



Green Premium and Brown Discount in Real estate markets:

A Meta-analysis to shed light on the possibility of a
climate risk differential in banks mortgages portfolio

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Background and opportunity

- ✓ There is certainly a need to produce analytical and empirical results that can be used to support regulatory and supervisory decisions around the treatment of ESG, and especially climate related, exposures by banks.
- ✓ In this context, there is abundant evidence around wholesale ESG products, especially green and sustainability linked bonds. But much less so in the retail segment, especially housing related finance, which represents a very important component of banks assets, and certainly incorporates relevant sustainability factors
- ✓ It is in this area where the paper tries to extract evidence, though of a very limited applicability in terms of prudential regulation.



Aim of paper, data and methodology

- ✓ Specifically, the paper performs an ambitious search exercise trying to extract available evidence on the existence of a green premium (greenium) in the European real estate market, measured as the price difference between units with higher or lower energy performance certificates (ECP).
- ✓ To that end, the paper performs a “secondary research” (research on research), of a nature similar to a literature review, but strengthened with a powerful search engine and statistical tools.
- ✓ The search covers a European wide scope, with country specificities, and including control variables that might be affecting the expected effect size.
- ✓ From an ambitious search sample (over 160 papers), rigorous filtering to avoid insufficient and/or redundant data leaves a usable sample of 69 articles. Interesting among them, the distinction between published in scientific journals and those produced by professional interests (notaries, consultants, etc)



Main results and policy implications

- ✓ There is a significant effect in house prices due to high vs low EPC: 8,7% on average, with a confidence interval between 6,5% and 10,8%
- ✓ Highly heterogeneous across countries
- ✓ More robust estimation when extremes of the EPC scale are used
- ✓ Papers in scientific publications display significantly lower EPC effects than papers with a professional origin
- ✓ These results are statistically significant, and quite relevant, but fall short of the policy questions that the authors propose around prudential regulation:
 - ✓ *Property prices have an effect on a loan risk profile as it is the denominator of the loan to value (LTV) ratio and LTV buckets are used to classify loans in the Standardised approach for risk weighing in CRR. A property premium or down value given its energy performance in turn impacts the risk profile of a mortgage and eventually the level of prudential capital that a bank can allocate for this loan and asset*



On the relevancy of green premium on house prices

- ✓ ¿Is it really the case that a green premium or a brown discount in house prices has an influence by itself on the risk profile of a mortgagor, and therefore should be a relevant input for prudential regulation considerations around green/brown mortgages?
- ✓ I don't think so. At most, it would be price dynamics through time, and not absolute level of prices, what has some influence on the probability of default by a mortgage borrower.
- ✓ In this sense, it would have been desirable to incorporate, as an additional control variable, the evolution through time of the price premium associated to high EPC score. If such a premium were found increasing through time (as I would expect, given the increasing supports and subsidies that green housing has been receiving in most countries), that might lead to a reduction in the risk profile of the green mortgagors.



Green effects on probability of default

- ✓ As a matter of fact, as the authors recognize, there has been abundant evidence about green premiums on house prices, and much less so on green premiums on probability of default (PD) by a mortgagors, which certainly has a has a very weak connection to house prices, and the sigh of that connection is not clear at all.
- ✓ There are two well recognized studies around green PD's, one covering the US (Kaza-Quercia-Tian), and another one covering the UK (Guin-Korhonen)
- ✓ Both of them conclude that high energy efficiency significantly reduces the probability of default in mortgages, by an estimated amount of 0,65% in the US study, or 0,21% in the UK, after controlling for several relevant variables.
- ✓ Among the control variables, the most significant ones are related to borrower characteristics, like gross income, FICO score, or borrower age.



Green effects on probability of default

- ✓ In both studies, house prices entered as significant explanatory factors, but not on an absolute level, but on relative terms:
 - ✓ Relative price of the house compared to those of the same ZIP code, with a significant effect of PD reduction
 - ✓ Denominator in the LTV ratio, with a significant increasing effect on
- ✓ From those results, it is clear that absolute house prices (or absolute premium for green versus brown) has mixed effects that make it worthless to generalize on them
- ✓ In fact, the green premium may well be explained by the amount of subsidies received from public authorities, as well as the energy savings
- ✓ Guin-Korhonen estimate that energy savings in a high versus low efficiency house may be of an order of magnitude that, on a net present value, explains between 5% and 10% of the market value of houses, percentages that are extremely close to the green premium estimated by Bosc-Leboulenger.



Policy considerations

- ✓ These evidences supporting that green mortgages display a lower probability of default may be used by banks to adjust their lending standards and offer some differential pricing.
- ✓ It is too early, however, to conclude that prudential regulation should be modified in the sense of accommodating capital requirements to climate change, as a recent paper by the BIS recognizes: *By reducing capital requirements for green assets, the unexpected losses that could arise from those exposures would, by definition, be insufficiently covered by own resources. Moreover, such an approach would also encourage the overvaluation of green assets. These two factors would increase the risks for financial stability and also the scope for friction between the financial stability mandate of regulators and general policies aimed at favouring the transition to a more climate-friendly economy.*



Policy considerations

Similar types of arguments have recently been exposed by the UK Prudential Regulation Authority (PRA):

Particularly, ‘supporting’ factors could result in environmental considerations overriding (other) prudential risks. This could result in investments in ‘green’ (but otherwise risky) investments receiving too generous a capital treatment and/or an overall decrease in capital in the system (if not corrected elsewhere in the capital stack). This could threaten the safety and soundness of individual firms and may even have financial stability implications



References

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