

## Chapter 9

# The Housing Market

- Activity in the housing market accelerated in 2021. Investment in residential construction expanded, the number of transactions reached a record high, and home prices increased by about 13 percent. The increase in activity and the concomitant sharp increase in prices show that the source of the invigoration of the market is on the demand side, combined with concerns of a decline in supply.
- The increase in home prices in Israel since the beginning of the COVID-19 crisis is not exceptional when compared with other advanced economies.
- Rents in new and renewing contracts (the owner-occupied housing services item in the Consumer Price Index) increased by 3.3 percent in 2021, following a decline in view of the COVID-19 crisis and a subsequent recovery toward the end of the year, but in real terms its increase is the lowest in more than a decade.
- The inventory of built dwellings increased in 2021 in line with demographic needs, even though building completions continued to decline. Building starts and building permit issuances increased.
- Land marketing increased to a record high in 2021 (about 86,000 units), following a number of years in which the volume was insufficient (an average of about 38,000 units in 2019 and 2020). Land marketing is the bottleneck in the planning and construction process. Action must be taken to accelerate the pace of marketing, which was done in 2021.
- As a result of inelastic supply, prices react first to developments in the housing market, while construction reacts slowly. Looking to the future, structural changes are necessary in order to make supply more elastic. This is the fundamental element of the desired reform in the housing market.
- The acceleration of prices was mainly due to an increase in demand by first-time home buyers in view of the cancellation of the “Buyer’s Price” program, and by investors (purchasers of a second home or more) following changes in the purchase tax rates imposed on them. Expectations of price increases also supported demand.
- After the purchase tax rate for investors was reduced in July 2020, the government announced toward the end of 2021 that it intended to increase it back to its previous level, and the increase took effect at the end of November. Accordingly, investors accelerated their purchases prior to the tax increase, and reduced them sharply immediately thereafter.
- Input prices increased, raising the cost of construction, and low real yields in the capital market supported the demand for dwellings. These also contributed to the increase in prices, but according to an assessment presented in this chapter, their effect was secondary.
- The increase in demand for homes by high-tech workers was concentrated in Tel Aviv, and it appears that its contribution to the increase in home prices is limited to this area.
- Since the start of the COVID-19 crisis and the transition to working from home, the prices of single-family houses increased in particular, due to the increased demand for more spacious homes.

This chapter first surveys the developments in the housing market—transactions and buyer characteristics, developments on the supply side, policy, and the reaction of price—and then tries to shed light on the question of what led to the sharp increase in prices in 2021.

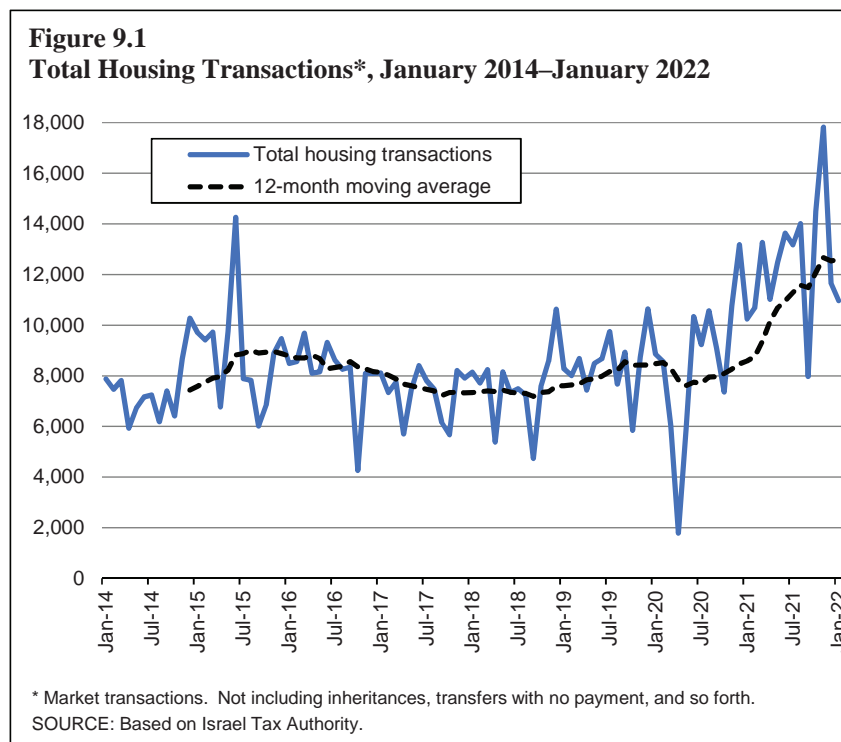
## 1. MAIN DEVELOPMENTS

Activity in the housing market accelerated in 2021. Home prices increased sharply, the number of home transactions increased, and building starts increased (Table 9.1). The increase in activity and the concomitant increase in prices show that the source of the invigoration of the housing market this year was on the demand side, combined with concerns of a decline in supply.

### a. Housing transactions, purchasers and sellers

Figure 9.1 shows the total of housing transactions. There is a marked increase in the number of transactions in 2021, following a number of years of relative stability. With the start of the COVID-19 crisis in March 2020, the market froze temporarily, which was reflected in a sharp decline in the number of transactions. However, within three months, activity recovered, reaching levels higher than before the crisis. Some of the increase reflects a delay of transactions that likely would have taken place during the

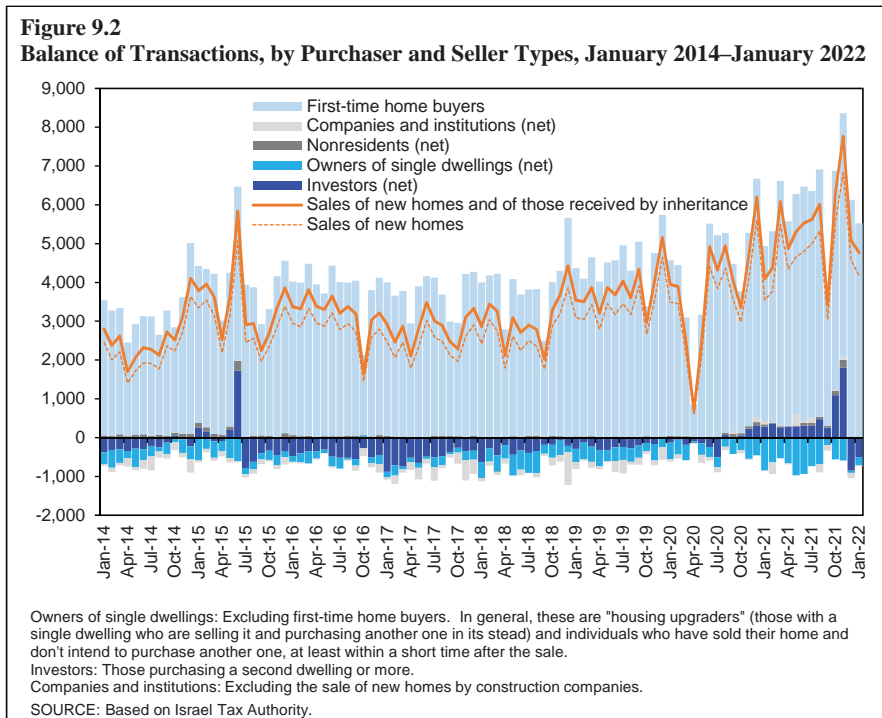
The number of housing transactions reached a peak in 2021.



second quarter of 2020 had there not been a crisis, though the moving yearly average development shows that as early as the beginning of 2021, their number reflected a material expansion and not just compensation for the decline at the beginning of the crisis.

Figure 9.2 shows the balance of purchases and sales in the housing market by type of purchaser and seller. In general, first-time home buyers (mainly young couples) are the most dominant factor in the market on the demand side, because in contrast with other groups, they do not put homes up for sale when making purchases. Over time, purchases by this group reflect the demographic development of the population, but in the short term, they also reflect intertemporal substitution—the advancing or delaying of purchases as a reaction to market conditions or an expectation of change in those conditions. For instance, following the announcement of the “Zero VAT” program in 2014, purchases declined as potential buyers expected that they would soon be able to purchase a home at a lower price. Once it became clear that the program would not be implemented, the purchasers returned to the market and the number of transactions increased. Similarly, it is likely that in the recent period, following the replacement of the “Buyer’s Price” program with other programs (details below) that were perceived by the public as less attractive, some eligible buyers who had waited with the expectation of purchasing a new home through “Buyer’s Price” chose to stop waiting, and purchased a home in the open market.

First-time home buyers (mainly young couples) are the most dominant demand-side factor in the market. Following the replacement of the “Buyer’s Price” program with less attractive alternatives, these buyers increased their purchases in the open market.



Investors (those purchasing a second dwelling or more) increased their net purchases immediately after the July 2020 reduction in the purchase tax imposed on them, and reduced their purchases immediately after the tax was increased back to its previous level in November 2021.

The Figure also shows that investors (those purchasing a second dwelling or more) increased their net purchases beginning in the second half of 2020. At the end of July 2020, the government lowered the purchase tax on investors, who, in response, increased their purchases. In the five years preceding the tax reduction, investors were net sellers of dwellings, meaning they sold more homes than they bought, thereby easing the upward pressure on home prices. When the tax was reduced, investment dwellings became more attractive, and investors became net purchasers. Toward the end of 2021, the government announced its intention to raise the tax rate for investors back to its previous level, and the increase took effect at the end of November. Accordingly, investors accelerated their purchases prior to the tax increase, and reduce them sharply immediately afterward. A similar phenomenon took place in June 2015. At that time, the government increased taxation on investors' purchases, and in response, investors brought such purchases forward before the new tax rates took effect, which led to record high net purchases (Figure 9.2). Immediately after the increase in the tax rates, investors' purchases declined, and investors became net sellers. The development of home prices in the short term was in line with the sharp change in investors' behavior: Prices rose sharply with the increase in purchases prior to the tax increase, and the increases moderated for two months following the tax increase. The same was the case prior to the 2021 tax increase at the end of November, when the increase in home prices accelerated. Data that will be obtained during the coming year will help determine the extent to which the investors' exit from the market is significant for the development of prices.

In contrast with first-time home buyers and investors, owners of a single dwelling<sup>1</sup> reduced their net purchases in 2021, thereby essentially moderating the pace of price increases. This development shows that alongside the increase in demand for dwellings, some home sellers waited a longer time this year than in the past until buying a replacement home, or chose to sell their homes and leave the home ownership market.

Finally, the increase in the number of transactions clearly reflects not only an increase in the replacement of homes among households, but also an increase on the supply side, since the sales of new homes also increased in 2021.

<sup>1</sup> The group "owners of a single dwelling" includes "housing upgraders"—individuals with one dwelling who sell their home and purchase another in its place, as well as individuals who sold their home and do not intend to purchase one to replace it, at least within the short term following the sale. When a home is sold, one cannot know whether the seller is a housing upgrader or someone who is existing the ownership market, except in cases where a housing upgrader purchases the replacement home before selling the home he owns.

Table 9.1: Selected housing market data, 2006–2021

	2006–2015 average	2016	2017	2018	2019	2020	2021
<b>Factors of demand<sup>a</sup></b>							
General population (rate of change) <sup>b</sup>	1.9	2.0	2.0	1.9	1.9	1.8	1.6
Population aged 25+ (rate of change) <sup>b,c</sup>	2.0	2.0	2.0	2.0	2.0	1.9	1.8
Average real wage per Israeli employee post (rate of change) <sup>d</sup>	0.7	2.9	2.9	2.7	2.1	3.1	4.9
Average net real household income (rate of change)	3.1	2.7	4.6	3.8			
Unemployment rate <sup>e</sup> among those aged 25–64 (annual average)	6.5	4.1	3.7	3.5	3.4	14.6	9.6
Weighted real interest rate on new mortgages (annual average)	2.2	1.5	1.9	1.7	1.5	1.1	0.8
Real per capita GDP (rate of change)	2.3	2.4	2.4	2.0	1.8	-3.9	6.4
Rate of those planning to buy a home in the next 12 months (annual average) <sup>f</sup>		7.6	7.3	8.4	8.3	7.4	7.8
<b>Factors of supply</b>							
Building starts (thousands of housing units)	41.0	57.0	55.8	55.6	56.4	56.0	63.3
<i>of which</i> : dwellings not for sale under construction (thousands of housing units)	17.6	20.0	19.0	18.9	18.9	14.5	14.7
Building completions (thousands of housing units)	36.1	46.5	50.1	52.5	52.3	49.4	46.8
Stock of homes under active construction (end of year, thousands of housing units)	78.5	115.4	120.7	124.0	126.3	131.6	139.0
Building permits (thousands of housing units)	42.0	54.1	56.5	52.2	57.6	54.2	76.3
Real investment in residential construction (rate of change)	5.6	8.5	3.7	-0.7	2.2	-8.7	13.9
Housing units approved in the district committees and in the VATMAL (thousands) <sup>g</sup>	47.4	110.9	127.2	151.6	140.6	95.4	108.1
Land marketed in ILA tenders (thousands of housing units)	22.4	63.8	55.1	57.5	36.6	39.6	86.0
<b>Outcome data</b>							
Housing transactions (thousands) <sup>h</sup>	89.7	98.0	88.0	91.2	101.1	101.7	150.5
<i>of which</i> : New homes sold (thousands) <sup>h</sup>	23.5	33.5	28.8	31.4	40.4	40.7	56.9
Home prices - nominal (rate of change during the year)	7.6	5.7	1.4	-0.8	4.2	4.0	13.0
Home prices - real (rate of change during the year) <sup>i</sup>	6.2	6.5	1.9	-1.3	4.1	4.8	10.3
Rents - nominal (rate of change during the year) <sup>j</sup>	3.8	1.4	2.6	1.9	2.8	0.2	3.3
Rents - real (rate of change during the year) <sup>h,i</sup>	2.5	2.2	3.1	1.4	2.7	1.0	0.8
Rate of households that do not own a home (annual average)	28.5	27.4	28.2	27.5			
Rate of households that own one home (annual average)	65.6	62.9	61.8	62.4			
Rate of households that own two or more homes (annual average)	5.9	9.7	10.0	10.1			
Length of time to sell home (annual average, days) <sup>j</sup>		194	173	221	218	211	198
Percentage of homes purchased by investors as a share of total purchases (annual average)		14.7	13.2	13.7	12.5	14.1	18.1

<sup>a</sup> Rates of change are shown as the average of the current year compared with the average of the previous year.

<sup>b</sup> The 2006–2015 average does not include 2009 due to a break in the data series.

<sup>c</sup> The figure for 2021 assumes that the growth of the population aged 25+ continued in accordance with its trend of previous years.

<sup>d</sup> A correction due to the COVID-19 crisis in 2020 and 2021: The real wage corrected for the composition of employees, and the broad unemployment rate (including employees temporarily absent for reasons having to do with COVID-19, and nonparticipants who stopped working after being dismissed or because their place of work closed during the COVID-19 period).

<sup>e</sup> The Central Bureau of Statistics Consumer Confidence Index. The rate of respondents who believe that it is quite likely or very likely that they will buy a home in the next 12 months.

<sup>f</sup> The multiyear average is for the years 2007–2015.

<sup>g</sup> Market transactions. Excluding transfers with no payment, among relatives, etc.

<sup>h</sup> Adjusted for the Consumer Price Index excluding housing.

<sup>i</sup> Rents in new and renewing contracts (the owner-occupied housing services item in the Consumer Price Index).

<sup>j</sup> Duration from the time the dwelling is put up for sale until the sale transaction is signed.

SOURCE: Central Bureau of Statistics, Israel Lands Authority, Planning Administration, Israel Tax Authority, and Bank of Israel.

## b. Activity in the construction industry

The COVID-19 crisis slowed activity in the residential construction industry (Figure 9.3), even though the industry was excluded from the activity restrictions at an early stage of the first lockdown in March 2020. Activity in the industry recovered in the second half of 2020, and by the end of 2021 it had reached its precrisis trend—the level that would have been expected had the crisis not happened. It is likely that without excluding the industry from the activity restrictions, the upward pressure on home prices would have been even greater. Investment in residential construction<sup>2</sup> contracted

Despite the recovery of activity in the construction industry following the COVID-19 crisis, the level of labor input in the industry remains low.

<sup>2</sup> We use real investment in residential construction as an indicator of the volume of activity in the industry. Investment in construction is measured as the value (in fixed prices) of the area being built in a given period.

by an average of about 8.7 percent in 2020, and increased by 13.9 percent in 2021. In contrast, labor input (work hours) contracted by an average of 9.9 percent in 2020, but increased by just 3.6 percent in 2021. The level of the labor input remains lower than before the crisis, despite the industry's recovery.<sup>3</sup>

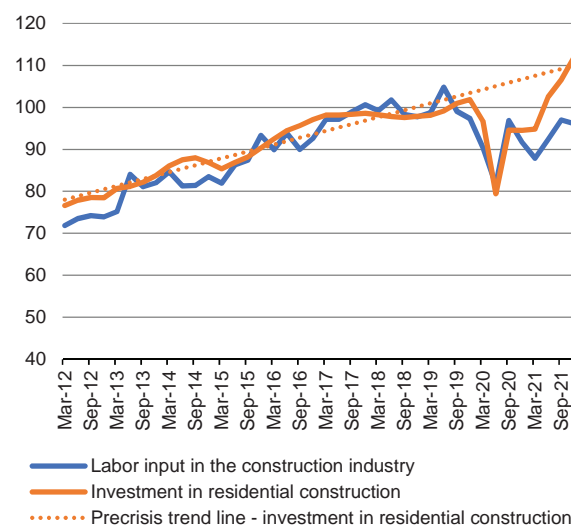
The numbers of building starts and building permits increased. In contrast, the number of building completions has generally been in a downward trend since mid-2019.

Figure 9.4 shows the development of building permits, building starts, and building completions (total activity in the previous 12 months). Contrary to the data on labor input and investment in the construction industry, it is difficult to identify the effect of the COVID-19 crisis

in this Figure. Building starts and building permits remained at historically high levels, and even accelerated mainly in the second half of 2021. In contrast, the number of building completions declined, further to its trend since mid-2019, but there are no particular signs of the crisis here either.<sup>4</sup> It therefore seems that the impact of the crisis on the construction industry, as reflected in investment in construction and in labor input, was relatively short, and therefore did not leave a significant mark on the number of homes under construction. Due to the relatively long duration needed to obtain a building permit, permit data reflect the approval of requests submitted months earlier, and the development of building starts shows that the crisis did not lead to the cancellation of projects on a significant scale. The slowdown in activity was mainly reflected in an extension of the duration of construction and the consequent decline in building completions later on.

The decline in building completions, together with stability in building starts, may explain at least some of the discrepancy between the recovery of activity in

**Figure 9.3**  
**Labor Input in the Construction Industry and Investment in Residential Construction, 2012–2021**  
(indices: 2019 average=100)



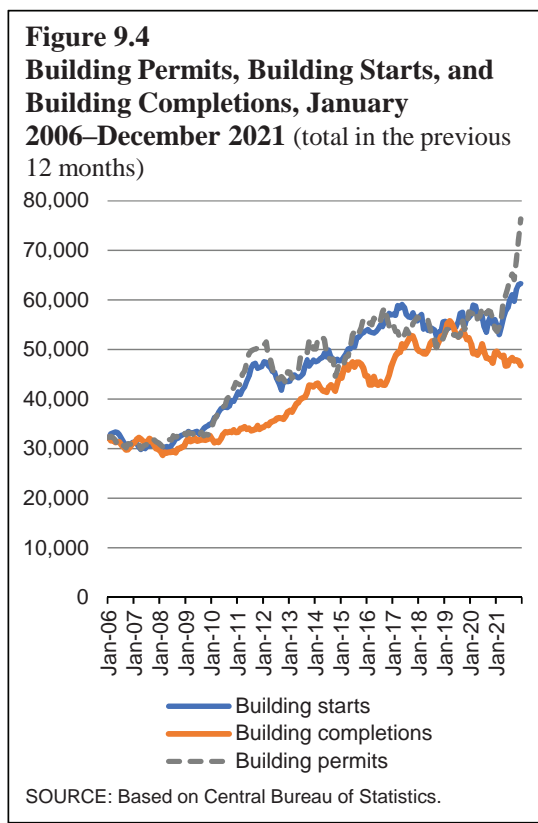
SOURCE: Based on Central Bureau of Statistics.

<sup>3</sup> Due to data restrictions, the data on labor input relate to the entire construction industry, while data on investment relate only to residential construction. An examination of total investment in construction shows an even more extreme picture, since investment in nonresidential construction continued to grow in 2020 despite the crisis.

<sup>4</sup> In terms of the monthly data as well it is hard to identify any anomalous decline in activity due to the crisis, other than perhaps the issuance of building permits. However, these recovered rapidly a short time afterward. Therefore, the spread of the data in Figure 9.4 over 12 months does not hide an anomalous decline due to the crisis.

the industry and the decline in labor input. The labor intensity involved in activity toward the end of construction (plumbing, flooring, electricity, and so forth) is greater than in activity during the initial stages (digging foundations and pouring foundation columns and the building framework). It is therefore likely that the decline in labor input alongside the recovery in activity in the industry (Figure 9.3) reflects a decline in the share of labor connected with building completions compared with that of building starts (Figure 9.4). Moreover, activity in nonresidential construction continued to expand in 2020, although at a more moderate pace than in previous years. It is therefore possible that competition for workers in the construction industry as a whole diverted labor input from residential to nonresidential construction, causing difficulties for residential construction.

The Central Bureau of Statistics Business Tendency Survey shows the main factors constraining activity in the construction industry. The Survey shows that the main constraints in the industry were due to factor inputs—the availability of land for construction and a shortage of skilled workers—alongside delays in obtaining permits and approvals. These factors have been constraining activity in the industry for a long time, and the COVID-19 crisis led to a worsening of these constraints. The crisis also led to a worsening of demand constraints and obtaining credit in the second quarter of 2020, but these were eased rapidly and returned to their precrisis levels. Finally, the raw materials and equipment constraint worsened in 2021, and is currently higher than in the past, in view of the increase in international shipping costs and supply chain interruptions. However, this factor is less constraining than the others.<sup>5</sup>



The decline in building completions relative to building starts may explain at least some of the moderation in labor inputs alongside the recovery of activity in the industry, because the labor intensity of activity toward building completion is greater than in the first stages of construction.

The Business Tendency Survey shows that the main constraints in the industry are due to the supply of factor inputs and delays in obtaining permits and approvals.

<sup>5</sup> At the end of 2021, about one-quarter of companies in the Survey reported that the raw materials and equipment constraint was moderate or serious. By comparison, during the year, more than half of companies in the survey viewed the land constraint and delays in obtaining permits and approvals as moderate or serious constraints, and close to 40 percent of the companies viewed the hiring of skilled workers as a moderate or serious constraint.

### c. Policy measures

The government's policy, the activity of its branches, and measures by the Bank of Israel all have an impact on developments in the housing market. Construction planning through the Planning and Administration and land marketing by the Israel Lands Authority (ILA) are the main tools through which government policy is put into action on the supply side. In the past two years, the government has taken a number of policy measures aimed at specific population groups, including the replacement of the "Buyer's Price" program with the "Reduced Price" program, and then with the "Target Price 2.1" program, and reducing the purchase tax for investors at the end of July 2020 and then raising it back at the end of 2021. Likewise, the Bank of Israel eased the credit restrictions on mortgages on the "Prime" track at the beginning of 2021.

#### (1) Supply-side policy measures

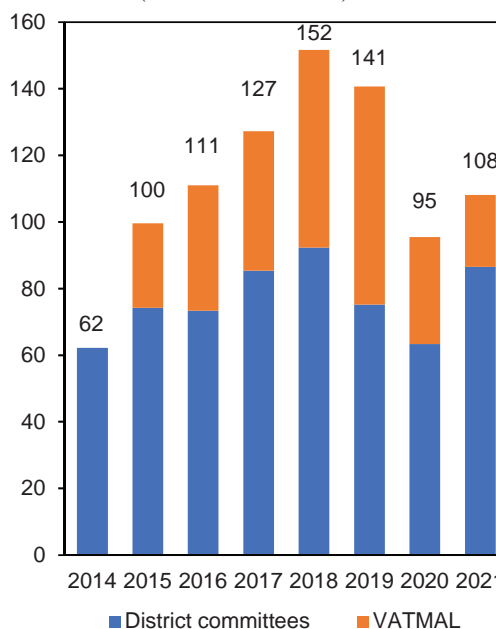
The initial stages of implementing the government's programs are approval of building plans and marketing of the land. These steps are under the responsibility of the Planning Administration and the ILA. Actual construction of the planned residential units depends on market conditions and the response of the various participants to those conditions.

Figure 9.5 shows the development of the number of units in plans approved in recent years, and the distribution of approvals between the district planning committees and the National Planning and Building Committee for Priority Housing Areas (VATMAL).<sup>6</sup> In 2021, approvals were issued for about 108,000 residential units—above the government target of 104,000.

The pace of approvals for planned residential units has been high in recent years, partly due to the VATMAL's activity. However, the VATMAL's weight has declined

The pace of approvals for planned residential units has been high in recent years—partly due to the VATMAL's activity, even though its share of total approvals declined in the past year. If the district committees maintain a high pace of approvals, the VATMAL's involvement in approving plans should be reduced.

**Figure 9.5**  
Housing Units Approved by the District Committees and by the VATMAL, 2014–2021 (thousands of units)



SOURCE: Planning Authority.

<sup>6</sup> The VATMAL was established in 2014, and began approving residential units in 2015. In August 2021, the supporting legislation for the VATMAL was extended by four years.



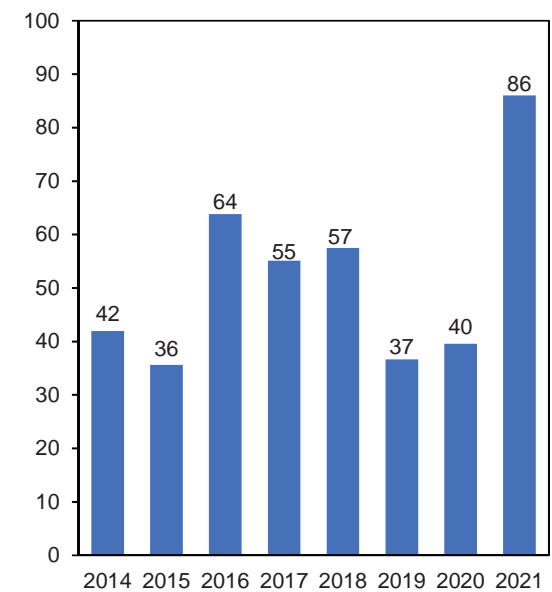
in the past year, alongside an increase in the number of residential units approved by the district committees. In 2021, the district committees approved about 86,500 residential units, a volume higher than in previous years. If the district committees manage to maintain a high pace of approvals, it would be preferable to reduce the VATMAL's involvement in approving plans, since its activity is intended to bypass the normal planning procedures. A sufficient number of residential units approved through the district committees would obviate the need to spur the process by bypassing them. It should be noted that not all planned units reach the construction stage in the end, and that many of the units approved in the committees, particularly in VATMAL, are approved under conditions that sometimes involve considerable investment in infrastructure. As a result, a planning inventory that is greater than the actual housing needs is necessary. A June 2021 report by the National Economic Council monitoring the strategic housing plan for the years 2017–2040 estimates that the number of housing units planned in open areas needs to be 1.55 times higher than the required volume of building completions, and that in urban renewal plans it needs to be twice as high.

Following the planning stage, the planned land is marketed for construction by the ILA. Figure 9.6 shows the number of planned housing units for which land was marketed in tenders. In 2021, there was a significant increase in the volume of marketing, reaching about 86,000 housing units. However, in the previous years, the volume of marketing was much lower, averaging about 47,000 units between 2014 and 2020, and the rate of tenders that ended with a winning bid was about 60 percent in those years. It therefore seems that in view of the volume of planned units and the volume of building permits, land marketing is a bottleneck in the planning and construction

process, and the pace of marketing must be accelerated as has been done in the past year.<sup>7</sup> Moreover, similar to the past, there are barriers regarding some of the land marketed in 2021, such that the land cannot be built on in the immediate term.

<sup>7</sup> There is also, obviously, construction on private land and through urban renewal programs. These do not require the marketing of land by the ILA, but most of the construction is on state-owned land.

**Figure 9.6**  
**Land Marketing in ILA Tenders,**  
**2014–2021** (thousands of units)



SOURCE: Israel Lands Authority.

The Israel Lands Authority increased the volume of land marketing this year.

In order to increase the rate of marketing that ends in a winning bid, there must be investment in infrastructure that supports residential construction (roads, public institutions, drainage, etc.) before marketing the land in tenders. It should be noted that this is consistent with the findings of the Central Bureau of Statistics Business Tendency Survey, which show that the availability of land for construction is one of the most restrictive constraints for companies in the industry, not just this year, but over time. Following the trough in land marketing in 2019, we would have expected a recovery in 2020, but activity was interrupted due to the COVID-19 crisis. It seems that the development of marketing in 2021 compensated somewhat for the previous low level, and this may be reflected in the housing market in the coming years. However, the sharp increase in land prices in the recent ILA tenders, even in areas that are not considered high-demand areas, may also be reflected in the housing market.<sup>8</sup>

If the government meets its targets for the coming years, it is expected to have a significant impact on the market.

Toward the end of the year, the government announced targets for the years 2022–2025, which included the planning of about 125,000 residential units per year and building starts of about 70,000 units per year, on average. By comparison, the June 2021 report by the National Economic Council monitoring the strategic housing plan for the years 2017–2040 estimates that the economy’s demographic needs between 2021 and 2025 are about 60,000 housing units. As such, if the government meets its targets for the coming years, it is expected to have a significant impact on the market.

The expansion of supply in city centers depends mostly on urban renewal.

The expansion of supply in city centers depends mostly on urban renewal. In order to reduce uncertainty for developers and residents, and to encourage the more rapid realization of these projects, the most recent Economic Arrangements Law included a number of measures. A uniform policy was set out to determine betterment tax rates; exemptions from capital gains tax and VAT were expanded; the necessary majority among home owners to advance such initiatives was lowered from 80 percent to 66 percent, with protection for the elderly and the exclusion of those who have contravened building codes in the majority required to make a transaction; and dates for the cancellation of agreements were limited.

## (2) Government-subsidized housing plans

Over the past two years, the government has launched two government-subsidized housing programs intended to replace the “Buyer’s Price” program: “Reduced Price” and “Target Price 2.1”. Housing subsidies for target populations influence their demand for dwellings, but the operating mechanism of the programs involves government intervention in managing supply.<sup>9</sup>

<sup>8</sup> For more discussion, see the Bank of Israel’s *Financial Stability Report* for the second half of 2021.

<sup>9</sup> Alternatively, the government can subsidize the dwellings for eligible buyers without intervening at all on the supply side, and thereby avoid directing demand of eligible buyers to only new dwellings and the investment of resources necessary to manage supply.

The “Reduced Price” housing program was launched in September 2020.<sup>10</sup> The program is intended to be more progressive than the “Buyer’s Price” program, by focusing benefits on areas where land values are lower. The program divided the country into three regions according to price per square meter built, labeled “luxury”, “demand”, and “periphery”. In the luxury areas, land is marketed to the highest bidder, and home prices are set in the open market with no subsidy. In the demand areas, there are two marketing methods. The first is competition over the highest bid for land, while the sale price per square meter built and development expenses are fixed. The second is competition over the lowest price per square meter built (with minimum and maximum prices), while development expenses and land prices are fixed. In the periphery areas, land marketing enables competition over the payment of development expenses, after government subsidy, while the land prices and sales price per square meter are fixed.

The “Target Price 2.1” program was launched in September 2021. Similar to the “Reduced Price” program, this program also applies to areas where the price per square meter built does not exceed a particular threshold.<sup>11</sup> The land tenders in the program are based on the highest bid, with a commitment to sell the homes to eligible buyers at a predetermined subsidized price. The discount rate in this program is 20 percent of the price of the dwelling, but no more than NIS 300,000, and the volume of dwellings intended for eligible buyers is 60–65 percent of all marketed dwellings.

### *(3) Policy measures on the demand side*

As part of the measures to cool the housing market, the government raised the purchase tax brackets for investors toward the end of 2021, after having lowered them at the end of July 2020. In view of the standstill in the housing market at the beginning of the COVID-19 crisis (Figures 9.1 and 9.2), the government reduced the purchase tax rate for investors by 2–3 percentage points, depending on the value of the dwelling. This measure brought investors back to the market, and they turned from net sellers of dwellings to net purchasers (as described above). As the market heated up, and following the marked increase in prices, the government decided to increase the tax brackets for investors back to their previous level, with the aim of cooling demand for homes. The new tax rates took effect at the end of November 2021, and their impact was already felt in the data on investors’ purchases for December.

At the beginning of the 2021, the Bank of Israel eased the restrictions on housing loans in the track indexed to the prime interest rate. Until the restriction was eased, mortgage borrowers could take up to one-third of their loans indexed to the prime rate. After it was eased, the maximum rate was increased to two-thirds. The prime rate track is cheaper, at least in the short term, due to the low level of the Bank of Israel interest rate at this time, but the track is exposed to higher costs in the future, with

The “Reduced Price” housing program replaced the “Buyer’s Price” program in September 2020. The new program is more progressive by focusing benefits on areas where land values are lower.

The “Target Price 2.1” program was launched in September 2021, and applies to areas where the price per square meter built does not exceed a particular threshold.

In view of the standstill in the housing market at the beginning of the COVID-19 crisis, the government reduced the purchase tax on investors in July 2020. Once the market heated up and prices increased markedly, the government raised the tax back to its original level in November 2021.

At the beginning of 2021, the Bank of Israel eased the restriction on housing loans indexed to the prime rate.

<sup>10</sup> The intention to replace the “Buyer’s Price” program with another program was announced a short time after the establishment of the previous government, in mid-2020.

<sup>11</sup> NIS 20,000 per square meter built before VAT (end-of-2020 prices).

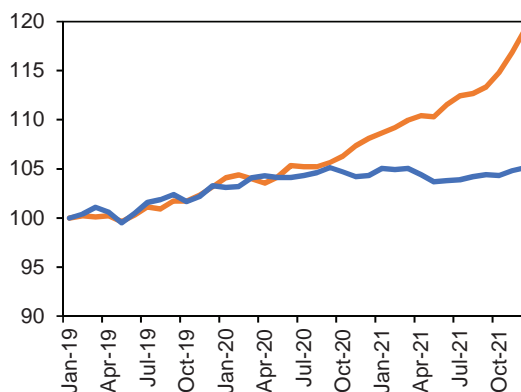
the increase in the interest rate due to economic growth and the risk of inflation. However, due to the variable nature of the interest rate on this track, the cost of the transition to other tracks, if needed, is low.<sup>12</sup>

After the restriction was eased, the real interest rate on mortgages, which weights all loan tracks, declined by about 0.3 percentage points in 2021 (Table 9.1), despite the decline in other yields that also affect the pricing of mortgages. The average share of the prime rate track in the mix of mortgages increased to about 42 percent at the end of 2021, which is below the new restriction. Even if this measure led to a decline in the average interest rate on mortgages, due to the increase in the weight of the prime track, it had only a small impact on housing prices.

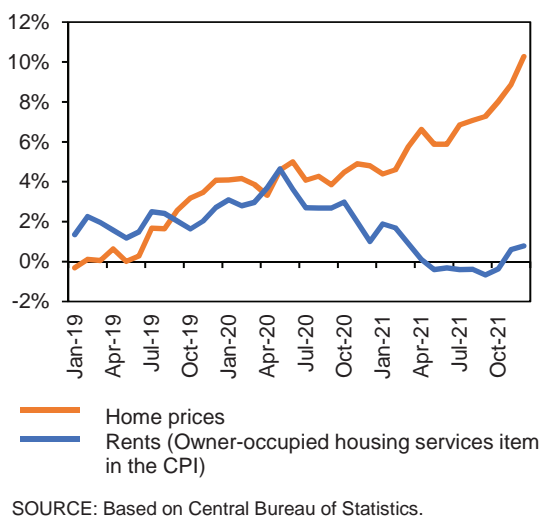
#### (4) Prices and rents

The developments outlined above—buyers' behavior, activity in the construction industry, and government policy—are in the end reflected in home prices and rents. In nominal terms, home prices increased by 13.0 percent in 2021, and rental prices (the owner-occupied housing services component in the Consumer Price Index, which is rent in new and renewing contracts) increased by 3.3

**Figure 9.7a**  
Home Prices and Rents Adjusted for the CPI Excluding Housing, 2019–2021 (index: January 2019=100)



**Figure 9.7b**  
Home Prices and Rents Adjusted for the CPI Excluding Housing, 2019–2021 (annual rate of change, percent)

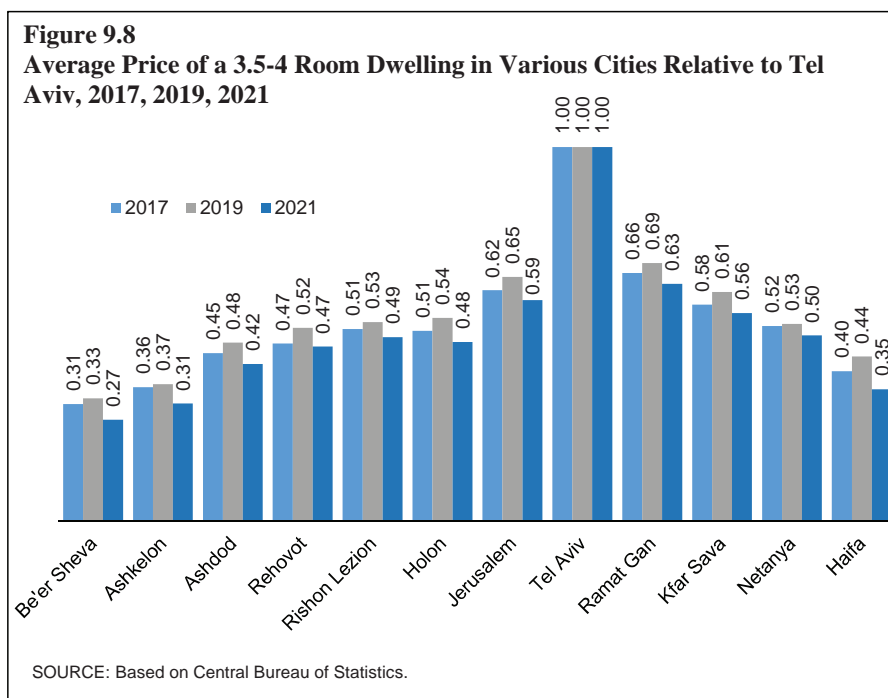


<sup>12</sup> In order to benefit from this advantage, it must be utilized before the interest rate on other tracks is raised significantly.

percent.<sup>13</sup> Figures 9.7a and 9.7b show the development of home prices and rents in real terms—adjusted for the Consumer Price Index excluding housing. Figure 9.7a shows that rents and prices moved in tandem prior to the COVID-19 crisis, and from the second half of 2020, rents were stable, while home prices skyrocketed. 2021 ended with a moderate real increase of about 0.8 percent in rents, the lowest annual increase since 2007. For most of the year, rents were a moderating factor in the Consumer Price Index, as reflected in the real decline in rents for a significant part of the year (Figure 7b). While the increase in nominal rents accelerated toward the end of the year, this was in view of the general increase in inflation, and it is likely that at least some of the increase was due to updates in rental contracts in accordance with the general increase in prices.

Home prices increased all over the country, but the rate of increase was not uniform across cities. As a result, relative prices changed. Figure 9.8 shows the average prices of 3.5–4 room apartments (the most common apartment size in Israel) in various cities relative to Tel Aviv in 2017, 2019, and 2021. The cities in the Figure are arranged

Starting in the second half of 2020, the increase in home prices in real terms accelerated, while rents remained relatively stable.



<sup>13</sup> The housing component of the Consumer Price Index contains three elements: owner-occupied housing services, which is weighted at about 70.1 percent of the housing component; rents, which is weighted at about 25.6 percent; and other housing expenses (preparing contracts, agency, taxation, and so forth), which is weighted at about 4.4 percent. The owner-occupied housing services element is measured using rents in new and renewing contracts, while the rent element relies mostly on existing contracts. The owner-occupied housing services element better reflects the conditions in the rental market at any point in time than the rent element, since the latter is mainly affected by contracts signed in the past. As such, we use the owner-occupied housing services element to measure the development of rental prices.

Between 2017 and 2019, the gaps in prices between various cities and Tel Aviv narrowed slightly, but in the past 2 years they have widened.

to approximate their geographic location on an axis from Be'er Sheva to Haifa. The Figure clearly shows that, as expected, the highest prices are in Tel Aviv, and that they decline the farther away the locality is from Tel Aviv. Between 2017 and 2019, the price gaps relative to Tel Aviv narrowed slightly, but in the past two years they increased. Even though it seems that the changes in relative prices are small, they reflect considerable differences in rates of change of housing prices. Between 2019 and 2021, home prices in Tel Aviv increased by at least 10 percent more than the increase in most cities that appear in the Figure.<sup>14</sup>

## 2. WHY DID HOME PRICES INCREASE?

Having reviewed the developments in the housing market, we now track the causes of the recent increase in home prices (beginning in the second half of 2020). We examine a number of factors on both the demand side and the supply side, and try to assess the likelihood of each of them being a major cause for the increase in prices. The factors we examine on the demand side are: (1) the effect of government measures—changes in the purchase tax rate on investors and the cancellation of the “Buyer’s Price” program; (2) demand for large homes and single-family houses (including detached, semidetached, and townhouses) due to the effect of the COVID-19 crisis; (3) the contribution of high-tech workers to demand for homes due to the growth of the industry and the wealth effect of those employed in it; and (4) the effect of alternative yields in the capital market. On the supply side, we examine: (1) the development of the inventory of homes compared to demography (the shortage of homes); and (2) the increase in the prices of construction inputs.

The long-term upward trend in home prices since 2008 is mainly due to a shortage of dwellings—in which supply did not manage to keep up with demand. We find that the development of the inventory of homes relative to demography was at a more balanced point at the end of 2021. Our assessment is that temporary demand factors, including changes in the purchase tax on investors and changes in the housing plans for eligible buyers (“Buyer’s Price”, “Reduced Price”, and “Target Price 2.1”) were among the main factors behind the acceleration of the price increases in the past two years. Yields in the capital market and the prices of construction inputs also contributed, but in our assessment, their impact was secondary.

### a. Demand factors

#### *(1) End of the “Buyer’s Price” program and lowering the purchase tax on investors*

In this section, we examine which buyer types in particular increased their purchases, which should hint to the source of change in demand.

<sup>14</sup> For instance, the relative decline in prices in Rehovot from 0.52 to 0.47 between 2019 and 2021 means that the price increases in Tel Aviv were about 10.6 percent greater than in Rehovot.

Figure 9.9 shows total purchases by first-time home buyers (“young couples”) in the open market<sup>15</sup> and net purchases, meaning purchases minus sales, of investors (Israeli-resident individuals purchasing a second home or more). In these two groups, there was a marked increase in purchases beginning in the second half of 2020, timing that is in line with the start of the accelerated increase in home prices. It is therefore plausible that the increase in their demand is what pushed prices higher. Among the other buyer types—those with a single dwelling, nonresidents, and companies and institutions—there was no significant increase in net purchases (Figure 9.2), so they are not presented here.

There was no significant demographic change in the recent period, so the acceleration in home purchases by first-time home buyers reflects a transition from rental housing (or rental alternatives) to owned housing. This means that the change reflects more moderate demand for rentals and an increase in demand for owned housing. In addition to reflecting an increase in demand for purchased homes, the acceleration of net purchases by investors factored into the increase in the supply of rental homes. These two increases led to upward pressure on home prices and a moderation of rental prices in the short-term. This development can therefore explain why rental prices did not increase at a similar rate to that of home prices in the recent period (Figures 9.7a and 9.7b).

The obvious question is what caused the increase in demand by investors and first-time home buyers at this time. When the COVID-19 crisis started, activity in the construction industry slowed, and the concern of a prolonged slowdown alongside reports of a decline in building starts (reports that were later revised upward) and a slowdown in building completions may have created expectations of price increases, which led to their actual increases. This was all in view of policy changes regarding the two groups of purchasers—first-time home buyers and investors—which supported an increase in their demand for purchasing homes.

Investors’ demand increased markedly immediately after the reduction in the purchase tax for that group, which took effect at the end of July 2020. Until the tax reduction, investors were net sellers, essentially serving as a moderating force on prices. With the reduction in purchase tax, it became more worthwhile to invest, and investors’ purchases went up (Figure 9.9). The purchase tax brackets for investors were raised back to their previous level at the end of November 2021, and the expectation that they would be raised led to a further acceleration of purchases and to additional upward pressure on prices. In December, following the increase in the purchase tax, investors’ purchases dropped, and investors once again became net sellers.

Regarding first-time home buyers, the timing of the increase in their purchases coincided with the timing of the cancellation of the “Buyer’s Price” program and the launch of the “Reduced Price” housing program by the Ministry of Housing (which was then replaced in September 2021 by the “Target Price 2.1” program). The benefits

<sup>15</sup> That is, excluding purchases of government subsidized dwellings (“Buyer’s Price” and the other programs).

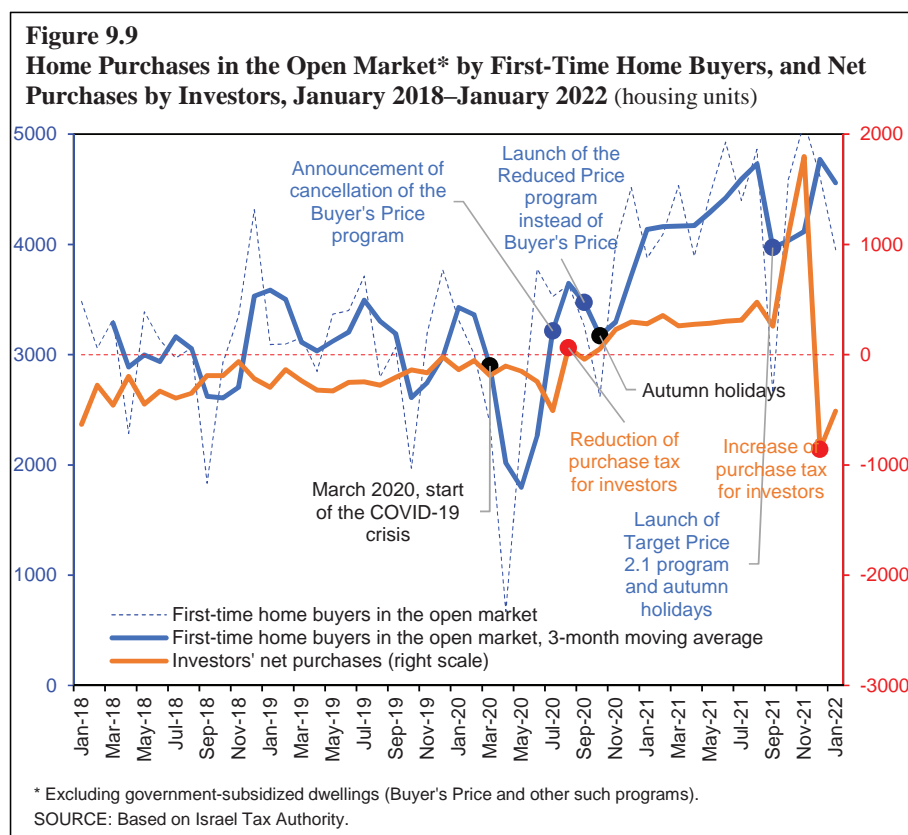
Most of the increase in purchases was due to purchases by first-time home buyers and by investors.

The increase in purchases by these two buyer types supports the acceleration of home prices and the moderation of rents.

The timing of the change in taxation on investors coincided with the development of their purchases.

The increase in purchases by first-time buyers coincided with the cancellation of the “Buyer’s Price” program and the launch of programs with less attractive benefits.

in the new programs are more progressive than those in the “Buyer’s Price” program. In particular, the areas with the highest land value are not included in the programs, and the discounts for eligible buyers are concentrated in more peripheral areas. The diversion of the benefits to areas with less demand and the reduction of the discounts included in those benefits, alongside the cost involved in waiting to win an apartment and move in, reduce the attractiveness of those benefits. It is likely that in response to the change in the terms of the programs, some eligible buyers decided to purchase a dwelling on the open market, which is reflected in the upward trend of their purchases (Figure 9.9).



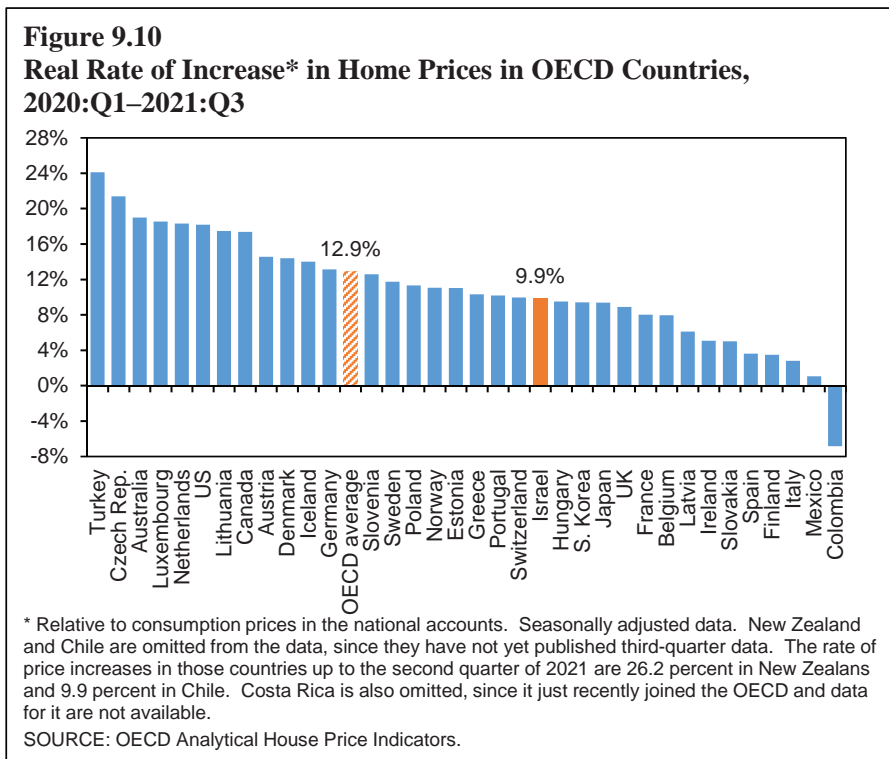
It therefore seems that the increase in demand by both investors and first-time home buyers is in line with the timing of the recent price increases. The increase in demand by these groups reflects the vast majority of the increase in aggregate demand (Figure 9.2), and it is therefore likely that it is the main factor in the increase in home prices.



(2) *The COVID-19 effect: Demand for large apartments and single-family houses*<sup>16</sup>

The COVID-19 crisis brought about an increase in home prices in many countries, not just in Israel. Figure 9.10 shows the rate of real increase (relative to consumption prices in the National Accounts) of home prices in the OECD from the first quarter of 2020, just prior to the crisis, to the third quarter of 2021. The Figure shows that the significant price increase in Israel is lower than the rate in most OECD countries. A common explanation for the increase in home prices around the world is that the accelerated transition to working from home and the need for social distancing increased demand for more spacious apartments and for single-family houses.<sup>17</sup>

Home prices increased in many countries, not just in Israel.



In order to assess the effect of this change in the public's preferences on housing prices, we estimated price indices for various types of dwelling: small apartments in residential buildings (up to 3 rooms), large apartments (4.5–6 rooms), garden apartments, and single-family houses. The estimation was made separately regarding

<sup>16</sup> Single-family houses refers in this chapter to detached, semidetached, and townhouses.

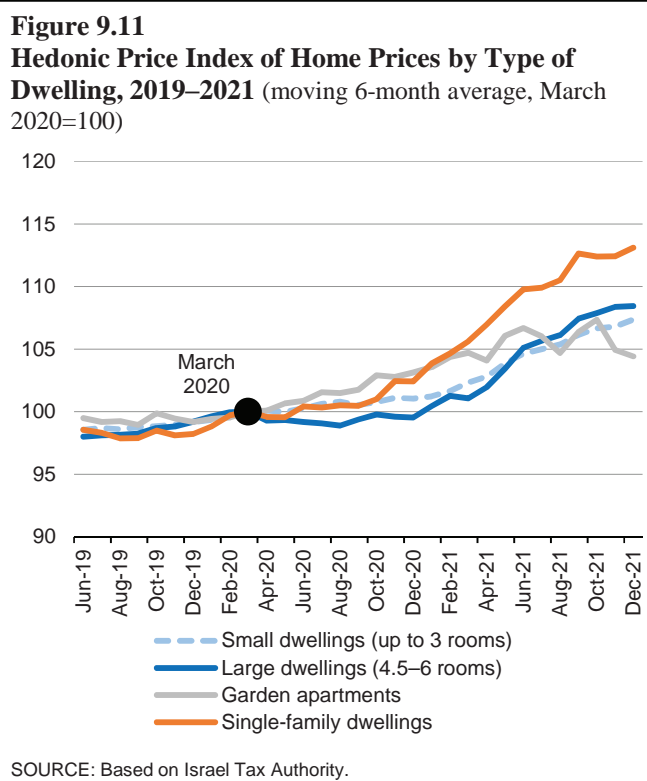
<sup>17</sup> A BIS report from June 2021 points to two main factors behind the global increase in home prices: (1) a change in the public's residential preferences to more spacious dwellings and single-family houses outside of cities, due to the pandemic and the transition to working from home; and (2) the decline in yields in the capital market. For an analysis of the effects of yields, see Section (4) below. For the BIS report, see Bank for International Settlements, *Annual Economic Report*, June 2021, Box 1A.

each dwelling type, and included the homes' characteristics (size, location, year of construction, etc.) and dummy variables for the date of transaction, similar to the Central Bureau of Statistics estimation method for the Index of Home Prices.

Figure 9.11 shows the price indices for the various dwelling types.<sup>18</sup> There are two points that are prominent in the Figure. First, since the beginning of the COVID-19 crisis (March 2020), the prices of single-family houses increased more sharply

than those of other dwelling types, and so did the prices of garden apartments, at least until mid-2021. This means that there actually is evidence of an increase in demand for more spacious dwellings.<sup>19</sup> Second, and more importantly for our discussion, is that the prices of small dwellings also increased markedly, and throughout the period the prices of small dwellings increased at a rate similar to those of large dwellings. If the main factor behind the price increases was an increase in demand for larger dwellings, we should have expected at least a more moderate increase in the prices of small dwellings.

These results show that it is not likely that the increase in demand for more spacious dwellings, due to the COVID-19 effect, is what led to the recent price increases. The prices of dwellings of all types increased, so the reason for the price increases must



Due to the COVID-19 crisis and the transition to working from home, the prices of single-family houses increased more sharply than those of other types. However, the prices of small dwellings also increased markedly, and their rate of increase was similar to that of large homes.

It is unlikely that the increase in demand for more spacious homes is what led to the recent price increases.

<sup>18</sup> The indices were calculated without weighting the inventory value, since we do not have data on the distribution of dwellings across the country by characteristics, although some assessment is possible regarding the large cities only. The measurement brought here is similar to the one in the calculation of the Central Bureau of Statistics Index of New Home Prices.

<sup>19</sup> In cities with more than 100,000 residents, not more than about 7 percent of housing units are single-family houses (based on the Central Bureau of Statistics Registry of Dwellings and Buildings, 2021). Since home prices increased markedly in such cities as well, despite the low percentage of single-family houses, it is not likely that the increase in the prices of single-family houses is a main factor in the general price increases.

be sought in a factor that affects all dwellings, and not in demand for dwellings with a certain characteristic.

*(3) Growth in the income and asset values of high-tech workers*

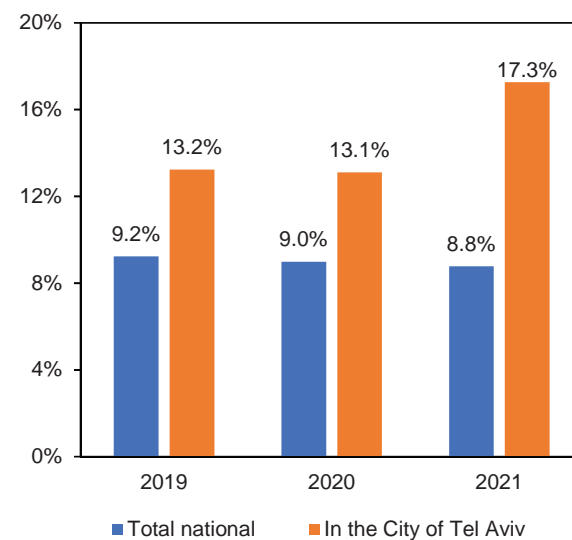
The COVID-19 crisis led to an increase in demand for the services of companies in the high-tech industry, which in turn led to an increase in demand for workers in the industry and an increase in their wages. In a number of cases, company values jumped, which led to a tremendous increase in the asset portfolios of workers who held shares or exercisable options of the companies in which they are employed. (For details, see Chapter 1.) We can therefore hypothesize that the wealth effect of those employed in the high-tech industry led to an increase in their demand for dwellings, and thereby to an increase in home prices.

In order to examine this hypothesis, Figure 9.12 presents an estimation of the rate of workers in the information and communications industry, which serves as an approximation of the high-tech industry, as a share of total home buyers in the past three years. The Figure shows that the national level of high-tech workers as a share of total home buyers did not increase, and even decreased slightly (the blue columns). However,

a similar examination of the rate in the city of Tel Aviv shows that in that city, the rate increased significantly in 2021 (the orange columns).<sup>20</sup> The rate of high-tech workers as a share of total home buyers increased by more than 4 percentage points in Tel Aviv, while home prices in Tel Aviv increased at a higher rate than in the rest of the country (Figure 9.13, and Figure 9.8). We qualify this by saying that the price increases in Tel Aviv began in 2020, prior to the increase in the rate of high-tech workers as a share of total home buyers. Obviously, the price increases in Tel Aviv led to an increase in the general index in accordance with its weight

High-tech employees accounted for a slightly smaller share of buyers, but their share in Tel Aviv increased.

**Figure 9.12**  
**Employees in the Information and Communications Industry as a Share of Total Home Buyers, 2019–2021**



SOURCE: Based on Israel Tax Authority.

<sup>20</sup> Most of the activity in the high-tech industry is concentrated in Tel Aviv. (See details in Chapter 1.)

in that index<sup>21</sup>, but home prices increased markedly in all districts in the country. The price increases in Tel Aviv may have also pushed home buyers to less expensive areas, which pushed prices up in the rest of the country, but the fact that the rate of price increase in the Tel Aviv *district* was similar to the general rate of price increases despite the sharp increases in the *city* of Tel Aviv hints that such a phenomenon was relatively limited.<sup>22</sup>

The effect of the peak in the high-tech industry was apparently limited to the city of Tel Aviv.

The findings show that it is not likely that the peak in the high-tech industry led to a broad increase in homes prices throughout the country, and that its impact was apparently mainly local—in the city of Tel Aviv. It should be noted that a similar examination regarding Gush Dan (excluding Tel Aviv) indicates a decline in the rate of high-tech workers as a share of total home buyers in 2021 (from an average of about 12.6 percent in 2019 and 2020 to 9.2 percent in 2021), which may reflect a transition of these buyers from Tel Aviv’s satellite cities to Tel Aviv itself.

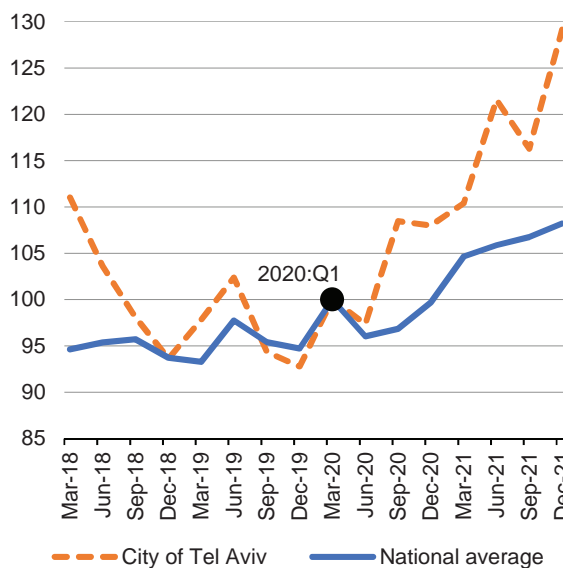
(4) *The effect of capital market yields*

At the beginning of the COVID-19 crisis, central banks around the world, including the Bank of Israel, engaged in monetary accommodation. (For more discussion, see Chapter 3.) Monetary policy has an effect on yields in the capital market, which in turn have an impact on prices in the housing market. Yields affect demand for homes among all buyer types—investors and those buying the dwelling for their own residential purposes. Investors strive for the maximum yield on their equity, so they compare the yield on the capital market to the yield they would receive from renting out their dwelling (the ratio of rent to the purchase price). Similarly, renters who

<sup>21</sup> In our assessment, about 15 percent (inventory value weight), based on the Registry of Dwellings and Buildings, 2021, and the average price of dwellings in Tel Aviv compared with the rest of the country.

<sup>22</sup> The Tel Aviv district includes Holon and Bat Yam in the south and Herzliya in the north, and is bounded by Highway 4 in the east.

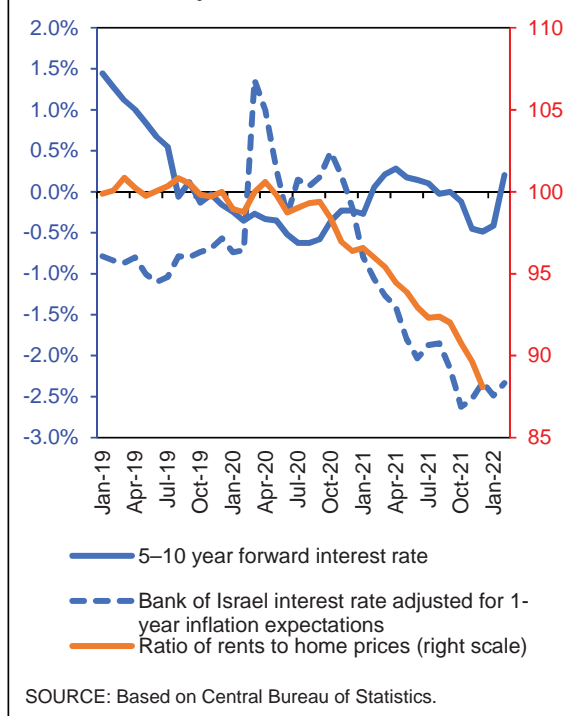
**Figure 9.13**  
Average Price of a 3.5–4 Room Dwelling in Tel Aviv, and National Average, 2018–2021  
(index: 2020:Q1=100)



SOURCE: Based on Central Bureau of Statistics.

Yields in the capital market have an effect on demand for homes by all purchaser types.

**Figure 9.14**  
**Real Yields from the Capital Market, and**  
**Ratio of Rents to Home Prices, January**  
**2019–February 2022**



are considering moving into their own home compare the rent they are paying to the yield they would lose on their equity in the capital market. In both cases, the lower yields in the capital market are, *ceteris paribus*, the more attractive purchasing a dwelling is.<sup>23</sup>

In contrast with the two previous factors that we examined, yields in the capital market have a broad impact on the housing market, so their decline may be what led to the increase in home prices. Yakhin and Gamrasani (2021)<sup>24</sup> found that in the short term, home prices (adjusted for the Consumer Price Index excluding housing) respond to real yields, both short-term and long-term (forward).

Figure 9.14 shows the development of real yields, the short-term interest rate, and the

5–10-year forward interest rate, in the past three years. The Figure shows that the forward yield declined slightly at the beginning of the crisis, but in general it remained stable during 2020, and the decline that it showed prior to the crisis was halted. In contrast, the short-term interest rate (the Bank of Israel interest rate adjusted for inflation expectations) increased sharply at the beginning of the crisis due to the decline of inflation expectations alongside the expectation that the low level of the Bank of Israel interest rate would be maintained. In the end, the estimation derived from the housing model is that the flattening of the yield curve made a slight contribution to

Research on the housing market in Israel shows that in the short term, home prices react to both short and long real yields.

In the past two years, the long (forward) real yield was relatively stable, while the short yield increased at the beginning of the crisis and then declined—in line with the development of inflation expectations. The estimate derived from the housing model is that yields contributed only slightly to the increase in home prices in 2021.

<sup>23</sup> It is understood that regarding buyers who take out a loan in order to finance the purchase, we must also take into account the cost of the mortgage, but the principle is the same. In this case, the relevant yield is the weighted average of the capital market yield and the mortgage interest rate, where the leverage rate serves as the weight. However, the mortgage interest rate is greatly affected by yields in the capital market, so its contribution to the explanation of developments in the housing market beyond the effect of the capital market yield is secondary. The weighted real mortgage interest rate declined by only about 0.3 percent in 2021 (Table 9.1). As such, if it had any effect on prices beyond the effect of capital market yields, it would have been minor.

<sup>24</sup> Y. Yakhin and I. Gamrasani (2021). “The Housing Market in Israel: Long-Run Equilibrium and Short-Run Dynamics”, Bank of Israel Research Department, Discussion Papers Series 2021.08.

the increase in home prices in 2021—an average of about 0.1 percent in real terms.<sup>25</sup> This means that yields in the capital market supporting an increase in prices that was similar to the inflation rate excluding housing (about 2.5 percent).

During 2021, with the exit from the crisis, the short-term yield declined sharply due to the increase in inflation expectations. It is therefore expected to continue supporting home prices in the short term.<sup>26</sup> However, since the increase in inflation was perceived by investors to be temporary, the decline in real yields was perceived in the same way. The real forward yield curve indicates an expectation of an increase in the short-term yield, so it is likely that the broad impact of its recent decline on demand for homes is relatively small. (For more discussion on the development of yields, see Chapter 3.)

In conclusion, our assessment is that yields in the capital market contributed this year to the nominal increase in home prices at a rate similar to that of inflation excluding housing. This is not a negligible rate, but it does not explain most of the increase in home prices.

## b. Supply-side factors

### *(1) Inventory and demographics*

In estimating a long-term model for the housing market, Yakhin and Gamrasani (2021) found that the shortage of dwellings is a main variable in the development of housing prices over time. In particular, they found that the shortage of dwellings contributed significantly to price increases in the past decade, but the shortage has narrowed in recent years, and its contribution to price increases has declined. However, at the beginning of the COVID-19 crisis, activity in the construction industry slowed, and concern over an extension of the slowdown may have contributed to the recent acceleration of prices.

In order to examine the impact of supply, Figure 9.15 shows the ratio of the adult population (aged 25 and over) to the inventory of homes, meaning the number of adult people per residential unit.<sup>27</sup> The inventory of homes increased consistently in recent years, at a rate higher than the population growth, and residential density declined. This outcome supports the assessment that the source of the price increases is on the

<sup>25</sup> The model shows that a decline of one percentage point in real yields, whether short or long (forward), leads to a real price increase of slightly more than 2 percent after one year. The model is estimated at an annual frequency. For yields during the year, we did not obtain a statistically significant effect, so that even if yields do have a more immediate effect, it is apparently secondary to the lagged effect.

<sup>26</sup> The increase in purchase tax on investors toward the end of the year offset at least part of the yield effect on this group of purchasers. However, the yields in the capital market also have an effect on demand for dwellings among other groups of purchasers.

<sup>27</sup> Data on the inventory of homes are taken from the Central Bureau of Statistics Registry of Dwellings and Buildings. The change in the inventory of homes is due to building completions, building demolitions, splitting of residential units, and conversion of uses. Population data rely on the permanent population in Israel, and do not include foreign workers or illegal residents.

The recent decline in short real yields was due to the increase in inflation expectations, and since the market perceived the rise in inflation as being temporary, it also expected the decline in real yields to be temporary.

The inventory of homes increased consistently in recent years, at a rate higher than the population growth.

demand side, as presented above.

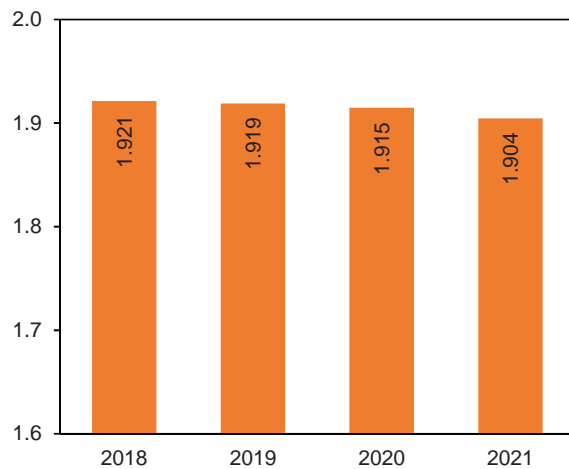
Yakhin and Gamrasani (2021) found that toward the end of their sample, in 2019, the shortage of dwellings declined greatly, and indeed, in 2018 home prices declined following years of prolonged increases. An analysis of the years 2020 and 2021 is more complex. In 2019 and 2020, there was a significant decline in land marketing and in residential construction tenders, and in 2021 there was a marked recovery in view of the economy's return to normal activity as COVID-19's effect on the economy subsided.

Our assessment is that the slowdown in building starts and in building completions in the first half of 2020, and the public's expectations of a future hit to supply together with the temporary positive shock to demand discussed above (the changes in purchase tax on investors and the changes in housing programs) contributed to the price increases. This effect should moderate in the coming years, after land marketing and the number of dwellings planned increased markedly in 2021.

Despite these findings, one can argue that even if the aggregate growth in inventory is in line with aggregate demographic developments, it is not necessarily in line with the geographic deployment of the composition of demand, so that the worsening shortage in high-demand areas is what led to the increase in prices. In order to confront this argument, Figure 9.16 shows each district's share of building starts in the past two years (January 2020 to December 2021) compared with its share of population prior to the period (at the end of 2019). The 45-degree line in the figure helps us distinguish whether construction in each district is in line with the relative size of the population in that district. The Figure shows that the rate of construction in high-demand areas (the Tel Aviv and Central districts) is higher than their share of the population. It therefore seems that the deployment of construction responded to the relevant demand at least in those areas.

The Southern district is also above the 45-degree line, which may indicate over-construction in the area. However, most building starts in the district (about 57 percent) are concentrated in the Ashkelon subdistrict, which is adjacent to the Central district,

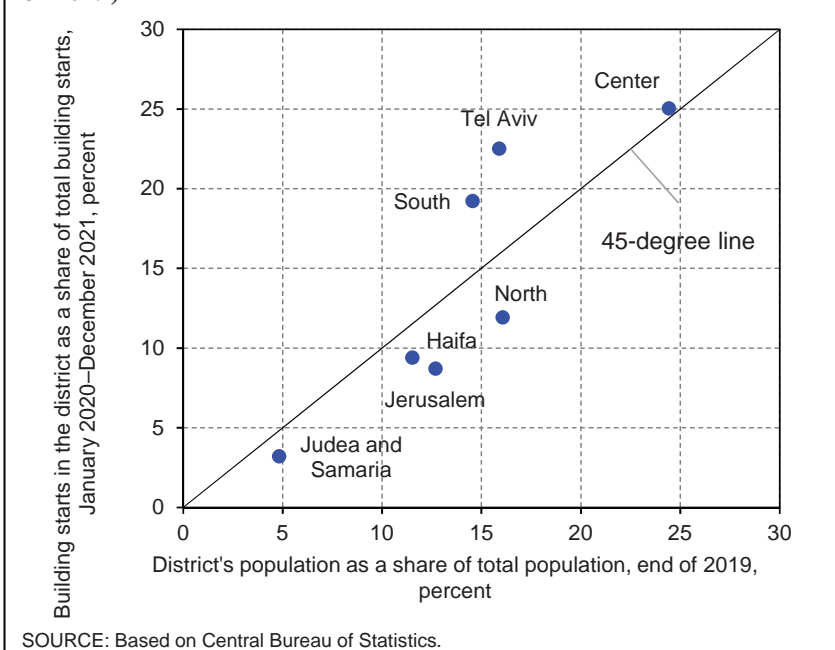
**Figure 9.15**  
**Adult Population Relative to the Inventory of Homes, People Aged 25+ per Housing Unit, Estimate for July, 2018–2021**



SOURCE: Based on Central Bureau of Statistics.

The geographic distribution of building starts is approximately in line with demand in the various districts.

**Figure 9.16**  
**Rate of Building Starts by District (January 2020–December 2021) Compared to the Rate of the Population in the District (end of 2019)**



although the population in that area in 2019 was just 42 percent of the population of the Southern district.<sup>28</sup> Moreover, an examination of the development of prices from just prior to the crisis until the end of 2021 shows that prices in the Southern district increased markedly, similar to the increase in the Tel Aviv district.<sup>29</sup> It therefore seems that construction in the district was answered by demand for homes.

It is difficult to attribute the recent price increases to a worsening of the shortage of homes.

In summation, the data do not show a distortion in directing construction to areas with no demand, and after the acceleration of building starts in the second half of 2021, it is difficult to attribute the recent increase in prices to a worsening of the shortage in dwellings this year. However, as stated, the slowdown in supply at the beginning of the exit from the crisis makes it difficult to identify its effect.

It should be emphasized that this finding does not take away from the importance of dealing with the supply side. The inelastic supply is what led to the creation of the shortage in the first place, and it took the market about a decade to raise the pace of construction from about 30,000 housing units per year to close to 60,000 (Figure 9.4). A prolonged slowdown in the pace of construction will lead to a renewal of the shortage, and with it to further upward pressure on prices.

<sup>28</sup> The Southern district stretches from Eilat in the south to Ashdod in the north. The Ashkelon subdistrict includes Ashdod, Ashkelon, and Kiryat Gat, as well as the area between them.

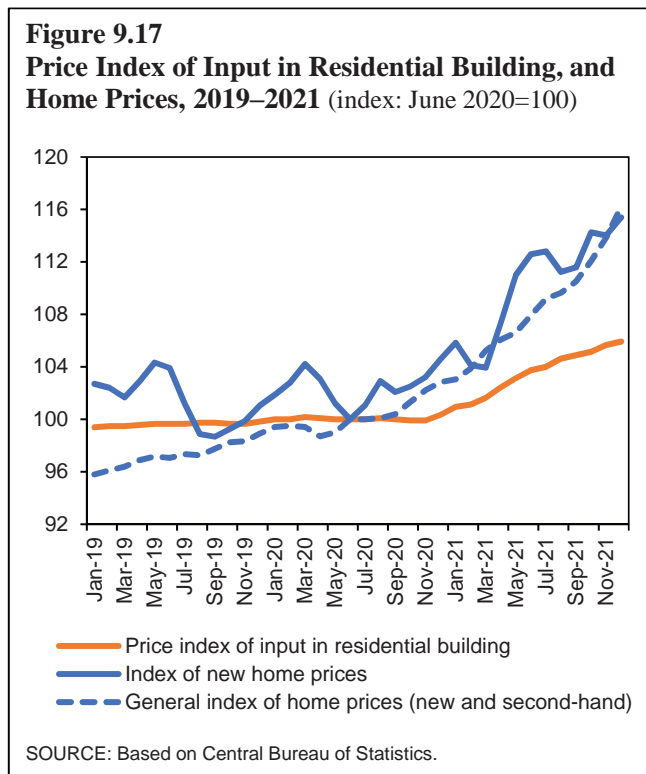
<sup>29</sup> Tel Aviv district includes Holon and Bat Yam in the south and Herzliya in the north, and is bounded by Highway 4 in the east. See Footnote 22.



*(2) Prices of residential construction inputs*

The prices of residential construction inputs increased greatly in 2021, mainly due to the increase in prices of raw materials as a result of global supply chain interruptions. The Index of Residential Construction Input Prices increased by 5.6 percent in 2021, and the index excluding labor wages skyrocketed by 9.4 percent.<sup>30</sup> The higher cost of inputs increases the cost of construction, thereby pushing the prices of new homes upward.<sup>31</sup> As a result of the substitution between new dwellings and second-hand dwellings, some of the price increase spills over to second-hand dwellings over time. It therefore may be that the source of the increase in home prices is the higher cost of construction inputs.

Figure 9.17 shows the Index of Construction Inputs alongside the Index of New Home Prices and the General Index of Home Prices. The Figure shows that the prices of all dwellings, both new and existing, began to increase before the prices of inputs, and that the rate of home price increases at the end of 2021 is more than double that of inputs. As such, even if input prices immediately impacted the prices of new homes, they would not be able to explain the timing of the increase in general prices, and certainly not its



Residential construction inputs became much more expensive in 2021, mainly due to the increase in prices of raw materials as a result of the global supply chain interruptions.

Construction input prices supported the increase in home prices this year, but it is difficult for them to explain the intensity of the price increases or the timing of the turn in the market in mid-2020.

<sup>30</sup> The Construction Inputs Price Index mainly includes materials and products (about 44 percent) and wages (about 43 percent). The other items are equipment and vehicle rental (about 10 percent) and general expenses (about 3 percent). Obviously, the cost of land is a significant part of the final cost of the dwelling, but it does not affect the cost of construction, and is therefore not included in this index.

<sup>31</sup> The transmission from the cost of construction to the cost of new dwellings is partial, according to the cost of construction's share in the final price. It should also be noted that when purchasing a dwelling that is still under construction, it is customary to index outstanding payments until the end of construction to the Residential Construction Inputs Price Index. This indexation obviously raises the cost of the transaction for the buyer in periods when the Index rises, but it does not have an impact on measuring home prices. The Index of Home Prices in a given month includes data on purchases in that month, and other payments in respect of indexation on purchases from previous months do not affect the measurement. The prices of residential construction inputs affect the Index of Home Prices through their effect on the price quoted in the purchase contract at the time of the transactions.

intensity. It should be noted that the increase in prices of all products in the economy this year, influenced by the global supply chain interruptions, was not expected.<sup>32</sup> As such, we cannot explain the increase in prices during the second half of 2020 as a response to expectations of higher prices for construction inputs.

In summation, the prices of construction inputs supported an increase in home prices this year, but they do not explain the intensity of that increase or the timing of the turnaround in the market in mid-2020.

### 3. CONCLUSIONS

The strong response of demand to the government's measures, or to expectations of such measures, is not new. For instance, the increase in prices slowed in 2014 with the announcement of the government's intention to cancel VAT ("Zero VAT") on new homes for eligible buyers, a program that did not come to fruition. In mid-2015, investors' purchases increased sharply prior to the increase in the purchase tax imposed on them. Measures to manage demand are effective in diverting demand from the rental market to the ownership market, since they divert demand to home ownership over time (by leading buyers to bring forward or delay purchases). However, such measures do not affect the basic demand for a place to live, whether in the form of a rented dwelling or an owned-home. Demand for a place to live is derived from the long-term development of demography and income, and it is doubtful whether measures to manage demand would have any effect on it.

The above assessment shows that the response of demand to changes in policy—reducing the tax on investors and the changes in the policy of subsidizing dwellings for eligible buyers—is, apparently, a significant factor in the increase of home prices that accelerated since the second half of 2020. The decline in real yields in the capital market and the increase in the prices of residential construction inputs also contributed to the increase in prices, and will apparently continue to support prices at least in the short term. However, they cannot explain the intensity of the price increases or the timing of their acceleration. Beyond that, the slowdown in activity in the industry at the beginning of the COVID-19 crisis may have created expectations of price increases, which were then translated to actual increases.

Demand management measures introduce volatility and uncertainty to the housing market, due to their short-term effectiveness. The uncertainty has an impact on supply planning, which in any case reacts slowly. Taxation in the housing market must be based on long-term considerations and the prevention of regulatory discrimination between different types of assets, and frequent changes to it must be avoided. In Israel, about two-thirds of households own their home, and the decisive majority of the rest rent their homes on the private market. These rates are similar to data from

<sup>32</sup> One-year inflation expectations derived from the capital market and those of professional forecasters, at the end of 2020, were around 0.3–0.4 percent. They increased sharply only after the supply chain interruptions became an issue.

Measures to manage demand are diverting demand from the rental market to the home ownership market, but are not affecting the general demand for housing.

Demand's response to the changes in policy—reducing the tax on investors and changes in housing subsidies—is a significant factor supporting the recent increases in home prices.

Taxation in the housing market should be based on long-term considerations, and frequent changes to it should be avoided.

the other OECD countries. In order to ensure a deep and functioning rental market, investors—who purchase dwellings in parallel with the growth of the economy—are needed. As such, measures aiming to push investors out of the market are not desirable. Rather, measures to deepen the long-term rental market, which serves as a better alternative to home ownership, are called for. The key to lowering rental prices and improving the quality of rented dwellings is in growth of the stock of dwellings in the economy—meaning supply.

In our assessment, the source of the problem in the housing market was, and remains, supply. The supply of dwellings is inelastic not only in the short term, but also in the long term (Yakhin and Gamrasani, 2021). As a result, various shocks in the housing market are reflected first of all in price changes, while the quantity—meaning construction—responds slowly. Government policy must act to make supply more structurally elastic, and not just to increase it through temporary measures such as the VATMAL. Making supply more elastic will lead to construction that is more in line with the needs of the economy in terms of location, time, and characteristics of the dwelling, and the key to making it more elastic is in shortening the planning and construction processes, and budgeting for and accelerating peripheral infrastructure investment.

Government policy must act to make supply more structurally elastic, and not just to increase it through temporary measures.