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Commercial to Residential Conversions: A Review of Current Research

Nathaniel Decker, Lead Economist
Economics and Multifamily Research
Fannie Mae Economic & Strategic Research

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Introduction

Historically high home prices and rents, coupled with historically high vacancy rates in office buildings and other commercial property types, has ignited interest in whether the large-scale conversion of commercial properties to residential could help rebalance both markets. Numerous adaptive reuse projects converting commercial buildings to residential have taken place, and the details of those projects can suggest that conversion is a relatively efficient and quick way to repurpose large quantities of vacant commercial space into occupied residential units. Some have involved extensive structural work to the building, some were acquired at little or no discount from their pre-pandemic value, some were fully occupied, and some were developed into affordable housing.[1] Per-unit construction costs were low in some projects. For example, in California thousands of hotel rooms have been converted into apartments at about 35% of the cost of new construction.[2] Policymakers from the federal to the local level are examining ways that the public sector can facilitate conversions, and in some cases have enacted tax breaks or land use regulatory changes. However, the enthusiasm for conversions often obscures the actual pace of conversion activity, the potential for conversions to contribute to the housing stock, and the drivers that affect this potential.

This article is meant to provide clarity on the drivers and impediments to conversions, the recent pace of conversions and likely future volumes, and what lessons can be learned from recent projects and research on conversions. It is based on a review of existing research, supplemented by market data. “Conversions” are defined here as multifamily residential development on a site that, prior to conversion, had a commercial use other than multifamily. This can take the form of adaptive reuse, which has generated the most public attention, but also includes the re-development of under-built commercial land, such as parking lots. It does not include greenfield development, even if the raw land is commercially zoned.

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Drivers & Impediments to Commercial-to-Residential Development

The most important factors in the feasibility of conversions are the local market conditions and the public policy environment, particularly local land use controls. Both factors are dynamic and can vary by small geographies, but the current nationwide state of the market and policy are important as well.

Real Estate Market Conditions

Conversions can occur when the project-level economics of multifamily development out-perform the economics of commercial use, and the current owner of the property is willing to sell at a price feasible for a multifamily deal. This requires adequate multifamily demand but can be facilitated by weak commercial demand, which can make owners more willing to sell and lower the sales price. Nationwide, multifamily rents are at historically high levels and commercial real estate performance metrics are historically weak, suggesting that conversion activity would increase. However, development is based not only on current market conditions, but on market expectations. This future landscape appears less conducive to large-scale conversion activity.

Commercial real estate, particularly office, retail, and hospitality, faced severe challenges during the pandemic, and office and retail also faced long-term issues due to the rise of e-commerce and the increasing rates at which office workers worked from home. All three sectors have seen conversion to residential real estate in the past, though their relative importance for potential future conversions is unclear. In California, most commercially zoned land is retail real estate, with hospitality included in this category.[3]

However, a plurality of adaptive reuse projects of commercial to residential have been office conversions, followed by hotels.[4] Retail sees conversion as well, but this typically takes the form of demolition and redevelopment instead of adaptive reuse.[5]

Current Strength and Expectations of Multifamily Demand

While multifamily rents are high, the outlook for new multifamily development is less rosy due to reduced rent growth and very large pipelines of new projects. New construction of multifamily is bolstered by the expectation of rising rents, but rent growth has stalled nationwide, and future trends are unclear. Figure 1 shows how rent growth spiked in 2021, remained strong in 2022, but cooled so much in 2023 that some markets saw rent declines.[6] The slowdown is driven in part by the large number of new multifamily units coming online. Figure 2 shows the pace of multifamily completions from 1990 to 2023, highlighting the very large number of multifamily units coming on line every year from 2015 to the present. While multifamily starts slowed in 2023, the multifamily pipeline remains historically large.[7]

Annual rent changes 2019-2024

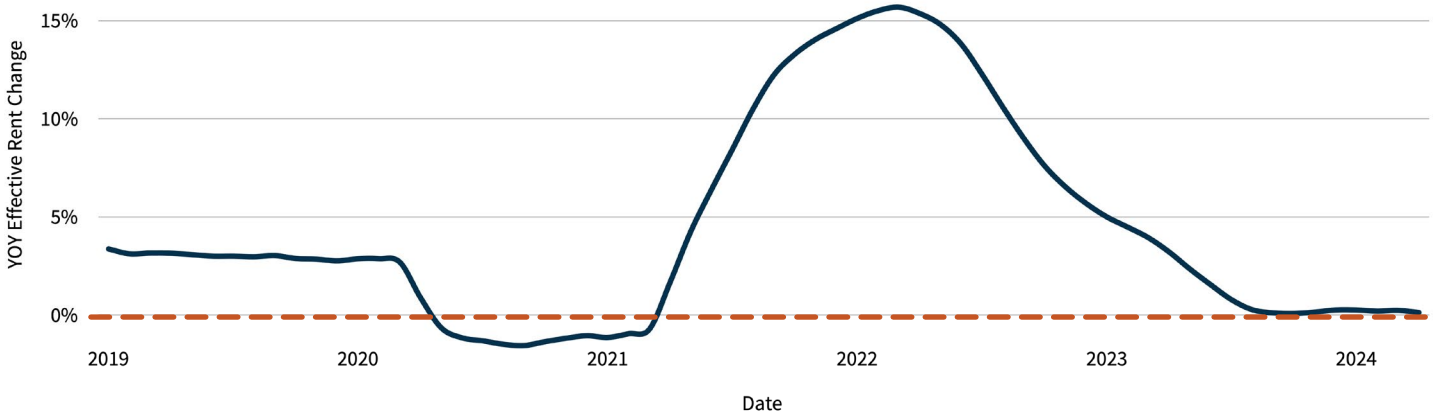

Figure 1: After Very Sharp Increases in 2021 and 2022, Rents Stagnated in mid-2023 and Remain Flat *Data from RealPage*

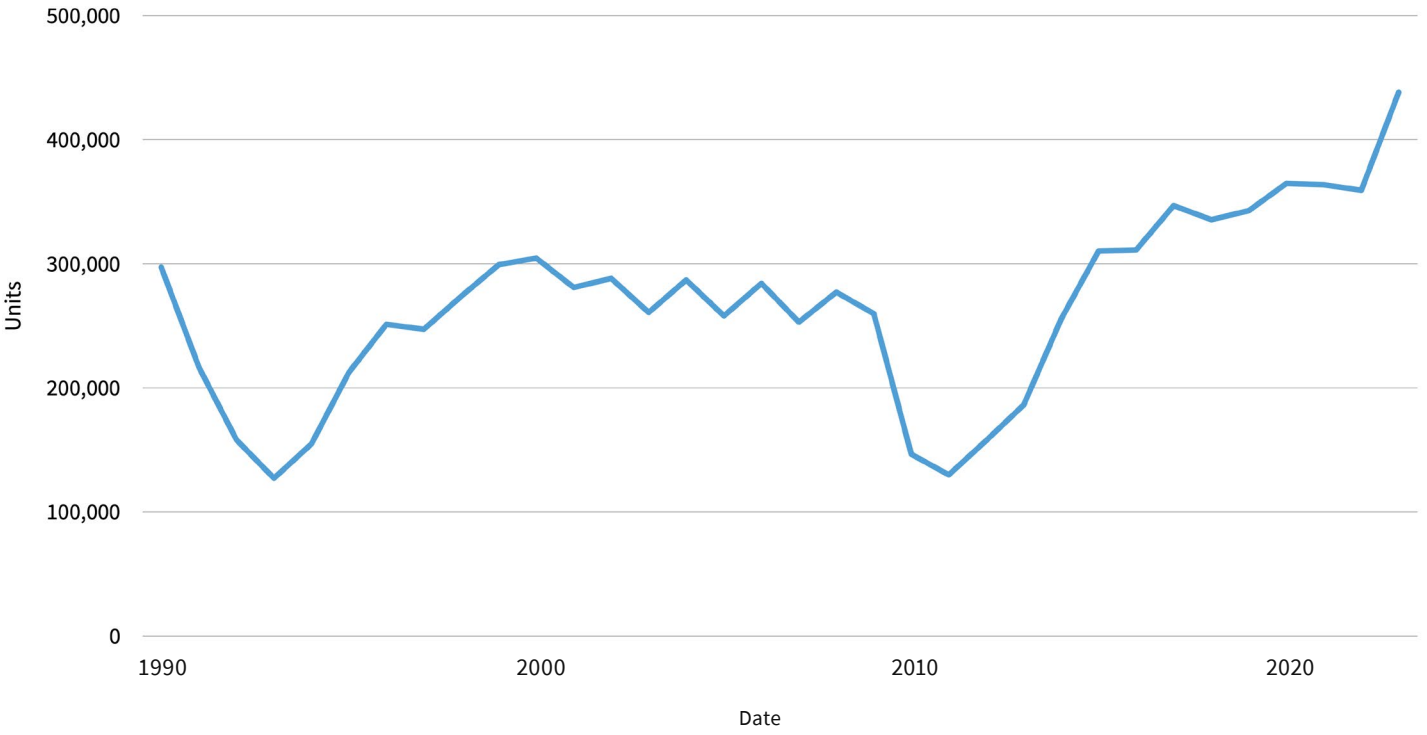

Figure 2: Multifamily Completions 1990-2023 *Data from US Census*

Furthermore, the multifamily market faces challenges in coming years as a large cohort of properties will need to roll-over their historically low-rate mortgages in a much higher-rate environment. $980.7 billion in multifamily debt is scheduled to come due between 2023 and 2027.[8] While rent growth since origination has improved revenues, operational expenses have also increased dramatically, rising 9.3% annually by mid-2023, lowering properties' net operating income.[7] This could result in multifamily defaults, putting stress on multifamily lending for the acquisitions that most conversions require.

There is substantial geographic variation in current and anticipated multifamily demand. Some metros are showing signs of over-building. Miami, Austin, Charlotte, and Nashville, for example, all had multifamily construction levels that exceeded 10% of their total multifamily stock in 2023. While these metros have seen strong recent population and job growth, this level of production far exceeds the 2-4% construction levels that are typically considered balanced. Even metros with strong anticipated job growth, like Houston, Austin, and Dallas will likely be over-supplied in the next few years. Other metro areas, such as Las Vegas, Los Angeles, Chicago, and Orlando, will likely have tight multifamily markets by 2025, potentially facilitating commercial-to-residential conversions.[9]

Current Strength and Expectations of Commercial Demand: Office

The pandemic caused office occupancy rates to plummet and CoStar data show that, in most markets, rates are still well below pre-pandemic levels. Nearly 20% of US office space was unleased at the end of 2023.[10] Office occupancy rates have slowly increased from their pandemic nadir in 2020 but remain at about half of their pre-pandemic levels in the largest metro markets.[11] While the long-term impact of the pandemic and the rise of work-from-home policies is unclear, work-from-home has proven to be durable so far. About 20% of workdays are estimated to be performed from home in the post-pandemic US economy, relative to only about 5% before the pandemic.[12] New York office properties have lost 17% of their assessed value and some estimates expect them to eventually lose 39% of their pre-pandemic value.[2, 13]

While no part of the office market has been unaffected by the pandemic and work-from-home, the impact is very different by geography and market segment. Overall, there has been a "flight-to-quality," with lower-end class B and C properties seeing greater stress in their performance relative to new construction and class A properties.[14] In New York City some very high-end office buildings even saw increases in new-lease rents during the pandemic.[13] There has also been substantial geographic variation. Office vacancy rates in the San Francisco Bay area, Los Angeles, New York City, Chicago, and other major markets have risen by five or more percentage points and now are near or exceed 15%. However, CoStar data shows that some office markets in Florida, such as Fort Myers, Naples, and Port St. Lucie saw slight declines in office vacancy rates from Q4 of 2019 to the present. A few other metros, such as New Orleans, saw essentially flat office vacancy rates. Many areas with weak office markets, such as upstate New York metros, have also seen essentially flat vacancy rates.

While commercial real estate uses overall have faced serious challenges since the pandemic, the long-term weakness of markets, particularly future trajectories of specific segments of commercial real estate markets, is unclear. Observed occupancy rates are difficult to interpret because in the office sector, like residential sector, rent trajectories are a function of the gap between the observed vacancy rate and the equilibrium vacancy rate, which varies over time and geography.[15] Shifts in management practices could result in higher equilibrium vacancy rates. For example, offices could reduce the continuously available space to a lessee, but also provide flex space that could be available to multiple lessees, potentially resulting in a higher vacancy rate (by some measures), while not necessarily reducing profitability.[14]* Historically, when office markets have been very stressed, there have been major shifts in office space programming, such as in the early 1990s when the amount of office space rented per person declined substantially as firms shifted away from large individual offices to smaller cubicles and open plans.[10]

* Office vacancy rates are measured in different ways. Kastle's data, for example, are based on card-swipes, measuring how many people are entering a building on a given day. Other measures look at the leased space relative to the total leasable space in a building.

Although the intensity of office use may decline, hiring among some industries that use office space remained high in late 2023.[16] In some markets, there appears to be anticipation of increased office demand. Office construction rates have generally fallen since 2020 and by 2027 only 1% of office space will be newly built, a 25-year low.[17] However, CoStar data show that cities such as Austin, Boston, Seattle, Miami, San Diego, and Nashville were still bringing new offices online at a pace of above 3.5% the last quarter of 2023.

Current Strength and Expectations of Commercial Demand: Retail

E-commerce has grown enormously and was spurred further by the pandemic, though its impact on commercial real estate demand is debated. E-commerce has been shown to act as both a substitute for physical retail and a complement to it, and that in some instances it is more of the former (for example reducing demand for regional mall space), and in other instances it is more of the latter (for example increasing retail sales in city centers).[18] It is possible that the acceleration of e-commerce due to the pandemic will be persistent, which could lead to substantial changes in the retail real estate landscape. These changes will likely lead retailers to re-direct their real estate investments to focus on uses that strengthen the ways in which physical retail complements e-commerce. It may also change the relationships between retail tenants and landlords, including changes in lease terms and rent structures.[19]

Many malls have endured sharp declines in value both before and during the pandemic and show the potential and challenges of conversion. Values for some malls have fallen by 50 to 70% of their pre-pandemic value.[20] There are about 150 malls across the US that have been partially or fully converted to residential or are in the process of adding residential units.[21] Like other commercial real estate, many malls will need to roll over their debt in the next few years, which could lead to more distressed sales, given that about 20% of all CMBS-financed malls are underwater, i.e. their outstanding mortgages balances are greater than the value of the property.[20] However, mall conversions can be challenging because many have complex ownership structures.†

Current Strength and Expectations of Commercial Demand: Hospitality

Hotels and motels might be among the simplest commercial-to-residential conversions, given that in many ways they are designed like multifamily properties. While more units were generated from office adaptive reuse conversions for every year of the past decade, hospitality properties were typically the second largest generator. Since 2020 the annual generation from offices has declined, while it has risen for hotels.[4] The potential of adaptive reuse from hotels, however, is limited by the relatively small size of hotel rooms, particularly after the necessary improvements to convert them (such as the addition of a kitchenette). This limits the rents they can generate and makes them better suited to housing that is not market rate. While there has been a rise in conversions, total annual production is still only between 1,000 and 3,000 units.[4] This may be counting some of the thousands of units that have been generated by a single program, California's project HomeKey, which led to the conversion of thousands of hospitality rooms into supportive housing units for people experiencing homelessness.[22] Hospitality market-watchers do not see a clear path toward the large-scale conversion of hospitality properties.[23]

The current state and outlook for hospitality real estate does not look as unfavorable as it does for office and retail. CoStar data show that revenue per available room (RevPAR) saw growth in the years after 2020 and continued to show growth in 2023, though demand from travelling businesspeople remained below pre-pandemic levels. RevPAR growth after the pandemic was strong in most markets over this period, with declines limited to the San Francisco Bay area. Overall, the hospitality industry is expected to outperform the US economy in 2024.[24]

† For example, the land and building are often owned by the mall anchor, while the parking surrounding the mall is held by an investor, and other anchor tenants can have control over land use decisions.[21]

Public Policies and Programs

The state and local policy environment, and to a lesser degree federal programs, have a powerful impact on the feasibility of conversions. If residential development is prohibited on the site of a commercial property, the property will not be converted to residential use even if there is a willing seller and economics strongly favor conversion. Land use controls have the most direct impact on conversions, but, because buildings are large greenhouse gas ("GHG") emitters, policies meant to address global climate change also affect conversion potential. Many state and local governments have also enacted laws meant to address housing affordability by facilitating housing production, including through conversions.

The vast amount of commercially zoned land in the US, on much of which residential development is illegal, shows that there is at least theoretical potential for policy changes to substantially contribute to housing supply. While other states likely differ in the prevalence of commercial land and the specific restrictions on it, California is an example of the magnitude of commercial land uses. In California, many urban counties have over 200 square feet of commercially zoned land per capita and some, like Riverside County, have over 1,000. About 40% of commercial zones in California's largest cities explicitly prohibited residential development until recently.[3‡]

Many cities are considering legislation to change land use regulations to facilitate conversions, some of which have been shown to be effective. The mayor of New York, for example, plans to generate 25,000 units from hotel conversions, and there are past examples of policy-induced bursts of conversion activity.[2] In 1999, Los Angeles passed its Adaptive Reuse Ordinance, which led to the generation of between 12,000 to 14,000 units from conversions in downtown LA over the following 20 years.[26,27] This accounted for one-third of all housing generated in downtown Los Angeles.[28] The ordinance reduced the regulatory barriers for adaptive reuse conversions to residential, including by allowing projects to not include any additional parking, provided a 1-floor density bonus, and clarified the building code requirements for reuse projects.[29] Los Angeles also led the nation in adaptive reuse conversions in 2022, with 1,292 units generated, 692 of which were from office buildings.[4] Los Angeles aims to accelerate further conversions with a recently passed update to the ordinance, expanding it to a wider range of commercial properties and further lowering regulatory hurdles.[30]

More liberal land use regulations and tax abatements for conversion are associated with increased levels of conversion. In California, jurisdictions that explicitly allowed residential development in commercial zones saw about twice as many conversions from 2014 to 2019.[5] Cities have used a range of methods to spur conversions, including rezonings, density bonuses, direct subsidy, and tax abatements.[31,32] The weak office market in New York City in the late 1990s led to the passage of a tax abatement, 421-g, to promote commercial-to-residential conversions, and major downtown rezonings.[2] This spurred conversions, particularly after 9/11, and led to 19.7 million square feet of conversions and nearly 13,000 new units by 2006.[33] From 1990 to 2023, the population in New York City's financial district nearly quintupled, gaining 52,000 residents, through adaptive reuse and redevelopment. As the neighborhood gained residents it also gained the real estate uses that come with greater activity, such as grocery stores, schools, restaurants, and bars.[34] These neighborhood-scale bursts of conversion activity aren't limited to very large cities such as New York and Los Angeles. Oakland, for example, passed a major change to its land-use controls in 2014 that led to the redevelopment of a 95-acre commercial district, including the development of 1,800 new units of housing,[35] and there are numerous other examples of large-scale conversions spurred by local-level changes to land use controls.[28]

‡ This prohibition has since been preempted by state legislation.[25]

While these changes show the efficacy of public policy in facilitating conversions, there are many reasons why local officials might be cautious about making sweeping changes. Scholars examining land use regulations and commercial-to-residential conversions often conclude that land use reforms that facilitate use conversions of any kind are preferable to reforms focused specifically on commercial-to-residential.[36,2] Some cities disproportionately rely on their commercial property tax base, and the density of offices, on a person per square foot basis, is much higher than the density of residential development, thus providing more positive spillovers, including local spending.[37] Even in San Francisco, where office vacancies are high and the housing shortage is especially acute, local nonprofits stopped short of recommending incentives for conversions (which they estimate could cost over $200,000 per market-rate unit), only proposing that the city "explore tools to provide incentives for office conversions."[31]

Policy changes that facilitate conversion will likely mostly happen at the local level, which reduces the likelihood of a large-scale, policy-driven surge in conversions. However, state-wide changes have been enacted where there is substantial political momentum. California recently enacted legislation that pre-empts any prohibitions on residential development in commercial zones.[38] The federal government's role in conversions is limited, though adaptive reuse conversions have used historic tax credits[4] and the Biden administration recently released a guidebook for conversions, focusing on the development of affordable and net-zero GHG emission units.[39]

Redeveloped or substantially rehabilitated buildings can be made to be much less GHG-intensive than older commercial buildings, generating large ongoing reductions to GHG emissions. Adaptive reuse generates even greater savings relative to new construction by avoiding the emissions associated with demolition and replacement of the existing structure.[28] Many large local governments have also implemented regulatory regimes designed to facilitate energy improvements in buildings by fining buildings that are relatively high GHG emitters. In New York City, Local Law 97 imposes fines for properties with high GHG emissions of $0.32 to $0.72 per square foot annually.[32] Boston has implemented a similar program.[40] The Inflation Reduction Act provides substantial federal subsidies to projects that reduce the GHG emissions of buildings, which can be tapped in conversions.[§]

Adaptive reuse generates even greater savings relative to new construction by avoiding the emissions associated with demolition and replacement of the existing structure.[28]

[§] Some of these subsidies are substantial. Section 179D provides $2.50 to $5 per square foot for projects that reduce energy and power costs by 25% or more; sections 50121 and 50122 earmark $4.3 billion in rebates for improvements that generate energy savings over 20%; HUD has billions in grants and loans for improvements to affordable projects; section 48 provides tax credits up to 30% for clean technology improvements; section 60103 provides tens of billions for climate improvements in disadvantaged communities[41]; and the Department of Transportation has billions in below-market loan authority for transit-oriented development projects.[42]

Commercial-to-Residential Deal Volumes: Past and Future

Commercial to residential conversion is not new, and it has been an important source of new residential units, particularly in denser areas, and as part of neighborhood-scale plans.¶ When conversion is broadly defined as any residential development on commercially zoned land, total production volumes can range from 5% to 30% of all residential development. While nationwide estimates are unavailable, in California from 2014 to 2019, less than 1% of commercially zoned parcels saw any residential development.[5] The conversions that did take place generated 38,000 multifamily units, which was 6% of the 622,800 units permitted in California over this period (and about 13% of the 291,608 multifamily units).[43] However, in some regions, conversions comprised a larger portion of development. Conversions in Los Angeles County, for example, comprised over 30% of total production. Conversely, in the San Diego and Sacramento metros, conversions comprised only 2% and 0.6% of multifamily production, respectively.[5]

The current pace of conversion appears to have risen since the 2010s, though data are scarce. There do not appear to be nationwide estimates of the pace of residential development on commercially zoned land, and the Terner study examining these conversions in California was limited to data before the pandemic disrupted real estate markets. There are data tracking adaptive reuse conversions, and this activity increased in the past decade. Figure 3 shows the total multifamily units generated through adaptive reuse conversions from 2010 to 2023 as reported in YardiMatrix and Dodge Construction Network data. While estimates vary somewhat between the two datasets, both sources show that conversion activity has increased substantially from 2010 to 2012 levels, more than a doubling of annual production from 2015 to 2023. This pace of activity appears likely to continue in the short term. RentCafe, analyzing YardiMatrix data, found that 122,000 units of multifamily housing were in the pipeline from adaptive reuse conversions by the end of 2023, 45,000 of which were from office conversions. In 2022, 10,090 units were generated from adaptive reuse, mostly from office and hotel conversions.[4]

However, this trend roughly mirrors the trends in increased multifamily production of any kind over this period. As a percentage of all multifamily units generated, adaptive reuse conversion peaked in 2011 and 2012 as 6% of all multifamily production. By 2023 it had declined to about 3% of multifamily generation, and the adaptive reuse pipeline is also only 3% of multifamily units generated.[44] This relatively small ratio is similar to estimates of production from conversions in New York City over the last decade, which was 4% of total units generated.[2]

¶ For example, one particularly large reuse deal, 160 Water Street in Manhattan, was begun before the pandemic.[4]

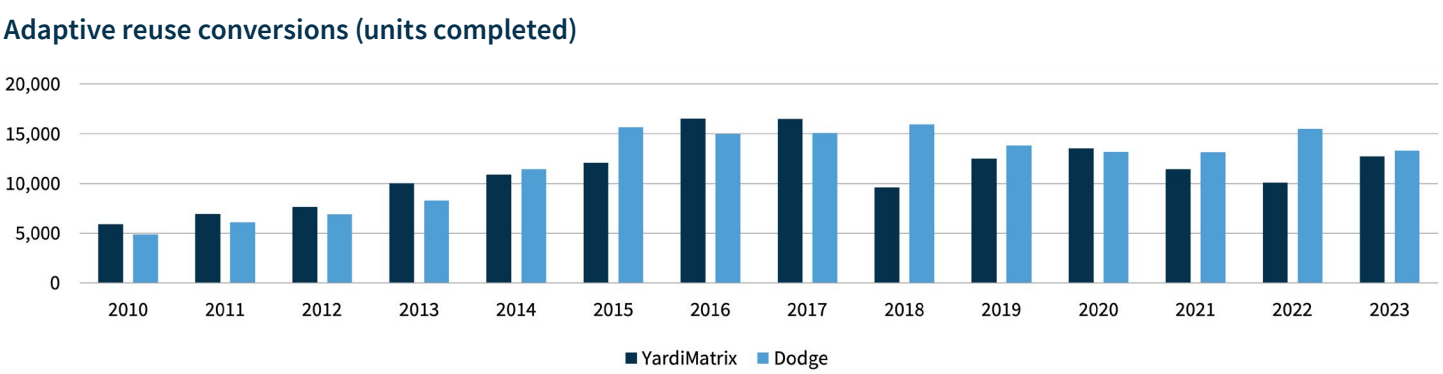

Figure 3: Adaptive Reuse Conversions Have Increased, starting in 2013 *Data from YardiMatrix and Dodge*

Barring major changes to the policy environment or the market, nationwide production due to conversion of any type (redevelopment included) is unlikely to be large. Romem, Garcia, and Johnsson,[5] using assumptions based on recent conversions in California, project that only about 4% of future housing production in the state will come from conversions in the short-term future. Analysts at YardiMatrix and CBRE suggest that production from adaptive reuse of office buildings will be limited because they are feasible primarily in smaller and older properties.[4]

However, major changes to the policy environment and the office market are possible, and in such a scenario some scholars suggest that production from conversion could be substantial. Nationwide, Gupta, Martinez, & Van Nieuwerburgh[32] estimate that conversion of older office buildings in downtown areas alone could generate about 400,000 units. For comparison, the boom in multifamily construction from 2020 to 2023 has averaged 459,000 multifamily starts annually. Their analysis assumes severe distress in office real estate, arising both from rising interest rates at a time when many low-interest mortgages come due and rapidly weakening demand for office space due to work-from-home practices. They anticipate that many properties will be sold at a discount for conversion because of foreclosures or short sales. It is also based on an analysis of Local Law 97's fines' impact on current office building values. They assume that office buildings can be converted with no substantial structural work in a timeframe of 30 months in New York City, inclusive of permitting, relative to five years for redevelopment projects. They also show that subsidies of around $40 per square foot could allow a portion of the new units to be affordable.

However, Gupta et al.'s assumptions appear optimistic given the findings of project-by-project studies of adaptive reuse, particularly in high-cost areas. Garcia & Kwon,[29] examining actual commercial to residential conversions in California, found that most recent adaptive reuse projects required structural work to bring buildings to current code standards, and did not see a substantial difference in the timeline of conversions and re-developments. Gupta et al. assume total per-unit development costs of $400,000, which they base on nationwide case studies presented in a Urban Land Institute report and scale up because New York City has relatively high construction costs.[1] However, this figure is lower than a more detailed estimate from another high-cost market, San Francisco, where per unit costs were anticipated to be between $472,000 to $633,000.[31] Recently completed conversions in the Bay Area saw development costs between $466,000 and $1.6 million.[29] Gupta et al. assume sales prices that imply a 61% loss in value for older office properties, and that a large portion of the transactions in their analysis would come from foreclosure sales or short sales. But currently there is uncertainty about the future of commercial uses in many markets, which makes it unlikely that sellers will accept these discounts.[1] Furthermore, large declines in values and distressed sales do not necessarily lead to conversions, as evidenced by recent distressed sales in shopping malls, where the purchaser is another mall operator.[20]

A financial and architectural analysis of office buildings in San Francisco's central business district, examining the potential for office-to-residential adaptive reuse projects, comes to conclusions that starkly contrast with Gupta et al.'s. In some ways, San Francisco's downtown would appear to be among the best areas for these conversions. Office demand has fallen farther than in other cities, and residential rents, though they have fallen slightly, remain high. While only about 20% of office buildings nationwide are architectural candidates for conversion, 40% of office buildings in downtown San Francisco are conversion candidates. Residential use is by right in downtown San Francisco, and the city passed legislation in mid-2023 that removed many of the code requirements that were barriers to conversion. However, the financial feasibility analysis found that, even given 45% vacancy in offices and current multifamily rents, widespread conversions were very unlikely. Only in a scenario where vacancies rose to 75%, and residential rents rebounded to pre-pandemic levels did conversions appear to be financially better than not converting, and even in this scenario the analysis does not show a rise in profit, only a reduction in losses. The poor financial feasibility was due the substantial seismic retrofits that would be required upon conversion, the inclusionary housing requirements and fees imposed by the city, and the very high construction costs in the city.[31] A study of the potential for commercial-to-residential conversions in Washington, DC came up with a similarly pessimistic picture.[45]

The difference between Gupta et al.'s analysis and the San Francisco and Washington, DC studies mostly arises from the fact that Gupta et al. used a soft-site analysis using a limited set of building characteristics to determine feasibility, while the San Francisco and Washington studies performed more detailed building-by-building analyses. Overall, it is very difficult to estimate the potential volume of adaptive-reuse conversions. Gupta et al. use several screening criteria to filter out buildings that would likely be poor candidates for conversion (e.g., properties that are deeper than sixty feet, small buildings, new buildings, etc.). However, construction costs depend on the specifics of many building systems that cannot be understood without a detailed building-by-building analysis, and in many cases cannot be fully understood until work has already begun. As one developer noted:

> **"Converting a building is so much more complex than just a change in use . . . floor plate, column grid, floor-to-floor height, window systems, HVAC [heating, ventilation, and air conditioning], sewer outfall, and so much more needs to be studied. You don't really know what you're getting into until you take off the facade, walls, bring it down to the concrete."[1]**

Conclusions

Lessons Learned from Past Commercial-to-Residential Development

There is likely greater potential for generation from conversions from redevelopment, rather than adaptive reuse.

Discussions about conversions typically focus on adaptive reuse, but the market and policy drivers of adaptive reuse conversions usually also drive redevelopment conversions as well, which are often more straightforward, and likely much more common than adaptive reuse conversions. There is limited data on the volume of all conversions in the US, but existing studies suggest that conversions from redevelopment outpace conversions from adaptive reuse. In California, most commercial-to-residential conversions have taken place with the redevelopment of obsolete or under-built buildings, or vacant commercially zoned land.[5] Another study conducted in New England found that conversion usually happened because of a dearth of raw land in metro areas, not from any difference in the suitability of existing commercial buildings for conversion.[46] Adaptive reuse of many commercial buildings is more expensive than their demolition and redevelopment. Even among the best candidates for adaptive reuse, total development costs often approach, and sometimes exceed, equivalent costs for demolition and redevelopment.[29] A detailed study of the financial feasibility of office to residential conversions for the most suitable office buildings in San Francisco found that total estimated development costs ranged between $472,000 to $633,000 per unit, not including seismic upgrades.[31] These costs are close to the costs of new multifamily construction costs in the Bay Area.[47,48] There is likely much more commercial land that is amenable to redevelopment than there is adaptive re-use. Redeveloping the worst-performing 10% of strip mall space, for example, could generate 700,000 units.[49]

There are often major design challenges to converting office buildings to apartments, and the adaptive reuse projects that have taken place have highlighted these challenges. Many of these challenges arise from very different code requirements between commercial and residential uses. Most building codes require natural light and ventilation for every habitable room. Practically this limits the depth of residential structures to about 60 feet for a double-loaded corridor.[29,32] Most modern office buildings have much deeper plats, so conversion requires cutting airshafts, creating very deep units, or other design measures that negatively impact costs and potential revenue. Residential uses come with much greater utility requirements, including greater water, sewer, gas, and electricity capacity. Conversion also typically entails relocating at least some vertical support elements, such as elevators, stairs, and mechanical shafts.[29]

Adaptive reuse of any commercial property type raises issues that harm the feasibility of otherwise promising-looking conversion deals. Adaptive reuse usually requires properties to be brought up to current code standards. This can mean extensive renovations to make older properties compliant with the requirements of the Americans with Disabilities Act (ADA),[2] and, in California, this often includes seismic improvements, which can add considerable costs to construction.[29] Adaptive reuse projects are also usually only attractive when the commercial site is at or near its zoning envelope, as generally it would be better to entirely redevelop inefficient buildings.[1]

Beyond these known risks, adaptive reuse has greater levels of un-anticipated risks relative to new construction. Performing substantial work on existing buildings means that unforeseen problems with building systems can be uncovered during the development process, resulting in the need to do additional work, and incur additional expenses. Adaptive reuse projects have had to perform unanticipated work on foundations, mercury remediation, and seismic retrofits,[29] and structural improvements, as when a developer discovered that one floor of an office building contained no rebar.[1] Older buildings often have features that make them better candidates for conversion (thinner floor plates, open-able windows, interesting architectural details), but they also are more likely to have unanticipated constructions costs. A review of dozens of successful adaptive reuse conversions found that many developers learned that they needed a larger contingency budget than expected.[1]

Some policy-driven conversions have generated volume with atypical multifamily deals, but most conversions appear to be typical from a financing perspective

Project HomeKey is an example of a policy-driven program that generated a relatively large volume of units (6,000) in a short time frame through adaptive reuse conversions. However, the program was able to achieve this success by allowing the projects to skip many of the typical entitlement requirements and function as permanent supportive housing units, not typical multifamily units.[22] In general, conversions hold greater potential if building codes and other land use regulations are liberalized to allow for the generation of housing types that are usually non-conforming, such as single-room occupancy units, or the conversion of former industrial properties into residential lofts.[2] If, for example, cities or states waived many of the requirements that necessitated substantial improvements (e.g., by not requiring seismic upgrades or ADA compliance), then conversion might increase in volume. The innovations that make these deals possible, however, raise questions about how these deals can be financed.

However, this does not imply that most conversions will be atypical. Different kinds of conversions can result in different types of multifamily projects. Conversion from redevelopment appears to be very similar to multifamily deals in general. Adaptive reuse of downtown office buildings, because of the cost of construction and high land costs, is best suited to luxury units. Conversion of hotel properties are often subsidized housing, and these conversions can generate small, but otherwise standard, apartment units.[2] It is possible that even HomeKey projects will be financed as typical supportive housing deals, as many are still arranging for permanent financing.[22]

The forces affecting commercial and multifamily markets also drive changes in neighborhoods, which could complicate underwriting

The same forces that are expected to drive conversions in the future also may affect the character of downtown neighborhoods. If greater volumes of workers work from home, spending and commercial demand will shift. Some estimates suggest that spending in city centers will decline by at least 5% to 10% due to these shifts.[12] This could result in a de-concentration of commercial uses, particularly those like restaurants, bars, gyms, and salons, which could increase the relative attractiveness of neighborhoods outside of the CBD. However, this could also mean a loss of these establishments from downtown areas, making these areas less attractive for residents.

Conversely, high levels of conversion activity could lead to a change in the neighborhood economies of downtown areas, potentially revitalizing them. Downtowns that remain attractive for residents and workers could rebound by attracting workers who benefit most from in-person interactions and end up being more productive than before.[50] Some neighborhoods with high densities of commercial uses currently don't have the specific types of commercial uses that make them attractive for residents, such as grocery stores and childcare.[51] For example, office space in New York City is disproportionately in midtown Manhattan, which is one of the least residential neighborhoods in the borough and lacks uses that support residents.[2] But booming conversion-driven residential development in the Financial District of Manhattan shows how these neighborhoods can change over time into areas that support large supermarkets and other uses that were previously absent.

From a lending perspective, this could make underwriting deals more challenging. The feasibility of conversion deals in downtown neighborhoods are heavily dependent on assumptions of future rent levels. These rent levels are uncertain, both because some downtown areas have relatively few multifamily units, and because future rent trajectories could be driven upward by conversion-based revivals, or downward by continued vacancies and declines in neighborhood liveliness.

The next three to five years will likely provide some indication of future conversion levels

Many market and policy drivers that are unclear now will likely become clearer within the next three to five years. For example, the relatively large potential that Gupta et al. see in green conversions in the office sector are based on distressed sales in the sector, reducing acquisition costs for conversions. In the next three to five years, many offices will need to roll over their debt and many leases will come up for renewal.[14] Distressed-sale-based conversions are not the norm, as, historically, indebtedness is a barrier to conversion, even between different commercial uses.[46] However, if lenders are willing to foreclose and accept the losses that Gupta et al. anticipate, then their estimates, which seem optimistic now, may be realized.

The politics of public policy changes to advance conversions can be challenging

Conversions avoid some of the political problems of housing generation, but the regulatory changes that could best unlock the potential of conversions do not align with other policy priorities. Unlike multifamily greenfield development, or multifamily development on residential parcels, residents more often view multifamily development of commercial properties, particularly if they are vacant, as a positive to their communities.[29] Policy changes designed to facilitate housing generation through conversions, however, mostly take the form of liberalizing land use regulations to make it easier to build. Politically, this means providing benefits to developers, which is often unpopular unless it is coupled with specific requirements meant to address housing affordability. Specific requirements for affordability, however, diminish the feasibility of conversions, by lowering rent revenue. This is why many conversions, particularly adaptive reuse conversions, have generated luxury units.[4] There is some potential for mixed-income development, but even this measure will reduce the total generation potential of conversions.[2,31,32] We believe that the impact that conversions will have on affordability through filtering are limited because even optimistic assumptions of conversion potential are not expected to generate enough units to substantially lower rents.[37]

Many market and policy drivers that are unclear now will likely become clearer within the next three to five years.

Gaps in Research

Are there substantial financing innovations or gaps for conversion deals?

It is unclear whether commercial-to-residential conversions face any substantial financing gaps. Many projects that have been completed reported no problems with financing that arose from the project being a conversion, describing the financing as typical for multifamily deals. Redevelopment conversions are very similar to other new construction multifamily projects, and while adaptive reuse projects may require larger hard cost contingencies, they avoid risks from excavation and framing. However, some aspects of projects, such as bedrooms without natural light, and relatively small condo units, were not standard for lenders, and needed additional explanation from the developer.[1]

However, we did not find any research that specifically examined whether conversion deals faced financing gaps or involved any financing innovations that were different from non-conversion deals. Revealing such gaps, or showing their absence, would clarify what can be done to facilitate the financing of conversions.

What is the nationwide potential of conversion to generate units?

The nationwide production level from conversions is unknown, as is the likely total production level in the future. There are studies of parts of the market that shed light onto both questions. The Terner Center has analyzed recent multifamily housing production from conversions in California, Gupta et al. have examined future production levels from "brown-to-green" office conversions, and case studies of areas where policies meant to facilitate conversions, like San Francisco[31] and Manhattan,[2] exist. But residential development on commercial land is not limited to these jurisdictions, and the market and policy forces that drive or hinder conversions in these geographies and sectors might be different in other geographies and sectors. Nationwide studies, and studies that focus on retail and hospitality in addition to office, would help fill this important research gap.

The estimation of conversion potential from adaptive reuse is a very difficult analysis that will be imprecise without detailed building-by-building analysis; however, total redevelopment potential is likely to be larger and easier to measure. The kinds of soft-site analysis that have shown conversion potential in California[5] could be applied to other states and metro areas. Better understanding the drivers of conversion, defined broadly, will provide important insights into the potential of conversion to generate housing units.

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