilled labour shortages.¹ Additional benefits may include more efficient material use, lower construction waste and reduced embodied carbon, although outcomes vary significantly by system, material and project design.

The investment case is therefore not primarily based on achieving lower costs in an individual project. Transport, crantage, factory overheads and the need for early design decisions can offset part of the potential savings. The stronger proposition

¹ McKinsey, 2025

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lies in repeatability: standardised product designs, aggregated procurement and higher factory utilisation can improve cost efficiency across a sufficiently large and visible project pipeline. At scale, this may generate cost savings of approximately 5–15%, while faster delivery can also bring forward rental income and reduce financing carry.

Industrialised construction is consequently most attractive for programmes with repeatable layouts and predictable demand, including multi-family housing, student and senior housing, hotels, schools, healthcare facilities and public-sector buildings. It is unlikely to become a universal substitute for conventional construction. However, it offers one of the more scalable approaches to improving sector productivity, delivery certainty and housing output.

Germany's official statistics provide only an approximate indication of current market penetration. Destatis measures Fertigteilbau, which includes a wider range of prefabricated and system-construction methods than volumetric modular construction alone. On this basis, 23,992 apartments were completed in new prefabricated residential buildings in 2025. Compared with 175,867 apartments completed across all new buildings, this represents approximately 13.6%.² The share of prefabricated homes was even higher in building permits than in completions, indicating continued growth potential for industrialised construction. In 2025, 13,473 of the 50,755 approved single- and two-family homes were prefabricated, representing a record market share of 26.5%. This marks a continued increase from 26.1% in the previous year and underscores the growing adoption of prefabricated construction methods, with market penetration having risen steadily since surpassing the 20% threshold in 2019.

A broader cost-based measure indicates a higher level of penetration across the overall construction market. The estimated construction cost of prefabricated new buildings amounted to EUR 16.9 billion in 2025, equivalent to approximately 23.5% of the EUR 71.8 billion recorded for all new buildings. This higher share largely reflects the established use of prefabricated and system-based construction in non-residential sectors, particularly industrial, logistics and other standardised building formats. It should therefore not be interpreted as the market share of modular residential construction.

The GdW Framework Agreement for Serial and Modular Construction 2.0 provides the clearest institutional framework for the German multi-family housing market. Running from October 2023 to October 2028, it comprises 25 concepts submitted by 20 providers across timber, steel, concrete and hybrid construction systems. By providing pre-developed concepts and a structured procurement route, the framework could help reduce repeated planning and tendering requirements and support the transition from individual modular projects towards larger, repeatable housing programmes.

Overall, the German market remains fragmented and modular housing still represents a relatively small part of total residential construction. Nevertheless, increasing institutional acceptance, standardised procurement and the availability of multiple construction systems provide a stronger basis for future growth. The decisive factor will be less the construction technology itself than the ability to secure repeatable project pipelines and maintain sufficient factory utilisation.

Industrialised Construction as a Scalable Solution

Construction methods differ by the degree of off-site production, system integration and repeatability

Industrialised construction is an umbrella term for factory-led building methods that transfer activities from exposed construction sites into controlled production environments. The objective is to make delivery faster, more predictable and less dependent on scarce site labour.

Terminology is often used inconsistently. Prefabrication, panelised construction, modular building, system construction and, in the UK, Modern Methods of Construction, or MMC, are frequently used interchangeably. In practice, these methods sit along a spectrum. The higher the degree of off-site production, standardisation and process integration, the more industrialised the delivery model becomes.

² Source: Destatis, August 2026. Important distinction: Destatis "Fertigteilbau" includes buildings where the main structural elements are predominantly prefabricated. It is therefore wider than 3D modular construction and also captures large non-residential precast and system buildings.

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The industrialisation spectrum

Prefabrication involves the off-site manufacture of selected building components, such as structural elements, façades or building-services assemblies. Most construction activity remains on site, with an indicative factory share of approximately 5% to 15%.

Industrialised Construction: Key Delivery Methods and Use Cases

CATEGORY	WHAT IS FACTORY-MADE?	TYPICAL MATERI-ALS	BEST-FIT USES	INDUSTRIAL INTENSITY
Component-based system construction	Standardised structural and building components, including columns, slabs, walls, façades and service assemblies	Concrete, steel and timber	Logistics, offices, parking, schools and selected residential uses	MEDIUM
2D panelised construction	Load-bearing wall, floor and roof panels; services and finishes may be partly integrated	Timber frame, CLT and precast concrete	Housing, schools, extensions and low- to mid-rise buildings	MEDIUM TO HIGH
3D volumetric modular construction	Complete room-sized modules, often including MEP, bathrooms and interior finishes	Steel, timber and concrete	Housing, hotels, student accommodation, assisted living, healthcare and schools	HIGH
Hybrid modular construction	Volumetric modules combined with panelised elements or conventional cores, podiums and basements	Timber-steel, timber-concrete and steel-concrete	Mid-rise housing, mixed-use buildings and complex urban sites	HIGH
Serial refurbishment	Prefabricated façade, roof and building-services elements applied to existing buildings	Timber, insulation, façade systems and integrated services	Energy-efficient refurbishment of occupied residential estates	MEDIUM TO HIGH

LOWER FACTORY SHARE

GREATER OFF-SITE CONTENT

HIGHER SYSTEM INTEGRATION

REPEATABLE PRODUCTION PLATFORM

Source: DWS. For illustrative purposes only. | Note: Categories are not mutually exclusive; individual projects may combine several systems.

Panelised construction, or 2D systems, moves a larger part of the building shell into the factory. Wall, floor and roof panels are manufactured off site and subsequently transported and assembled on site. Depending on the level of integration, approximately 20% to 50% of construction activity may be transferred to a factory.

Volumetric modular construction, or 3D systems, transfers complete three-dimensional units into factory production. These units may comprise individual rooms, apartments or service-intensive modules and can already include façades, mechanical and electrical systems, bathrooms and interior finishes. Factory shares can reach approximately 70% to 80%.

Fully industrialised systems represent the most advanced end of the spectrum. Buildings are treated as configurable, repeatable products rather than one-off projects. Design for Manufacture and Assembly, or DfMA, integrates design, procurement, manufacturing, logistics and on-site assembly within a standardised product platform. In highly standardised systems, the factory share can approach 90%.

The defining shift is therefore not simply from construction site to factory. It is the transition from bespoke project delivery to a scalable production model. Digital design, automation and robotics can support this transition, but technology alone does not create an industrialised platform. The decisive factors are design standardisation, repeatability, production throughput and supply-chain integration.

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From an investment perspective, this distinction is critical. As industrialisation increases, value creation shifts away from site labour and individual project management towards:

- reuse of standardised designs;
- efficient utilisation of manufacturing capacity;
- procurement and supply-chain control;
- consistent product quality;
- shorter and more predictable delivery programmes; and
- the ability to deploy the same platform across multiple sites.

Industrialised construction is therefore more than a construction technique. It can provide a platform for delivering repeatable building products at scale.

Lessons from Previous Modular Failures

Industrialised construction has been associated with several high-profile corporate failures, including Kattera in the United States and a number of modular housing providers in the UK. Germany has also seen financial distress among modular construction businesses. However, these cases do not necessarily indicate a failure of the underlying construction technology. They more often highlight the vulnerability of capital-intensive or project-dependent business models to weak demand, restricted financing and an insufficiently predictable development pipeline.

Recent insolvencies in the German modular construction sector highlight that commercial and financing risks can be as significant as manufacturing economics. In one case, financial difficulties were attributed to weak transaction activity, limited project financing availability, rising construction costs, inflation, and broader market uncertainty. Another established timber modular provider also entered insolvency despite a substantial delivery track record. While the underlying causes were not publicly disclosed in detail, these cases illustrate the continued corporate and execution risks facing modular construction platforms in a challenging market environment.

Modular construction companies are exposed not only to production risk, but also to project-financing availability, development-market liquidity, order timing and counterparty risk. For manufacturers, the economics remain particularly sensitive to factory utilisation because fixed production capacity requires a repeatable flow of projects. For modular developers and integrated platforms, the key vulnerability may instead be the ability to finance, sell and continuously originate projects.

The central lesson is not that modular construction does not work. Rather, the delivery model requires close alignment between production capacity, secured demand and access to capital. Scale should follow a visible project pipeline, rather than preceding it.

Land Access – The Real Bottleneck

While much of the debate around Germany's housing shortage focuses on construction costs, planning regulation and labour availability, the central bottleneck is access to planning-ready land within a sufficiently visible project pipeline. Modular housing does not create additional land, but it can significantly expand the range of sites that become economically and operationally viable for residential development. Its primary advantage lies in accelerating project delivery, reducing on-site disruption and improving development feasibility on complex or constrained sites. As a result, modular construction can unlock land pools that are often overlooked by traditional development approaches.

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Public Land: A Large Untapped Opportunity

Public sector land represents one of the largest potential sources of housing development in Germany. Municipal sites, former infrastructure land, surplus school and hospital grounds, as well as transport-related land holdings are often underutilised despite being located in established urban areas with existing infrastructure. Modular construction offers municipalities a tool to rapidly convert these sites into housing while minimising disruption to surrounding communities. The shorter construction timeline can also help local authorities accelerate housing delivery and achieve political housing targets more efficiently.

Germany already offers several examples of how public land can be mobilised for faster housing delivery. The federal real estate agency BImA (Bundesanstalt für Immobilienaufgaben) has increasingly released surplus government land for residential use and has actively promoted serial and modular construction. Recent projects in Munich's Perlacher Forst demonstrate how publicly controlled sites can be converted into housing relatively quickly once planning status has been secured. Similar opportunities exist on former military sites, transport infrastructure land and underutilised public-sector properties across major German cities. The key lesson is that access to land with a supportive public-sector partner can be more valuable than construction technology itself. Developers that secure sites through municipal cooperation or public-private partnerships gain access to a development pipeline that would otherwise be difficult to replicate.

Activating Underutilised Private Land

A second opportunity exists within underutilised private land holdings. Large retail car parks, low-density commercial properties and corporate campuses frequently contain significant surplus land that is not fully monetised.

For property owners, modular housing can create an additional income stream without requiring lengthy redevelopment programmes. The reduced construction period and lower site disturbance make residential densification more feasible while allowing existing business operations to continue largely uninterrupted.

Brownfield and Infill Sites: Where Modular Has Its Strongest Advantage

Modular housing may deliver its greatest competitive advantage on brownfield and infill sites. These locations are often constrained by limited access, restricted construction windows, complex urban environments or neighbouring uses sensitive to disturbance.

By shifting a significant share of the construction process into a factory environment, modular delivery can reduce on-site activity and shorten the construction period, although transport and installation requirements remain project specific. This enables developers to unlock sites that may be uneconomic or operationally challenging for conventional construction methods. In dense urban markets, where every additional housing unit matters, modular construction can therefore help transform fragmented and difficult-to-develop sites into viable residential projects.

Land Access Requires Planning Certainty

Land availability alone is insufficient. The greater challenge in Germany is obtaining planning certainty. On unzoned land, the process of achieving planning consent, preparing development plans and securing permits can often take several years, frequently exceeding the actual construction period itself. Even if modular construction reduces build time by 50%, developers gain little benefit when projects spend five years in the planning system.

As a result, the most attractive opportunities are typically sites that are already zoned for residential use, located within established development areas or supported by municipalities seeking to accelerate housing delivery. In these situations, modular construction can fully realise its speed advantage because planning and construction timelines can work in parallel. Conversely, speculative land banking on unzoned land is often difficult to justify for modular developers, as planning risk rather than construction risk remains the primary constraint on delivery. Municipal partnerships, previously zoned land and

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publicly sponsored housing programmes are therefore likely to be the most scalable route for industrialised housing in Germany.

Public Policy Can Improve Project Viability

Government support is becoming an increasingly important enabler of industrialised housing delivery in Germany, although the policy case extends well beyond direct subsidies. The emerging framework combines concessional financing, social-housing funding, faster planning procedures and institutional support for scaling serial construction. This is particularly relevant for modular housing, where economic benefits depend not only on factory-based production, but also on repeatable specifications, predictable project pipelines and shorter approval periods.

The federal government’s X8-BauDialog, launched in November 2025, has identified serial construction alongside faster approvals and simplified building standards as a key lever for lowering construction costs. While binding outcomes have yet to emerge, the initiative signals growing political support for industrialised housing delivery.

Germany: policy support stack for industrial housing



Source: DWS, bmwsb, KfW, bundesregierung, 2026

Public policy is increasingly aligned with the requirements of modular and industrialised housing delivery. Existing federal funding programmes already provide a meaningful financing foundation across both new-build and refurbishment activities. KfW’s Climate-Friendly New Construction programme offers promotional loans of up to €150,000 per dwelling, while the Climate-Friendly New Construction in the Low-Price Segment programme provides up to €100,000 per dwelling for climate-friendly and space-efficient housing. For existing buildings, BEG renovation financing can reach €150,000 per dwelling. Following the July 2026 BEG reform, support is being focused more strongly on inefficient buildings, while incentives for serial refurbishment have been expanded and more closely linked to the Worst-Performing-Building framework.

The policy environment is also becoming more explicitly supportive of **serial and modular construction**. The 2026/27 administrative agreements for social housing are now in force and provide €9 billion of federal funding, comprising €4 billion in 2026 and €5 billion in 2027. Funding for the “Junges Wohnen” programme will increase from €500 million in 2026 to €1 billion in 2027. Importantly, the federal government and the Länder have **agreed to promote serial, modular and system-**

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based construction more strongly within social housing, reflecting its potential to reduce delivery times and costs. Total federal support for social housing is scheduled to reach €23.5 billion by 2029, with additional funding provided by the Länder.

Planning reform adds a second policy lever. The Housing Construction Turbo, in force since October 2025, allows municipalities to approve certain residential developments, extensions, densification projects and conversions without first preparing or amending a local development plan. Its application remains subject to municipal consent, but it could materially strengthen the time advantage of standardised construction where local authorities actively use the new provisions.

More far-reaching measures were announced in the July 2026 federal reform package. The government intends to establish a **federal housing company for affordable housing**, with an explicit mandate to support **social housing and the industrial scale-up of serial construction in areas facing persistent housing shortages**. The package also envisages abolishing additional national capital buffers for real-estate lending from January 2027 and broadening the use of deemed approvals in administrative procedures. These measures are not yet fully implemented, but they point towards a more coordinated policy approach combining development capacity, bank financing and administrative acceleration.

The policy backdrop for modular housing has improved materially, but the investment case should not be framed as a simple subsidy play. The strongest projects will combine standardised delivery with a visible multi-project pipeline, KfW or state-bank financing, social-housing support and municipal planning or land contributions. The principal opportunity lies in converting modular construction's shorter delivery period into lower financing costs, earlier rental income and repeatable procurement. However, several of the most supportive measures, including the federal housing company and financing reforms announced in July 2026, remain subject to implementation.

Investment Conclusion

The key challenge is no longer whether modular housing can be delivered, but whether projects can be underwritten economically in today's market environment. Rising construction costs, elevated financing expenses and rental affordability constraints have compressed development margins across Germany, leaving many residential projects only marginally above break-even economics. As a result, a significant share of planned developments is currently being delayed, redesigned or not proceeding at all.

Against this backdrop, industrialised construction offers a potential route to restore viability. Three market-entry strategies appear particularly relevant for institutional investors. First, direct land sourcing allows investors to secure zoning-ready sites and capture a larger share of development economics. Second, developer joint ventures provide access to established land pipelines and local planning expertise while enabling the deployment of standardised modular products across multiple schemes. Third, partnerships with municipalities can unlock affordable housing opportunities through land leases, concessions and public-private joint ventures, creating long-term development pipelines aligned with public housing objectives. These approaches shift modular housing from a one-off project to a scalable delivery platform.

The economic case improves further once scale is achieved. Illustrative underwriting suggests that the principal return benefit arises less from dramatically lower construction costs and more from accelerated delivery, faster capital recycling and reduced financing carry. Development economics suggest total costs of approximately €5,000 per leasable sqm versus an exit value of €6,250 per sqm, implying a development margin of around 25% on cost. However, given today's challenging cost and rental environment, many conventional construction projects offer substantially thinner margins.

Modular delivery can improve outcomes by shortening construction periods, bringing forward rental income and increasing project IRRs through faster deployment of capital. In some cases, this timing advantage may be sufficient to make schemes investable that would otherwise not meet required return thresholds under conventional construction methods. As modular construction is deployed repeatedly across multiple sites, standardised design, procurement and manufacturing processes

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can further enhance delivery certainty and improve returns. The investment case therefore rests not only on construction efficiency, but on the combination of land access, planning visibility, industrialised delivery and repeatable product at scale. While conventional construction may remain competitive on pure building costs, its longer delivery period delays cash flows and can materially reduce risk-adjusted returns.

Illustrative Development Economics Berlin

EUR/NLA	Berlin*
Land (with zoning)	€1,500
Hard costs	€3,200
Soft (incl. financing)	€300
Total Costs	€5,000
Exit Value	€6,250
Development Margin	25%

Industrialised construction is unlikely to translate mechanically into lower market rents, which are primarily determined by local supply-demand conditions and regulatory constraints. Its more immediate contribution is to improve project viability by shortening financing periods, reducing execution risk and potentially lowering construction costs at scale. In subsidised or municipally supported schemes, part of these benefits may be used to support affordable rents, but this typically depends on land pricing, funding conditions and occupancy restrictions rather than the construction method alone.

Source: DWS, August 2026
*Illustrative development economics for a hypothetical Berlin residential project.
Land values, construction costs, financing assumptions, rental levels and exit values may vary materially by location, specification, market conditions and project structure.

Industrialised construction is ultimately a capital-efficiency story rather than a construction-cost story. The key opportunity lies in combining land access, planning certainty and repeatable delivery models to build scalable housing platforms that can accelerate cash flow generation and enhance risk-adjusted returns.

Investment opportunities are likely to be strongest in markets with structural housing undersupply, supportive public-sector engagement and sufficient project volumes to support industrialised delivery models. For investors, the objective is not simply to invest in a building method, but to establish a scalable platform capable of delivering affordable and market-rate housing more efficiently across multiple locations. Industrialised construction should be viewed less as a construction technology and more as a scalable housing delivery platform. Investors that combine land access, public-sector partnerships and repeatable delivery models may be best positioned to benefit from Germany's structural housing undersupply.

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Property Market Research

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