



Banc Ceannais na hÉireann
Central Bank of Ireland

Eurosystem

Claire Labonne and Cecile Welter-Nicol. Cheap Credit, Expensive Houses?

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Overview

- “we show an exogenous credit supply shock spurs both housing prices and homeownership accession”.
 - “The elasticity of housing prices to credit ... from 0.5 to 0.7”
 - “The IFL also facilitates entry on the housing market, approximated by the difference between borrowers’ and average income”
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Identification Strategy

- France has four “housing policy zones”.
- *PTZ* is set based on housing policy zones, household size, income, new versus existing housing.
- The policy reforms are both contractionary (2010) and expansionary (2011).
- Every mortgage has a maximum amount available under *PTZ*. Authors measure the average maximum € value available under the *PTZ* in different ZIP codes.
- There is an obvious concern that policy makers set the *PTZ* in response to housing market conditions, meaning that *PTZ* is not a valid instrument for a credit-house price equation.
- There are ZIP codes that sit on either side of “housing policy zone” borders. For such areas, it should not be the case that local housing market conditions are feeding back into the decision around *PTZ* availability.
- → Changes to the maximum € amount of *PTZ* available are exogenous instruments for credit, which can then explain house prices!!!



- Discussion Points



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- Favara and Imbs (AER 2015) appears to be the gold standard in this literature.
 - They identify the effect of an exogenous shift in credit *supply* by banks by using state-varying regulatory changes and measuring supply using metrics such as % applications accepted, average loan size granted, etc.
 - The credit measure that is used in the second stage in this paper appears to simply be the Drawn Balance at Origination.
 - It is therefore the intersection of the bank's willingness to supply credit and the borrower's demand for housing-related borrowing and for leverage.
 - The identification strategy works on the assumption that the relationship between the *Pret a Taux Zero* and credit is one that works through credit supply.
 - However when we are observing Drawn Balances, we can never be sure that this is the case! The bank may have been willing to supply significantly more credit than that drawn down, but the borrowers simply had lower demand for leverage.
 - If there is any systematic relationship between the Max Value under *Pret a Taux Zero*, and borrowers' credit demand in that locality, then we cannot isolate the effect in this paper as the effect of credit supply on house prices.
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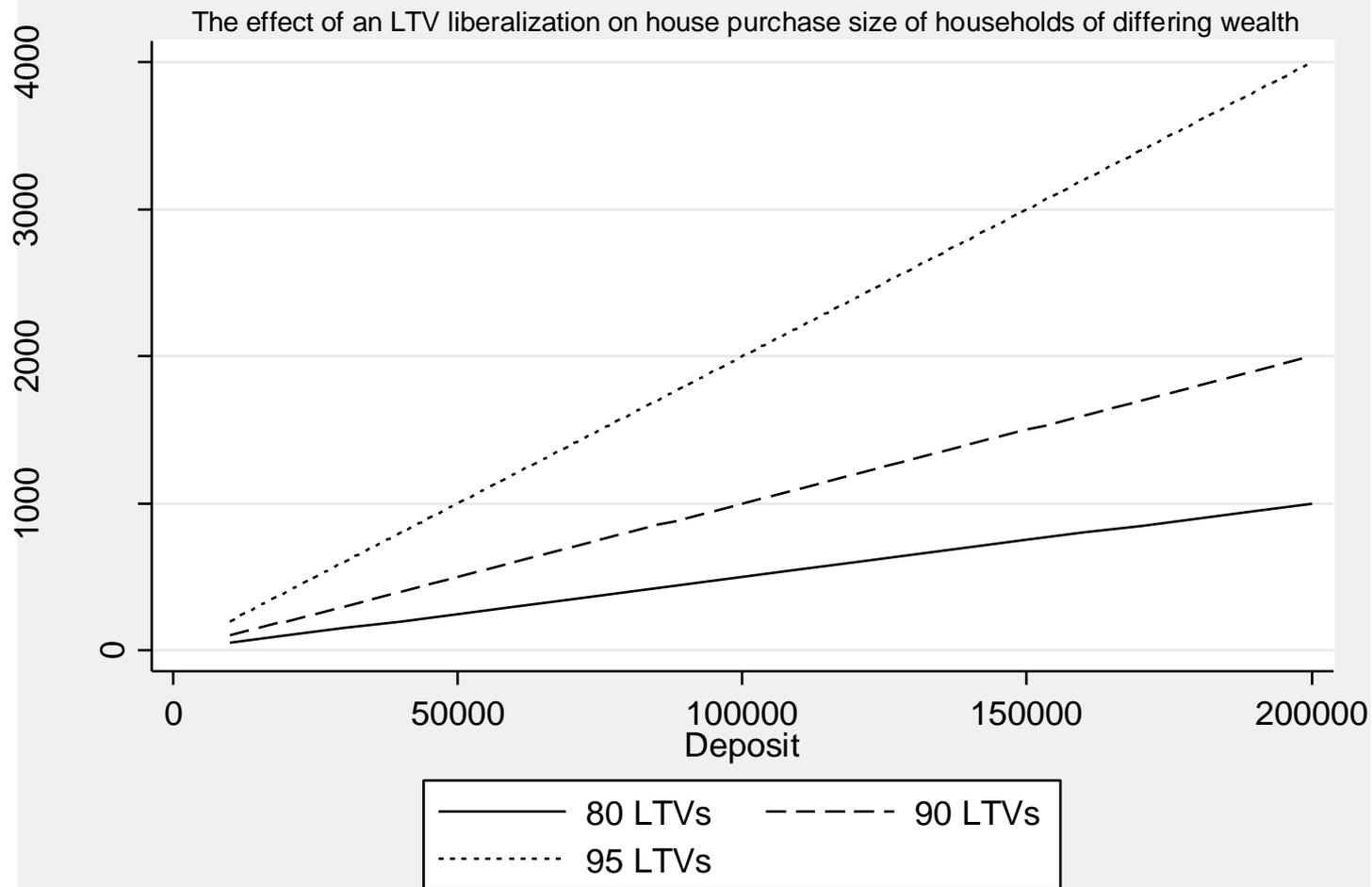


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- The model is run at the ZIP-code level.
 - *PTZ* amounts are property-specific, depending on property type, household size and borrower income.
 - To measure *PTZ* at the ZIP code level, the authors take a weighted average of the Max *PTZ* amount available for a two-person household for new and existing housing.
 - The weights are given as the ZIP-code level share of new and existing housing both during the sample period, and pre-sample-period as a robustness check.
 - This is a nice feature given that taking average amounts available from the data would be subject to the criticism that some ZIP codes are composed of different types of housing and families, which would drive differences in *PTZ* amounts.
 - Further, the short duration of the panel means that ZIP-code FE do a good job at capturing differences in composition between new and existing housing. In short, this seems like a good measurement for *PTZ*.
 - One (minor) issue worth clarifying: do different housing policy zones have differential treatment for larger households? This may be important for robustness, given that identification rests completely on treatment of two-person households.
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The characteristics of borrowers accessing an *ILF* Amount



- The PTZ is aimed at lower-income borrowers.
- The exogenous shift in credit that is identified in your model is therefore only operational for a component of house purchases.
- The estimated effect of credit \rightarrow HP is estimated using aggregate numbers for both variables, i.e. the **whole distribution of borrower types are included in Y and X, but not in Z.**
- Does this matter?
- We perhaps should think harder about whether credit policy at the lower-income end would have a larger or smaller effect on the credit \rightarrow HP relationship.
- Hypotheses:
 - Upward bias? Lower-income borrowers are marginal, are constrained in the absence of policy, so will pass on any credit increases with an elasticity close to one.
 - Downward bias? Higher-income borrowers are aiming for the most expensive houses, and measures like LTV are non-linear, so a 5% increase in LTV leads to a far larger house price increase for a down-payment of 100k than a down-payment of 10k (see next slide).
 - Bidding wars are perhaps more intense at the high end of the market. The most desirable areas may induce borrowers to deploy all financial resources, including from family, to purchase at the top end.





Municipalities versus ZIP codes.

- Some confusion throughout paper around municipalities (~36k in France) versus ZIP codes (~6k).
 - The baseline model is run at the ZIP code level.
 - However a lot of information seems to be available at municipality level (IFL regulations, fiscal income, demographics).
 - It seems that there is some key information that is only available at the ZIP code level, which means that a municipality-level model cannot be run.
 - This leads to the unfortunate omission of ZIP codes in which there are municipalities in two different housing policy zones, as these ZIP codes cannot be assigned a unique IFL policy measure.
 - Rather, identification is limited to ZIP codes where all municipalities in area A are in one policy zone, and all municipalities in area B are in a separate policy zone.
 - → Authors should make more clear how many municipalities out of the 36,000 remain in their regression sample, and should make it more clear why a municipality-level model cannot be run.
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Selection of municipalities – important missing areas?

- The authors identify an exogenous shift in the *PTZ* by looking only at municipalities/ZIP codes that sit at the border between Housing Policy Zones.
 - However, because the model is at the ZIP-code level, the authors must drop ZIP codes that have municipalities sitting in different Housing Policy Zones, as these ZIP codes cannot be assigned a unique *PTZ* value.
 - This seems unfortunate – these municipalities that sit at the border between Housing Policy Zones are even more likely to have housing markets exogenous to *PTZ* policy than ZIP codes that sit at the border!!!
 - A municipality-level model, even if more parsimonious in terms of **X** variables, would allow the inclusion of these interesting areas.
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Selection of municipalities / generalizability

- The authors identify an exogenous shift in the *PTZ* by looking only at municipalities that sit at the border between Housing Policy Zones.
 - Econometrically, this appears clean.
 - However, ***economically***, what are the impacts of focussing on such areas?
 - The paper would benefit from a comparison of the border municipalities and all of France by Income, Wealth, Age, LTV, Credit, House Type. Are any biases introduced by selection this small group of municipalities?
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Empirics – inclusion of borrower income measures

- In the ZIP-code level model, the authors include both the average income among borrowers in their loan-level data set, AND average income among all individuals in the ZIP code (from a fiscal data source)
- Logic is that mortgage market participants are different from the general population (45% higher income in France on average).
- In the ZIP-code regression model, these two measures should be highly collinear.
- The only thing that would lead to these two not being perfectly collinear is heterogeneity in the proportional way in which French banks select mortgage borrowers across ZIP codes.
- Is this plausible? Is there really a different entry threshold applied in some areas than others?
- Regression results find a positive sign in HP equation for borrower income and a negative or insignificant sign for ZIP-code average income. If we take these results seriously, that suggests that richer ZIP codes have lower house prices, controlling for mortgage market selection. Do we believe this?
- **Alternative approach:** Remove ZIP-code income from these models, and instead put in the ratio of (Mortgage Income / ZIP code income). Where this is lower, the mortgage market is more accessible. This may be (+) related to HP **if there are looser credit conditions in operation in some areas or time periods.**



- The authors find coefficients of 0.5 (Reduced form) and 0.7 (IV).
- These elasticities are 4x-6x higher than those found in Favara and Imbs (2015).
- Kelly et al (2015) also find reduced-form loan-level elasticities of between 0.15 and 0.2.
- The authors should spend more time discussing the differentials in coefficient magnitudes.
- They mention that housing supply is less elastic in France due to regulation.
- However, another reason for their large coefficient may be that they are mismeasuring credit, as discussed earlier.
- They measure the intersection of supply and demand curves, rather than the available credit supplied.
- The relationship between credit **drawn down** and HP may be stronger than the relationship between credit **supplied** and HP.
- The authors should think harder about whether they can convince the reader about their measurement of credit.
- Alternatively – the paper can be sold in a slightly different light, stating that the *PTZ* policy leads to shifts in both the demand and supply of credit, and the observed credit levels are larger as a result, and these credit increases drive house prices.



Coefficient magnitudes (cont.)

- Credit demand should be mentioned more in the paper.
 - It is possible that the *PTZ* could cause **no change whatsoever** in credit supply, and generate the results in the paper.
 - This could occur if *PTZ* drives changes in borrowers' demand for credit, and their demand for higher-leverage loans.
 - This is entirely possible given that the monthly repayment burden for any given loan amount is lowered by a more generous *PTZ* policy.
 - → should the authors sell their paper as studying the impact of a **change in credit policy on house prices**, where the credit policy affects **both lender and borrower** behaviour? This might be more credible than the claim that an **exogenous credit supply shock** has been identified.
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Coefficient magnitudes (cont.)

- Of course the other reason that coefficients might be biased upward is an invalid instrument.
- The IV strategy does seem pretty convincing to me.
- One factor worth considering:
- Your IV does not vary for ZIP codes within the same housing policy zone. It is therefore correlated with the error term *if* there are shocks that are common to housing policy zones.
- The housing policy zones appear to represent distinct geographical types: A = urban wealth, B = large towns, C = rural.
- Is it possible that there are shocks that are common to wealthy urban areas, and distinct shocks common to rural areas in France during the time period under study?
 - Sector-specific shocks to sectors with high concentration in one type of area (e.g. banking industry, mostly affects urban wealthy areas?)
 - EU agricultural policy reform? (should only affect rural areas)



LTV/Selection Model

- Authors find that a higher LTV, instrumented by the *PTZ*, is associated with a lower probability of a borrower being above the ZIP-code average income.
- Intuition is that when borrowers are further below the ZIP-code-average, we have a more accessible mortgage market.
- A similar critique to earlier applies: the LTV that is observed is the intersection of the LTV that a bank is willing to supply and the demand for leverage of the borrower.
- If *PTZ* has any link to borrowers' demand for leverage (e.g. it changes borrowers' perceptions about the attractiveness of debt), then the effect cannot be interpreted from the supply side, i.e. it may not be that *PTZ* has had an impact on **credit standards. Rather it may have had an impact on a combination of credit standards and borrowers' credit appetite.**
- Also, it seems a pity that the Y variable is binary → are we losing a lot of information through this? Is there no way to model a continuous variable? Or even a quantile type regression? I would like to see summary stats on the % of borrowers that are below ZIP-code average income. Are you identifying off a very small number of borrowers?



- **Minor Points**



Covariates

- A common comment: are there additional control variables that can be included in the models?
 - E.g. demographic/socioeconomic controls to capture differing rental VS ownership preferences?
 - It appears that the serial correlation in house prices is not captured in your paper. Could this framework accommodate a model with a lagged dependent variable?
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Clustering

- The model is run at the ZIP code level in a panel setting.
 - The authors state that they cluster at the ZIP-code*time level.
 - Do you mean “robust standard errors”?
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- **Future work (maybe)**



A loan-level model???

- As an alternative approach, I wonder whether it is possible to create a *PTZ* loan amount at the individual level?
- For each borrower, you know their income, the house type and the area, so you could actually calculate how much was **available** to them under the *PTZ*.
- Using this *PTZ* available measure, you could then input it directly into a house price equation, rather than instrument credit drawdowns with it.
- You would then avoid the criticism that you are inputting the (S,D) intersection in your second-stage model.
- In the loan level model you would have income, location, age, and could include municipality*time fixed effects. Is this a plausible model?
- It would be very interesting to see how different the coefficient is on this model, and the *PTZ* measure is more purely a **supply** measure than that in the paper currently.
- Disclaimer: something similar is done in Kelly, McCann, O'Toole (2015!)



Future research work

- Policies such as the *PTZ* have laudable social policy aims.
 - Nobody would argue that it is noble to attempt to alleviate credit market restrictions, particularly among less wealthy households.
 - However, such policies come with financial stability concerns.
 - Large body of work from the USA (e.g. Mian and Sufi) tells us that increased subprime borrowing was a cause of the housing and foreclosure crises.
 - Recent from Ireland, France and elsewhere has shown that higher originating LTVs are associated with a higher probability of default.
 - Could the authors investigate whether IFL loan proliferation is associated with higher rates of mortgage default? Are these homeownership-stability trade-offs prevalent in France?
 - This would not be a popular paper among those who support policies to promote home-ownership, but perhaps it is an important one!!!
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