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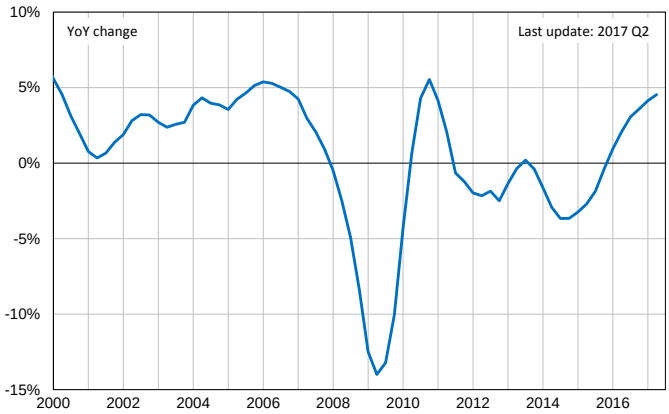
Will the recovery in French residential investment last?

- Residential investment by French households grew strongly from 2000 to 2007, before dropping sharply during the 2008-2009 crisis. After a brief rebound in 2010-2011, it returned to a downward trend. By 2015, it had fallen back to its early 2000s level. This negative performance explains a large share of the GDP growth gap between France and Germany from 2008 to 2015.
- The 2000-2007 expansion mainly reflected the rise in household income. Rising housing prices also fuelled home purchases, with home-buyers expecting capital gains. The steep fall in investment during the crisis was accompanied by a decline in housing prices amid high economic uncertainty and substantial job losses. The 2010-2011 rebound was linked to the improvement in these fundamentals and the support provided by the significant fall in interest rates, which eased the access to credit. The 2012-2015 decline was partly due to lower household income growth, while declining housing prices may have helped to keep potential investors on the sidelines.
- The regulatory framework and public policies to stimulate home-buying also influence investment decisions. In the short term, for example, measures to support housing demand trigger expectation effects.
- Household investment has regained momentum in France since mid-2015. The upturn is expected to continue in 2017 and 2018, given the positive trend in building permits and housing starts, rising housing prices and the improving macroeconomic environment.

Household investment in France



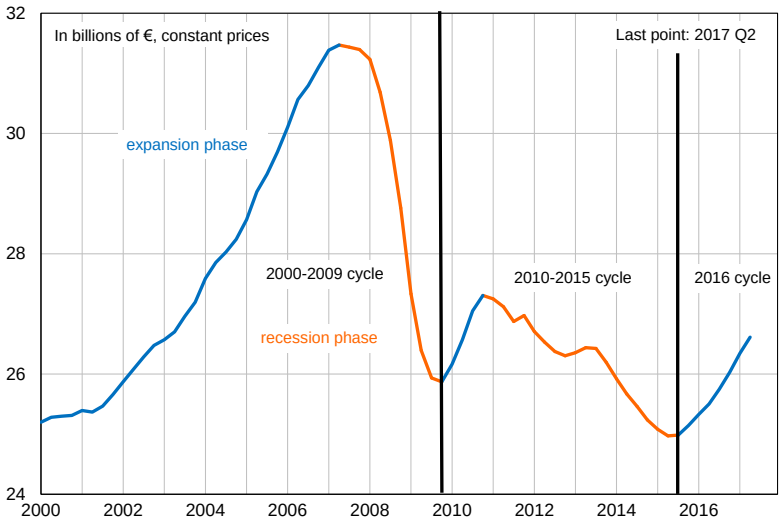
Source: INSEE (French national statistical institute); DG Trésor calculations.

MINISTÈRE DE L'ÉCONOMIE
ET DES FINANCES

1. Residential investment by French households has fallen since the crisis

Residential investment by French households (see Box 1) is subject to relatively wide cyclical fluctuations. We can identify **three major cycles** between 2000 and 2016 (see Chart 1). First, household investment rose rapidly between 2000 and 2007, before dropping abruptly during the 2008-2009 crisis. The second cycle, in 2010-2015, was less pronounced, with a clear but brief rebound in 2010-2011 followed by a gradual decline in 2012-2015. The third cycle began in mid-2015 with an upswing that is still ongoing.

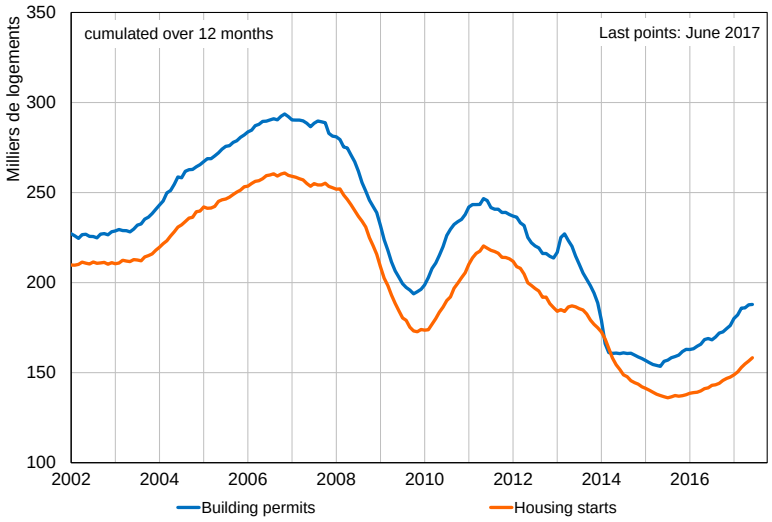
Chart 1: Investment by French households



Source: INSEE, DG Trésor calculations.

The cyclical changes in household investment basically reflect the variations in **new residential construction**, with an average lag of a few quarters. In the period studied, **building permits** and **housing starts** started to decline from mid-2011 (see Chart 2). By mid-2015, they had reached 150,000 and 140,000 per year respectively, i.e., roughly 20% *below* their crisis troughs. Housing starts have since started rising again.

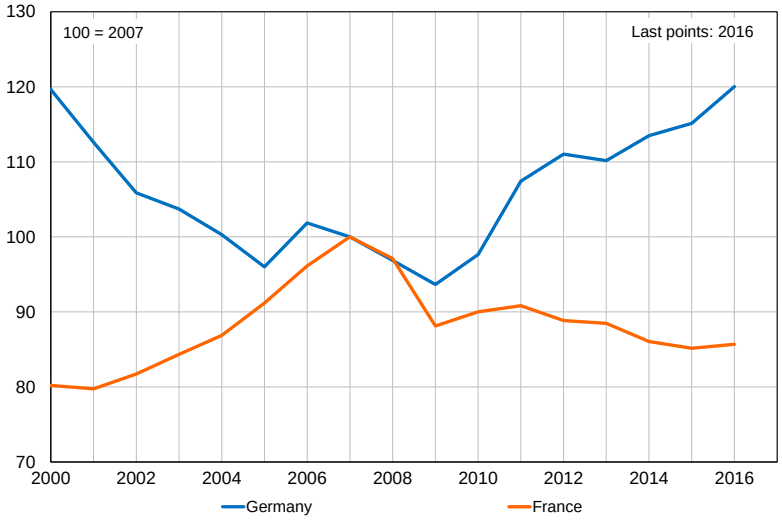
Chart 2: Building permits and housing starts



Source: SDES (see Box 1); DG Trésor calculations.

Residential investment is one of the factors contributing to the GDP growth cycle. Before the 2008-2009 crisis, it had supported French growth by an average of 0.2 point per year between 2000 and 2007. **Its decline then dragged down GDP growth by an average 0.1-0.2 point per year in 2008-2015.** During the same period, in Germany, residential construction investment expenditures supported GDP growth by 0.1 point on average each year (see Chart 3). This differential accounts for about two-thirds of the GDP growth gap in 2008-2015 between **France** (average annual GDP growth of 0.5%) and **Germany** (0.9%).

Chart 3: Residential construction in France and Germany, in real terms



Source : Eurostat, DG Trésor calculations.

How to read this chart: There are no figures available for total German household investment in real terms. The chart compares residential construction investment in the two countries, an aggregate with a very similar scope of coverage.

Box 1: **Household investment in French national accounts**

In the French national accounts published by INSEE (the national statistical institute), nominal household investment was €111.6 bn in 2016, or approximately 5% of GDP. The aggregate includes:

- **construction of new dwellings** (flats and houses), representing slightly more than one-third of household investment. Because of its large fluctuations, this component accounts for over two-thirds of the changes in household investment. INSEE uses figures of **housing starts** published by the Statistical Data and Studies Department (SDES) of the Ministry for Ecological and Inclusive Transition (MTES) to measure the construction of new dwellings. Housing starts for the past two years are taken into account, to reflect the average length of the construction process.
- **maintenance and improvement expenditures** on existing dwellings, representing approximately one-half of household investment. Owing to their relative stability over time, their contribution to cyclical movements in household investment is limited. INSEE estimates them from an activity indicator published by the Confederation of Building Trades and Small Enterprises (CAPEB).
- **expenses relating to acquisition of new and second-hand dwellings** (such as solicitor's and architect's fees), accounting for about 20%. Their changes track those of **housing transactions** published by the General Council on the Environment and Sustainable Development (CGEDD).

Table 1: Breakdown of household investment expenditures

		Household investment				
		Amount in 2016 (in billions of €, current prices)	Ratio in household investment	Ratio in quarterly fluctuations	Indicator	Source
Activity/ Products	New housing	86.8	34%	67%	Building starts of past two years	SDES
	Renovation/improvement		44%	11%	Activity volumes	CAPEB
	Expenses related to housing purchases	23.9	21%	21%	Housing transactions	CGEDD
	Civil engineering	0.9	1%	1%		

Source: INSEE, DG Trésor calculations.

2. In the medium term, household investment is mainly linked to economic and financial factors

2.1 In theory, the change in household investment depends on economic, financial, demographic and regulatory variables

A household's decision to purchase a new home depends, in the first place, on its **current income** (gross disposable income, in nominal or real terms). Investment decisions are also shaped by **income expectations**. When households are uncertain about their future income or anticipate a decline, they tend to cancel or defer their investment plans. This uncertainty can be captured by variables strongly correlated with the economic cycle, such as **employment**, the **unemployment rate** or **consumer confidence**.

Moreover, the great majority of recent acquisitions (80%)—whether of new or second-hand dwellings—are debt-financed. **Financing conditions** thus play a major role. Given current practices regarding housing loans, **mortgage rates and length** largely determine the borrowing capacity of would-be homebuyers.

Housing prices also influence investment decisions in two opposite ways. A rise in prices, by definition, raises the cost of buying a new dwelling and may therefore reduce demand. At the same time, it can increase the incentive to invest if households expect prices to keep rising. As a result, households may prefer to invest sooner, before prices become too high. Additionally, the **potential for realizing capital gains** in the future may encourage households to invest.

These different economic and financial variables can be summed up as a **housing purchasing capacity**, i.e. the biggest property that a household can buy given its income, housing prices and current financing conditions (interest rates and loan length).

At a more aggregate level, housing demand also depends on **demographic changes**. It is linked, for example, to the change in the **number of households**, which reflects both total population growth and the changes in household size, such as those caused by children moving out. Housing demand may also be influenced by changes in the **demographic structure**—specifically, in age groups with the greatest propensity to purchase a dwelling. According to INSEE[1], the change in housing demand is thus partly explained by the variation in the **30-59 age group** as a percentage of the total population, while the Banque de France[2] singles out the **growth rate of the 20-49 age group**.

Regulations and financial measures can also influence investment decisions. They fall into three main categories: standards, which impact home-buying costs (particularly the standards to limit primary energy consumption in new buildings), financial or tax measures to support housing demand (such as zero-interest-rate loans and rental property investment subsidies) and measures aimed at increasing the housing supply (such as the easing of urban-planning regulations and financial incentives to municipalities that make land available for construction).

[1] Faubert, V., Monnet, É. and Sutter, C. (June 2015), "Despite the recovery of purchasing power, housing construction should keep falling in 2015", *Conjoncture in France*, INSEE.
[2] Monnet, É. and Wolf, C. (2017), "La démographie détermine-t-elle le cycle immobilier?", *Rue de la Banque*, no. 41.

Box 2: **Measures to support housing supply and demand**

1. Financial and tax measures to support housing demand

Measures to stimulate demand for new dwellings by households or investors fall into two main categories:

- The **zero-interest-rate loan (Prêt à Taux Zéro: PTZ)** is a government-subsidised supplementary loan at 0% interest with no fees. It is granted, under certain conditions, to first-time buyers of a main residence. Since 1 January 2016, the PTZ can be used to finance up to 40% of a purchase of a new dwelling. It can also apply to the purchase of a second-hand dwelling provided the buyer undertakes renovation work totalling at least 25% of the transaction cost. Repayments can be delayed for from five to fifteen years. The PTZ is means-tested. Income ceilings are defined on the basis of household composition and housing-policy zoning that divides the French territory into zones ranked by market tensions (from the highest-tension to the lowest-tension zone: A bis, A, B1, B2 and C[3]).
- **Rental property investment subsidies** offer a tax benefit for the purchase of a new dwelling in exchange for a rental commitment. The "Pinel Plan", introduced in 2014, grants tax relief against an obligation to lease the dwelling at a below-market rent (called a "mid-level" rent) and provided the income of the tenant household does not exceed a set limit. These restrictions are defined in accordance with the housing-policy zoning. The tax reduction is 12%, 18% or 21% of the transaction amount for a rental commitment of 6, 9 or 12 years respectively. The investment cannot exceed €300,000 and a price of €5,500 per square metre. The property can be rented to ascendants and descendants. The "Pinel Plan" is targeted geographically to cover areas with the greatest dwelling needs. It focuses on zones A bis, A and B1, as well as certain B2 zones for which regional prefects have granted exemptions.

These measures have often been modified over time. Since 2008, four rental property investment subsidies have been enacted, with changes in eligibility conditions (for investment in new housing, "Robien Recentré" from 1 September 2006 to 31 December 2009, "Borloo Neuf" and "Borloo Populaire" from 1 September 2006 to 31 December 2009, "Scellier" from 1 January 2009 to 31 December 2012, "Duflot" from 1 January 2013 to 31 August 2014, and "Pinel" since 1 September 2014). The PTZ has been modified six times, with changes to the loan ceiling, means testing, and eligibility for new or old dwellings with or without renovation work.

These incentive measures aim to stimulate construction by increasing household demand. Their impact may be amplified in the short term by **expectation effects**, for some households eligible for these public policies were approaching a financial position that would have enabled them to carry out the investment without assistance. However, before finalising the investment, they would have had to wait until they had obtained the required capital. Accordingly, a proportion of housing constructions are in fact investments made ahead of time. In other words, they represent a rise in current investment and a decrease in future investment. These measures may also produce **"deadweight loss" effects**, as some beneficiaries are already in the process of buying a home. These dwellings would therefore have been built today even without the incentives. For the PTZ, Gobillon and Le Blanc (2005)[4] estimate that the deadweight loss effect concerns 85% of beneficiaries.

[3] Zone A bis includes Paris and 76 municipalities of the Yvelines, Hauts-de-Seine, Seine-Saint-Denis, Val-de-Marne and Val-d'Oise *départements*; zone A includes the Paris agglomeration (of which zone A bis), the French Riviera (Côte-d'Azur), the French part of the Geneva agglomeration and some agglomerations or municipalities where rents and housing prices are very high; zone B1 comprises some large agglomerations where rents and housing prices are high, a portion of the outer ring of Paris suburbs not located in zone A bis or A, a few expensive cities, and the overseas *départements*; zone B2 includes the central cities of certain large agglomerations, the outer ring of Paris suburbs not located in zones A bis, A and B1, certain municipalities where rents and housing prices are relatively high, and Corsican municipalities not located in zones A or B1; zone C comprises the rest of the French territory.

[4] Gobillon, L. and Le Blanc, D. (2005), "Quelques effets économiques du prêt à taux zéro", *Économie et statistique*, no. 381-382, pp. 63-89.

The common feature of these measures is to stimulate demand for housing and land for construction. In areas subject to market tensions, however, the limited supply of land makes it impossible to meet total demand for new housing. More generally, Caldera and Johansson (2011) show that the price elasticity of housing supply in France is one of the lowest among OECD countries[5]. As a result, the increase in new housing demand entailed by demand-support measures will partly translate into higher prices. Bono and Trannoy (2012)[6], for example, find that the "Scellier plan" had an inflationary impact in the French regions with the greatest market tensions, particularly around the Mediterranean. **To be efficient, therefore, these demand-support policies must be accompanied by measures to stimulate land supply, most notably in areas with market tensions.**

2. Measures to support housing supply

Several recent changes in urban-planning regulations aim to liberalise land and housing supply. They include: transfer of responsibility for local urban planning (Plan Local d'Urbanisme: PLU) from the municipal to the intermunicipal level, which is more relevant for defining land-use strategy under the urban-planning reform act known as the Loi ALUR (for Accès au Logement et un Urbanisme Rénové); extension from two to three years of the validity of building permits in 2014; and implementation of exemptions to certain PLU rules in areas subject to market tensions (to allow additional elevation of buildings or the conversion of offices into dwellings).

Subsidies to mayors who build housing were also introduced in 2015 in order to encourage local elected representatives—traditionally in charge of land-use strategy through the preparation of the PLU and the issuance of building permits—to implement a land-use and construction liberalisation policy. The subsidy is approximately €2,000 per dwelling built if the municipality exceeds an annual trend growth rate of 1% in the number of main residences. The subsidy has been paid to municipalities since H2 2015 on the basis of number of permits issued in H1. The programme is limited to areas subject to market tensions (zones A bis, A and B1). Payouts totalled €34 m in H2 2015 (based on an H1 2015 figure of 32,000 dwellings, of which 16,000 exceeded what is regarded as the growth rate) and €45 m in H1 2016.

2.2 In practice, households' investment decisions depend mainly on their income and on housing price movements

We model household investment for 1990-2014 (see Box 3) taking into account the variables discussed earlier:

- **in the long term**, investment expenditures by households depend, as does their consumption, on changes in their real income (purchasing power).
- **in the short term**, economic uncertainty over future income is captured through a variable that summarises labour-market conditions: **job creation**. **Housing price movements** are also a determinant of household investment decisions. The estimated link between the two variables is positive, meaning that a rise in housing prices increases the incentive for households to invest. The reason is that households will tend to invest earlier than planned, before prices become too high (and, in some cases, with a view to realising capital gains in the future).

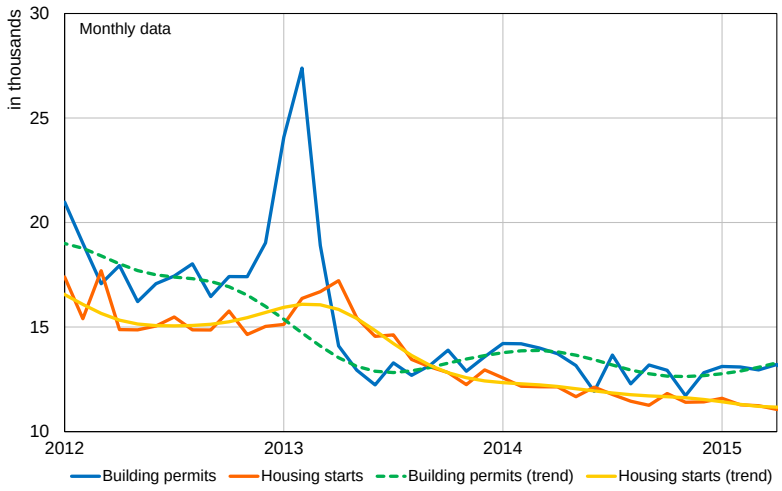
In our model, the variation in the **interest rate on housing loans** partly captures financing conditions, including financial support provided by the zero-interest-rate loan (**PTZ**). We use the average interest rate published by the Banque de France, which is calculated on the basis of total new housing loans, including subsidised loans.

[5] Caldera Sanchez, A. and Johansson, A. (2011), "The price responsiveness of housing supply in OECD countries", OECD Economics Department Working Papers, no. 837. The authors find housing supply to be fairly responsive to prices in North America and some Nordic countries (Sweden and Denmark), weakly responsive to prices in Switzerland and the Netherlands, and actually rigid in Austria, Italy, Belgium and France. Four other countries—Ireland, Australia, Norway and Spain—are in an intermediate position.

[6] Bono, P.H. and Trannoy, A. (2012), "Évaluation de l'impact du dispositif Scellier sur les prix fonciers", AMSE Document de travail (working paper).

By contrast, our model does not directly incorporate **rental property investment subsidies**[7], whose impact is mostly visible in the short term, especially due to expectation effects (see Box 2). Lastly, the **RT_{2012}** variable (for "*réglementation thermique*", i.e. "thermal regulation") captures the effect of the introduction on 1 January 2013 of new energy consumption standards for new buildings, which have increased construction costs. By anticipation, the number of building permits rose sharply in late 2012 and early 2013, before falling even more abruptly in March-April 2013 (see Chart 4), with a lagged effect on household investment in 2013-2014 (see Box 1).

Chart 4: Building permits and housing starts in 2012-15

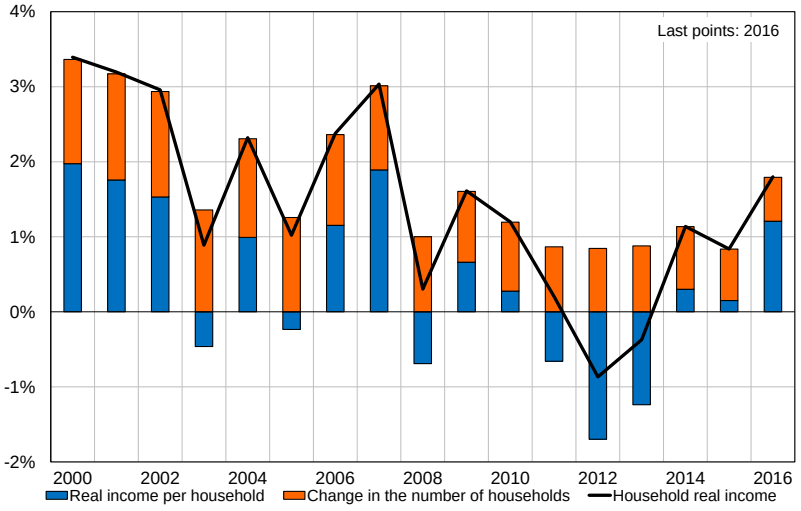


Source: SDES (see Box 1), DG Trésor calculations.

We also tested a **housing purchasing capacity** variable (see above) in the model. However, it does not seem more significant than real income or interest rates taken separately. We therefore decided to include these two variables individually in order to identify their respective contributions.

Demographics are partly captured by the **household real income** variable, whose change depends, by construction, on the changes in the **number of households** and in **real income per household** (see Chart 5). But our model does not explicitly include changes in **demographic structure**. While the **share of the 30-59 age group** in the total population seems correlated with household investment since the mid-1990s, the link was not visible in the 1980s (see Chart 6).

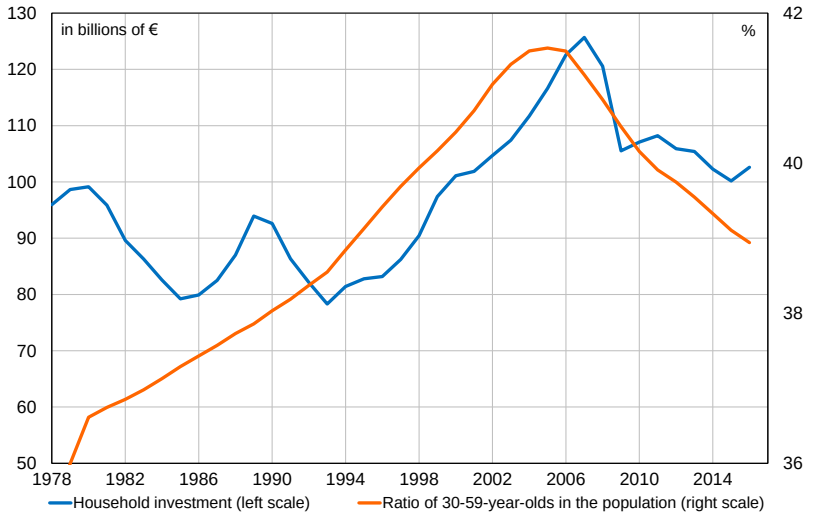
Chat 5: Breakdown of household real income



Source: INSEE, DG Trésor calculations.

[7] We have tested some series of tax benefits based on the official annual "construction accounts", but their inclusion was not conclusive.

Chart 6: Household investment and share of 30-59s in total population



Source: INSEE, DG Trésor calculations.

Box 3 : **Modelling household investment in France**

Real quarterly household investment (*Imen*) as defined in the national accounts (see Box 1) is modelled with an error-correction model, estimated in two steps for the period Q1 1990 - Q4 2014, where *PA* is **household real disposable income**, *pximmo* are **nominal prices of second-hand dwellings** (source: INSEE Notaires), *txi* are **interest rates on housing loans** (source: Banque de France), *emploi* the **level of total employment (private and public sectors)** and RT_{2012} a variable to model the effects of the **introduction of the 2012 Thermal Regulation** (see above). *Student's T* values are in parentheses under the coefficients. *Adjusted* R^2 is 72%.

$$\Delta \ln \text{Imen}_t = \underset{(-4,18)}{-0,05}\left(\ln \text{Imen}_{t-1} - 2,66 - 0,94 \ln PA_{t-1}\right) + \underset{(3,15)}{0,30}\,\Delta \ln \text{Imen}_{t-1} + \underset{(1,52)}{0,01} RT_{2012}$$

$$+\underset{(3,50)}{1,60}\,\Delta \ln emploi_t + \underset{(2,22)}{0,26}\,\Delta \ln PA_{t-1} + \underset{(4,50)}{0,33}\,\Delta \ln pximmo_{t-1} \underset{(-4,11)}{-1,50}\,\Delta txi_{t-2} + \varepsilon_t$$

Chart 7: Contributions to change in household investment

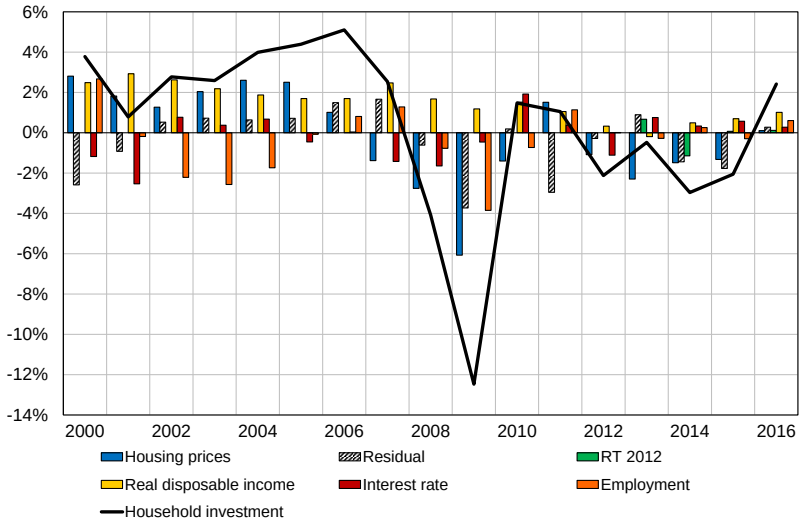


Table 2: Contributions of variables to change in household investment

	2000-2007	2008-2009	2010-2011	2012-2015
Housing prices	1,6 pt	-4,4 pt	0,1 pt	-1,5 pt
Real disposable income	2,2 pt	1,4 pt	1,3 pt	0,3 pt
Employment	-0,2 pt	-2,3 pt	0,2 pt	-0,1 pt
Interest rates	-0,5 pt	-1,0 pt	1,2 pt	0,1 pt
RT 2012				-0,1 pt
Residual*	0,3 pt	-2,2 pt	-1,4 pt	-0,6 pt
Household investment	3.2%	-8.3%	1.3%	-1.9%

How to read this chart: Between 2000 and 2007, household investment grew by an average 3.2% per year. In this period, real income made an average positive contribution of 2.2 points per year to the change in household investment, whereas interest rates made a negative contribution of 0.5 points.

*The contribution of the residual to the change in household investment is negative for 2000-2015 (-0.5 points) but zero for the whole estimation period (1990-2014).

Table 3: Elasticities or semi-elasticities of household investment relative to its determinants

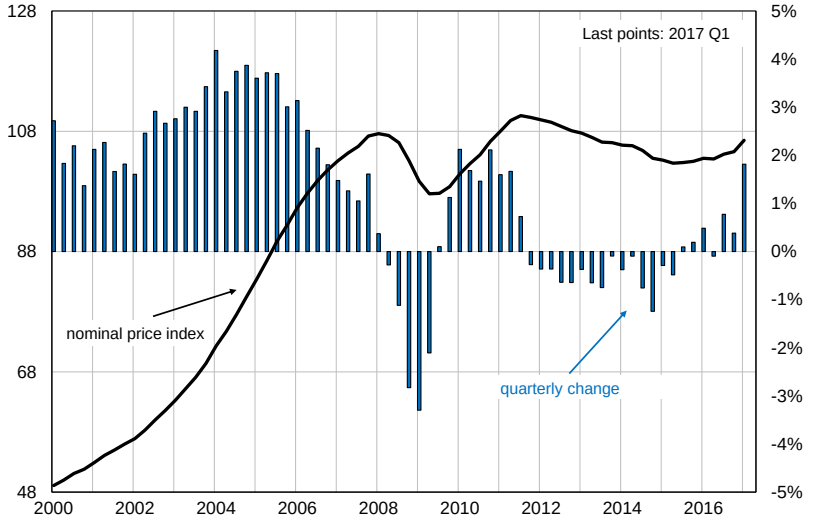
	t	1 year	2 years	5 years	long term
Real gross disposable income (+1 %)	0.0	0.5	0.6	0.8	0.9
Housing prices (+1 %)	0.0	0.4	0.3	0.1	0.0
Interest rates (+100 pb)	0.0	-1.9	-1.5	-0.5	0.0
Employment (+100 000)	0.6	0.7	0.5	0.2	0.0

How to read this chart: A 1% increase in real disposable income (i.e., purchasing power) raises household investment by 0.5% in a year and 0.8% in five years. Real income is the only variable with a long-term effect. By contrast, housing prices, interest rates and employment have only short- and medium-term effects. The effect of prices and interest rates is not instantaneous but lagged by one and two quarters respectively.

3. The fall in household investment in 2012-2015 is essentially due to less favourable macroeconomic conditions and declining housing prices

The contraction in household investment in 2012-2015 is primarily due to a downtrend in **housing prices**, which shed an annual average of 1.6% over the period (see Chart 8)—apparently prompting would-be investors to stay on the sidelines.

Chart 8: Nominal price index for second-hand housing - metropolitan France

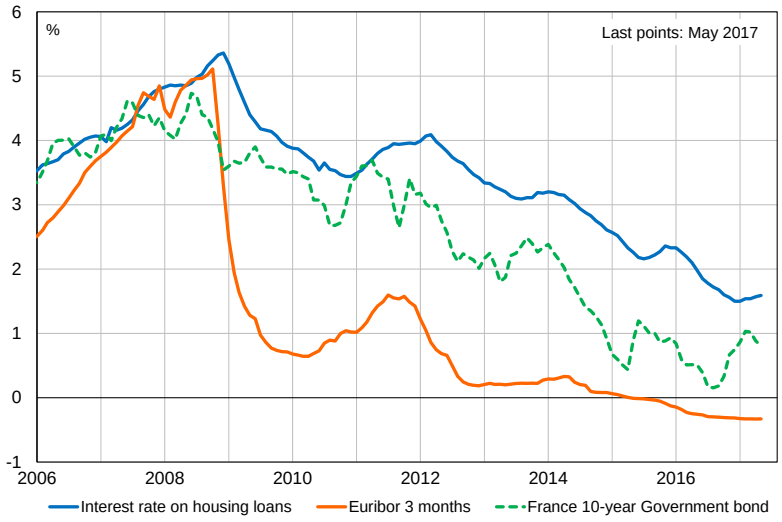


Source: INSEE Notaires, DG Trésor calculations.

Macroeconomic conditions were also less favourable in 2012-2015. **Household real income** (see Chart 5) grew by a mere 0.2% per year on average during the period, and even declined by 0.9% and 0.4% in 2012 and 2013 respectively.

While **borrowing conditions** continued to sustain household investment in 2012-2015, their support was weaker than in 2010-2011. This was mainly due to the upturn in **interest rates on new housing loans** in 2011 (see Chart 9)—with rates having a lagged effect in our model—before their renewed decline from 2012 on.

Chart 9: Interest rates on new housing loans



Source: Banque de France, DG Trésor calculations.

4. Household investment recovered in 2016 and the upturn should persist in the medium term

4.1 Leading housing indicators are strongly positive, pointing to a continued recovery in household investment

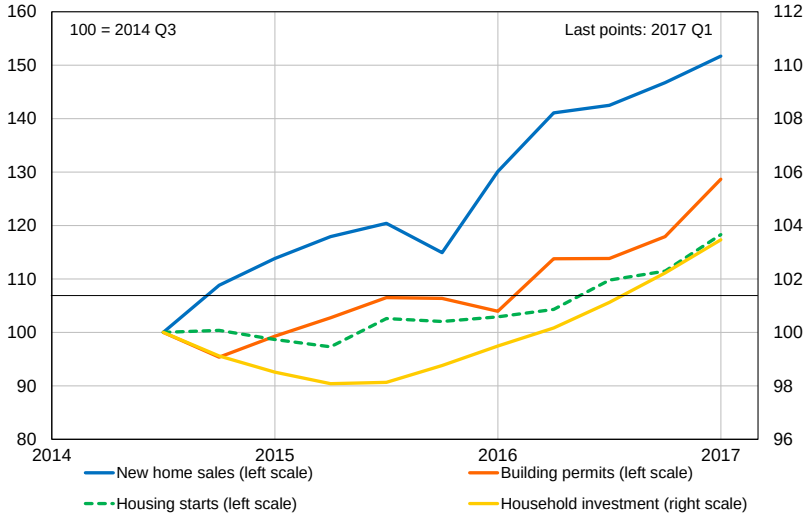
Household investment rose by 2.4% in 2016, its first increase since 2011. The rebound was expected, given the **rise in new home sales** from mid-2014 on (see Chart 10). The purchase of a new dwelling often generates, upstream, an **order** with a builder of single-family homes, who applies for a **building permit** with the local authority within an average of three to four months. Construction typically starts three to six months after the issuance of the permit, which is valid for three years. The **investment expenditures** are recorded in the national accounts as the work stages are completed, on average over a period of two years.

The robust uptrend in new housing starts points to a continued rebound in household investment in 2017. New home sales rose by 19.2% in 2016, returning to levels close to those reached in 2011 (see Chart 11). Buoyant sales should provide further stimulus to **building permits** and **new housing starts**: both were growing rapidly in early 2017, up to 13.2% and 15.5% respectively in March-May from the same year-earlier period.

Overall, **household investment** should return to a strong growth path in the medium term[8]. On an annual basis, it is expected to accelerate from 2.4% in 2016 to 3.5% in 2017, building on a positive carryover of 2.3% at the end of Q1. A further increase of 3.6% is forecast for 2018. **Building permits** for new houses should thus approach their 2010-2011 levels.

[8] 2017-2020 Stability Programme, April 2017.

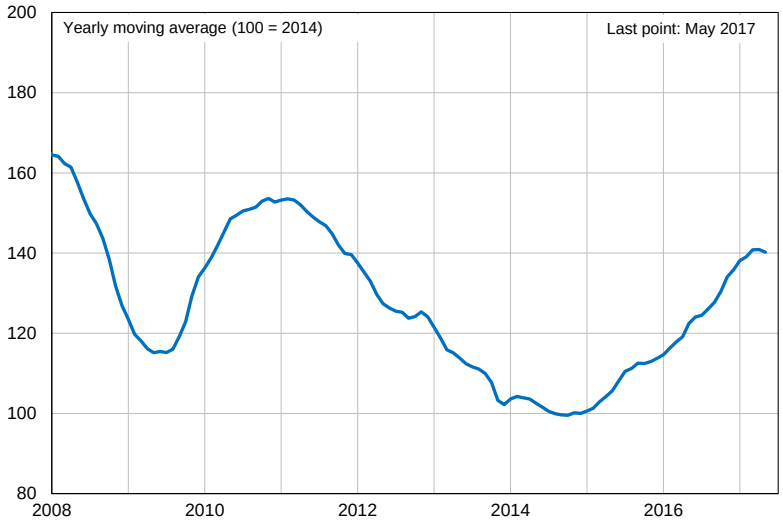
Chart 10: Construction cycle: new houses



Sources: Fédération Française du Bâtiment (FFB), SDES, INSEE; DG Trésor calculations.

How to read this chart: Sales of new houses rose in Q4 2014, followed by increases in building permits for new houses in Q1 2015, housing starts from Q3 2015 on, and household investment from Q4 2015 on.

Chart 11: New home sales (Markemétron index)



Source: FFB, DG Trésor calculations.

4.2 The uptrend in residential investment reflects the brighter economic environment, while financing conditions remain favourable

The household investment recovery is consistent with the changes in its fundamentals (see Box 3):

- **Household real income** has gained momentum (see Chart 5), accelerating sharply from 0.8% in 2015 to 1.8% in 2016.
- **Employment** figures are also brighter. Nearly 200,000 jobs were created in 2016, the best performance since 2007. The uptrend, fuelled by the economic recovery, is also helped by active pro-employment policies. Further gains are expected in 2017.
- **Housing prices** are rising again. They increased by 1.0% in 2016—their first gain since 2011—and are accelerating on a year-on-year basis, from 1.6% in Q4 2016 to 2.9% in Q1 2017.

Meanwhile, **financing conditions** remain favourable for household investment decisions. **Interest rates on housing loans** have been trending down again since February 2016 (see Chart 9), reaching a low in December 2016 at 1.50% for fixed-interest loans. This should provide continued stimulus to investment expenditures in 2017, given the transmission lags. By contrast, **the nearly 50-bps rise in long-term rates** between August 2016 and June 2017 is starting to impact rates on housing loans, which averaged 1.57% in April 2017. **This rise in rates on housing loans could slow household investment**

by one point in 2018, given the transmission lag and assuming long-term rates remain stable after Q2 2017.

The combination of measures to support housing demand and supply is also helping to sustain this dynamic. On the supply side, the government has **eased urban-planning regulations** and **introduced financial subsidies to mayors who initiate housing constructions in their municipalities**. On the demand side, the number of zero-interest-rate loans (**PTZs**) granted for new housing rose from 55,554 in 2015 to 88,598 in 2016, and the "**Pinel Plan"** may have supported the market in the short term. According to the Housing Developers' Federation (Fédération des Promoteurs Immobiliers - FPI), new homes reservations rose by 22.0% in 2016.

Given the current strength of demand, which has been supported by PTZs and rental property investment subsidies, additional measures should be introduced on the supply side. An easing of construction and urban-planning rules, or incentives to densification (for example by transferring responsibility of local urban planning from the municipal to the intermunicipal level) would ensure that higher demand translates into more housing constructions, rather than price increases in areas subject to market tensions. **Supply-side measures would thus improve the efficiency of demand support mechanisms.**

Victor BARRY, Louis BOISSET, Marine LEFORT

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Publication manager:
Michel Houdebine

Editor in chief:
Jean-Luc Schneider
+33 (0)1 44 87 18 51
tresor-eco@dgtresor.gouv.fr

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