We Love Green: Households' Valuation of Organic Farming and Challenges of Signaling

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Abstract

Agricultural landscapes generate a complex bundle of positive and negative local externalities. This paper estimates the impact of the type of farming (organic versus conventional) on residential property prices in France, using an exhaustive database of 2.9 million housing transactions merged with geolocalized land-use data, and a dual identification strategy (buffer and distance-based). Our results establish a clear hierarchy of preferences. At short distances, proximity to conventional agriculture acts as a significant baseline disamenity, and organic farming as a mitigating factor. This premium increases with the extent of the organic landscape and is most pronounced in periurban areas.

Keywords: Hedonic valuation, land use, farming systems, organic farming, externalities, parcel data

JEL Codes: H23, Q50, Q51, R21

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1. Introduction

Public concern over food production and its broader environmental implications has intensified in recent years. In particular, debates have focused on the use of synthetic inputs in agriculture, given their potential effects on human health and ecosystems (Batsch, 2011; Guyomard et al., 2013; Svensson et al., 2013). Meanwhile, a variety of ecological farming approaches that aim to reduce reliance on chemical inputs have gained momentum across the European Union, including conservation agriculture, low-input farming, agroecological farming and organic farming (Latruffe and Schwarz, 2022; Finger and Möhring, 2024). Among these production systems, organic farming stands out thanks to its well-established certification standards and a recognizable label, which facilitates consumer awareness and signals adherence to more environmentally friendly practices. In 2022, the organic production area in the European Union reached 16.9 million hectares (10.5% of total agricultural land), representing a 79% increase over the last decade (Eurostat, 2025). Following substantial support for organic conversion and maintenance, exceeding e12 billion in the 2014-2022 period under the Common Agricultural Policy (CAP), the European Commission has now set a target of 25% of farmland under organic management by 2030 as part of the *Green Deal* (European Commission, 2019). This rapid growth of organically managed land amplifies local communities' exposure to organic practices, which may generate both positive and negative externalities compared to conventional agriculture. Understanding the welfare impacts of this shift thus requires investigating how residents are affected and perceive the different agricultural amenities and disamenities.

Building on the canonical urban economics framework derived from the agricultural land location model proposed by von Thünen (1842), this paper examines how French residents value proximity to farmland and whether they respond to signals related to the type of local food production systems. In particular, we distinguish organic from conventional production methods. A large body of literature on residential location choices has documented a strong relationship between property prices and environmental attributes (Bengochea, 2003; Maslianskaia Pautrel and Baumont, 2016). However, the specific influence of farmland on housing prices remains inconclusive. While some studies suggest that farmland has a depressing effect on housing prices (Hite et al., 2006; Lake and Easter, 2002; Schläpfer et al., 2015), others report a positive effect (Roe et al., 2004; Ready and Abdalla, 2005; Cavailhès et al., 2009; Baranzini and Schaerer, 2011; Walls et al., 2015) or find no significant impact (Münch et al., 2016). These contrasting findings may be due to the variety of definitions and metrics used to capture farmland and its proximity, and the limited attention to production systems. Although many studies focus solely on crop areas, some distinguish between crops and livestock (Goffe, 2000; Ready and Abdalla, 2005; Osseni et al., 2021). The literature also adopts different spatial measures, such as the share of farmland within the viewshed of the house (Cavailhès et al., 2009; Baranzini and Schaerer, 2011; Walls et al., 2015), within a given radius around the property (Ready and Abdalla, 2005; Hite et al., 2006), or within the municipality (Goffe, 2000; Osseni et al., 2021). While area-based indicators capture broader perceptions of farmland in a neighborhood, distance-based approaches capture more immediate amenities or nuisances (Lake and Easter, 2002; Münch et al., 2016). In this paper, we use both measures in complementary analyses to capture these distinct dimensions of farmland proximity. In addition, we examine land use through the lens of environmental performance. The way ecological methods may capitalize into residential property prices remains underexplored, despite growing policy support and public interest in lower pesticide use. Focusing on organic farming, we provide novel empirical evidence on how local populations value low-pesticide production methods, and how they reveal a willingness-to-pay for the (dis)amenities associated with organic farming. While the organic label is recognized at the retail shelves, it remains unclear whether households can perceive different land-use practices in their immediate surroundings (see Pope (2008a,b) for a theoretical framework on the capitalization of signals in revealed preference models). We rely on the observability of the production technology and posit that organic farming acts as a salient local public good. Through active signaling (e.g., field-edge signs) and distinct landscape features (Bengtsson et al., 2005), this production method conveys a verifiable signal that is capitalized by sorting households.

Our empirical strategy leverages exhaustive deeds records from the Demand for Land Value (*Demande de Valeurs Foncières*, DV3F), covering over 2.9 million real estate transactions in mainland France between 2016 and 2022. This dataset provides precise geographic coordinates and cadastral boundaries for residential properties, allowing for exact spatial matching. We then address long-standing data limitations of prior studies that relied on expensive (e.g. PERVAL/BIEN), small-scale surveys (e.g., the Building Land Prices Survey, which covers only periurban areas) or coarse spatial aggregations. To characterize the agricultural environment, we merge these transactions with the Land Parcel Identification System (LPIS). Unlike the Agricultural Census, which links farming activities to a farm headquarters often approximated by the municipal centroid, the LPIS provides annual, geocoded information for over 9.5 million agricultural parcels. This dataset specifically inventories vegetal land cover (e.g., field crops, vineyards, pastures) but excludes livestock housing and animal density –a dimension we explicitly control for, among other potential confounders. This distinction enables us to isolate the externalities associated with crop management practices from those driven by animal rearing. To the best of our knowledge, this paper is the first nationwide analysis of agricultural externalities using such granular, spatially explicit revealed preference data. Our results reveal a clear, distance-dependent hierarchy of preferences. Consistent with the literature, we find that proximity to agricultural land is capitalized as a net disamenity. However, the composition of that agriculture matters. While OLS estimates suggest a negligible organic premium at immediate proximity, likely masked by negative spatial sorting, our instrument variable strategy shows that, conditional on covariates, organic practices are significantly valued by households. Furthermore, buffer-based analyses reveal that this valuation extends into broader vicinity (500-2,000m), indicating that at the landscape level, organic farming is perceived positively (i.e., as an amenity) compared to conventional agriculture. These findings highlight that organic farming generates local public goods whose valuation is subject to selection bias, which may justify targeted policy support to mitigate land-use conflicts in mixed landscapes.

The remainder of the paper proceeds as follows. Section 2 presents our theoretical framework. Section 3 describes the data. Section 4 estimates the impact of agricultural land use on house prices, using the share of farmland within a buffer to proxy for neighborhood-level perceptions. Section 5 complements this analysis by examining proximity measured as the distance to the nearest parcel. Section 6 discusses the findings and concludes.

2. Conceptual Framework

A representative household has income y and chooses a house characterized by a vector of attributes $\mathbf{z} = (z_1, \dots, z_n)$, which includes structural characteristics of the house (e.g., floor area, number of rooms) and neighborhood features (e.g., distance to the nearest city center and access to nearby farmland z_n). Households consume a numeraire good X in addition to housing and face a hedonic price function $p(\mathbf{z})$ that reflects how the market values each attribute in $\mathbf{z}$. Households maximize their utility subject to the budget constraint

$$\max_{X,\mathbf{z}} U(X, \mathbf{z}) \ \text{s.t.}\ \mathrm{y} = p(\mathbf{z}) + X \qquad [1]$$

From the first-order conditions, the implicit marginal price of the agricultural attributes z_n satisfies

$$\frac{\partial p(\mathbf{z})}{\partial z_n} = \frac{U_{z_n}}{U_X} \qquad [2]$$

where U_{z_n} and U_X denote partial derivatives of $U(\cdot)$ with respect to z_n and X, respectively.

Agricultural land can generate both positive externalities (such as scenic landscapes) and negative ones (such as odor, dust, noise, polluting emissions derived from the use of fertilizers, pesticides and fuel) (Bergstrom and Ready, 2009). The farming system implemented at the parcel level (organic vs conventional) is an attribute that affects the provision of these externalities. Specifically, let $h \in \{\text{org}, \text{conv}\}$ indicate whether a parcel is managed under organic or conventional production systems, and a_i^h (for $i = 1, \ldots, k$) denote the intensity of the i-th externality under production system h. We consider three illustrative dimensions. Production systems have heterogeneous environmental and health impacts. We posit that organic farming uses less chemical pesticides[1] ($i = 1\colon a_1^{\text{org}} \approx 0 > a_1^{\text{conv}}$), generates more diverse landscapes throughout the year that households prefer ($i = 2\colon a_2^{\text{org}} > a_2^{\text{conv}} > 0$) (Serée et al., 2023), and is more mechanization or labor-intensive compared to its conventional counterpart ($i = 3\colon 0 > a_3^{\text{conv}} > a_3^{\text{org}} > 0$) (Röös et al., 2018). Also, the impact of pesticide exposure is assumed to be very localized, while increased mechanization for soil labor under organic management may negatively affect both immediate neighbors to the fields and those farther away due to tractors sharing the road with cars. Therefore, we can assume that $\alpha_1 > \alpha_3$.

Households' exposure to agriculture externalities can be expressed based on the share s of farming in a given buffer around the house z_h^b or at distance d to the nearest plot z_h^d

$$z_h^b = s \int_{d=0}^{\bar{d}} a_i^h e^{-\alpha_i r}\, dr \qquad [3]$$

$$z_h^d = \sum_{i=1}^{k} a_i^h e^{-\alpha_i d} \qquad [4]$$

where α_i is a decay parameter that reflects how exposure to agricultural amenities evolves with distance, and a_i measures an amenity or disamenity.

Based on the distance approach[2], the impact of distance on the valuation of organic externalities is obtained by differentiating (4) with respect to distance:

$$\frac{\partial z_h^d}{\partial d} = -a_2\alpha_2 e^{-\alpha_2 d} - a_3\alpha_3 e^{-\alpha_3 d} \qquad [5]$$

Depending on the relative values of amenity valuation and distance-decay between landscapes and mechanization, organic farming valuation may increase or decrease with distance, as illustrated in Figure 1. We present both conventional (dotted line) and organic (solid line) farming systems. In case (a), proximity to both types of farm management is valued negatively; however, households still prefer to reside next to an organic field rather than a conventional one. The set of parameter values chosen in this scenario illustrates the case where pesticides are valued very negatively. In case (b), organic farming is valued negatively first, then the positive amenities from landscapes dominate. Compared to case (a), landscapes have a very low decay rate. In case (c), proximity to farmland is consistently valued positively at a decreasing rate with distance. Here, landscape amenities hold high value, and the decay rate is low. In case (d), the range of amenities reflects positive valuation for proximity to organic farmland, while proximity to conventional farmland is valued negatively. The chosen parameter values in this case indicate that households highly appreciate landscapes resulting from organic farming. On the contrary, they have a strong aversion to negative externalities associated with pesticides exposure.

<<Figure 1 about here>>

For these externalities to be capitalized into land prices, production technologies must be observable. We identify two transmission mechanisms: visual salience and information acquisition. Organic farming is characterized by distinct biophysical cues, such as mechanical weeding and greater floral diversity (Bengtsson et al., 2005), and explicit signaling. Indeed, French institutions encourage standardized signage at field edges to prevent chemical drift from neighbors, which also acts as an unambiguous signal to residents. Also, consistent with sorting models (Bayer et al., 2007), equilibrium prices reflect the preferences of the marginal buyer. In this context, the agents driving the environmental premium are those willing to incur the search costs required to ascertain neighborhood quality (Pope, 2008a), thereby ensuring that the organic status of nearby land is effectively internalized by the market.

3. Data

Housing prices

This study uses the Demand for Land Values (*Demande de valeurs foncières*, DV3F) dataset, comprising all recorded real estate transactions in France from January 2016 to December 2022. Provided by the Directorate-General for Public Finance (DGFiP), DV3F includes transactions in primary and secondary property markets, covering land, residential, and other built properties (Cerema, 2019). We restrict our analysis to residential dwellings, excluding industrial and commercial transfers. The dataset provides detailed information for each transaction, including property type, declared value, floor area, lot size, transaction year, and the number of rooms. It also offers precise spatial granularity, providing geographical coordinates and cadastral geometries for each observation. The unit of observation is the transaction bundle (*mutation*), which encompasses the dwelling and all associated land parcels (e.g., gardens, private forest). Figure A1a in the Appendix illustrates the data structure. Transaction 1 consists of several non-contiguous parcels (blue), while transaction 2 (green) includes contiguous parcels. Following standard guidelines (Cerema, 2019), we clean the data by excluding non-market transfers (i.e., auctions, social housing exchanges, expropriations) atypical properties (e.g., those exceeding 300 m^2 of floor area or more than eight rooms), multi-property transactions spanning multiple municipalities, and observations with incomplete price data. Prices are deflated to January 2016 euros using the Consumer Price Index from the French National Institute of Statistics and Economic Studies (INSEE).

The final sample comprises 2,928,144 transactions across 33,046 municipalities. DV3F does not include the three border departments (NUTS3 level jurisdictions) of Moselle, Bas-Rhin and Haut-Rhin. We further exclude Corsica and island municipalities to ensure spatial consistency. Appendix Figure A2 depicts the spatial distribution of housing prices. Municipalities with high prices are concentrated around urban centers, while rural areas exhibit lower values.

Agricultural land use, organic farming and downstream linkages

Our primary source for land use is the French Land Parcel Identification System (LPIS), the administrative registry used for the CAP subsidy allocation and managed by the Agency for Services and Payment. The LPIS provides annual information on land cover, distinguishing between 94 crop types (e.g., cereals, oilseeds, permanent pastures) and organic certification for over 9.5 million parcels (Appendix Figure A1b).[3] While the LPIS provides high-resolution spatial data, it relies on self-reporting, which may introduce measurement error (Cantelaube and Carles, 2015), and covers approximately 80-85% of organic parcels due to CAP reporting thresholds.

We supplement the LPIS data with records on downstream organic market structure from the French Agency for the Development and Promotion of Organic Agriculture (*Agence Bio*). We identify the location of downstream firms (e.g., storage and processing facilities) to construct binary indicators for the presence of organic cooperatives within 5, 7.5, and 10 km radii. Finally, to control for demand-side shocks, we construct an organic price index based on a basket of core staples such as plant-based beverages, milk, dairy products, eggs, savory grocery items, fruits, vegetables, sweet grocery items, and fresh bakery and pastry products.

Matching housing transactions and agricultural parcels

We link housing transactions to agricultural data using an annual spatial join. We match each dwelling to the nearest agricultural parcel based on the Euclidean distance to its centroid (Appendix Figure A1c). Appendix Table A2 reports the distribution of transactions by proximity to organic land. We observe an increase in transaction volumes across all distance bins over time, with a persistent concentration in the 500-1,000m range. The lowest frequency of transactions within 500m (0-250m and 250-500m bins) likely reflects historical land-use separation between residential and agricultural areas. However, the rising number of transactions near organic fields over the sample period suggests a tightening spatial interface between residential development and organic farming. To capture the intensity of exposure beyond simple proximity, we compute the total utilized agricultural area (UAA) within concentric buffers (250, 500, 1,000, 1,500, and 2,000m) around each property, differentiating between organic and conventional land use.

Additional covariates

To isolate the effect of agricultural land use, we include for a comprehensive set of covariates controlling for local amenities and socioeconomic composition. First, we measure geographic accessibility using the BD TOPO dataset. We compute Euclidean distances to the nearest linear hydrographic feature (river, stream, or canal), forest, train station, hospital, and primary school.[4] We also include the distance to the closest economic center (CBD) to proxy for employment access. Second, we control for municipality-level socioeconomic characteristics using INSEE census data, including median income, the unemployment rate, and the share of social renting defined as the proportion of residents in public or subsidized housing schemes. We control for potential confounding from livestock production using the French registry of classified environmental installations (*Installations Classées pour la Protection de l'Environnement*, ICPE). We define an intensity measure based on the prevalence of animal-rearing operations. This measure aggregates rearing activities across all species (e.g., bovine, ovine, porcine, and poultry) and includes ancillary crop and animal production support services. Third, we classify municipalities using the standard urban-rural typology (Brutel and Levy, 2011) to account for spatial heterogeneity. We harmonize all variables to the 2017 administrative (municipal) boundaries from AdminExpress dataset. Finally, to address potential endogeneity in land use allocation, we construct an instrument for soil quality based on the FAO Global Agro-Ecological Zones (GAEZ) database. Specifically, we compute a municipality-level index of nutrient availability derived from exogenous agro-climatic conditions (e.g., soil texture, pH, organic carbon), where higher scores indicate greater suitability for plant growth and agricultural productivity.

Summary statistics

Table 1 presents descriptive statistics for our final sample, which includes properties sold between 2016 and 2022 within 2.5 km of agricultural land. The mean transaction price is €183,687 for an average living area of 101.63 m^2 and a lot size of 1,151.49 m^2. In terms of accessibility, the properties are located on average 33 km from the nearest CBD and 1.2 km from a primary school.

Socioeconomic indicators show a mean municipal unemployment rate of 12.3% and a median income of €21,914. On average, municipalities contain 24 regulated animal-rearing facilities, and half are classified as rural (Appendix Table A3).

<< Table 1 about here>>

4. Estimating Agricultural Externalities on Housing Prices

Empirical strategy

Our empirical strategy isolates the net impact of agricultural externalities by separating it into two components: the presence of agriculture and its composition (organic vs. conventional). We estimate the following hedonic model:

$$\mathrm{Price}_{it} = \beta_1(\mathrm{ShareOrg}_{\mathrm{it}}^{\mathrm{r}} \times \mathrm{AgriUAA}_{it}^{r}) + \beta_2 \mathrm{AgriUAA}_{it}^{r} + X_{it}'\gamma + \xi_m + \xi_{dt} + \varepsilon_{it} \qquad [6]$$

where Price_{it} is the log price of house i sold in month m of year t. The variable $\mathrm{AgriUAA}_{it}^{r}$ is a binary indicator equal to 1 if any agricultural land exists within radius r of the property, and 0 otherwise. $\mathrm{ShareOrg}_{\mathrm{it}}^{\mathrm{r}}$ is the share of UAA under organic production within that radius, defined only for properties exposed to farmland (i.e., $\mathrm{AgriUAA}_{it}^{r} = 1$). In this specification, the reference group consists of properties with no agricultural exposure $\mathrm{AgriUAA}_{it}^{r} = 0$). The coefficient β_2 thus captures the net (dis)amenity of 100% conventional agriculture, relative to this no-agriculture baseline. The coefficient $\beta_1$represents the marginal price premium (or discount) for organic farming, conditional on being exposed to agriculture. The total effect of a 100% organic landscape relative to the no-agriculture baseline is given by the sum $\beta_1 + \beta_2$.[5] The vector X_{it}' includes a comprehensive set of controls. Property-level controls include floor area, lot size, and the number of rooms. Geographic controls include distances to the nearest primary school, train station, hospital, CBD, forest, and waterway. Municipality characteristics include median income, unemployment rate, social renting rate, and the count of livestock facilities.

The model includes two sets of fixed effects to control for unobserved heterogeneity. Department-by-year fixed-effects (ξ_{dt}) allow us to absorb any time-varying shocks and trends (e.g., local economic cycles) that are common within a department in a given year. The model also includes month-ofthe-year fixed effects, ξ_m to capture seasonality in the housing market. The error term ε_{it} is an i.i.d. random component, assumed to be independent of the regressors. Standard errors are clustered at the transaction level and are robust to heteroskedasticity to account for potential serial correlation in the outcome variable. The OLS estimates are potentially biased by non-random sorting. For instance, households with preferences for environmental amenities may sort into areas that also have a high share of organic farms. Unobserved local characteristics, such as pesticide drift or ambient pollution, could also confound the relationship between organic farming and housing prices. We take two steps to mitigate these concerns. First, we restrict the sample to properties within 2.5 km of agricultural land, ensuring our comparisons are between properties in similar (non-urban) settings. Second, our model includes a rich set of fixed effects and covariates to absorb observed and unobserved heterogeneity at the local level. Our key identifying assumption is that, conditional on this extensive set of controls and fixed effects, the share of organic farming within the buffer is exogenous and uncorrelated with the remaining unobserved determinants of housing prices.

We also estimate an alternative specification that provides a complementary interpretation by setting 100% conventional farming as a reference group. This allows us to directly quantify the premium (or discount) for avoiding conventional agriculture entirely, as well as the premium for converting conventional land to organic. Our second model is as follows

$$\text{Price}_{it} = \alpha_1(\text{ShareOrg}^{\text{r}}_{\text{it}} \times \text{AgriUAA}^{r}_{it}) + \alpha_2\text{NoAgriUAA}^{r}_{it} + X'_{it}\gamma + \xi_m + \xi_{dt} + \varepsilon_{it} \quad [7]$$

Here, $\text{NoAgriUAA}^{r}_{it}$ is an indicator for properties with no agricultural exposure. The omitted reference group is properties exposed to 100% conventional farming ($\text{NoAgriUAA}^{r}_{it} = 0$ and $\text{ShareOrg}^{\text{r}}_{\text{it}} = 0$). Thus, the coefficient α_2 captures the price differential between no agriculture and 100% conventional. α_1 measures the premium for a 100% organic farming relative to 100% conventional farming. By construction, these coefficients are a linear transformation of the parameters in Equation [6]: $\alpha_2 = -\beta_2$ and $\alpha_1 = -\beta_1$.

Main results

Table 2 reports estimates from our baseline specification (Equation 6), which decomposes the agricultural externality across various buffer sizes (250m to 2,000m). The model explains approximately 60% of the variance in housing prices. The signs of the coefficients remain robust across different specifications and buffer definitions.

Consistent with case (a) of our conceptual framework (Section 2), the results reveal a clear, distance-dependent price structure. We find a large and statistically significant disamenity associated with conventional agriculture. Relative to the no-agriculture baseline, exposure to 100% conventional farming (β_2) reduces property values by 6.8% within 250m, an effect that intensifies to 22.1% at 2,000m.

The marginal premium for organic farming (β_1) is statistically insignificant at 250m, suggesting that close-range disamenities common to all farming (e.g., noise, activity) dominate any organicspecific benefits. However, this premium becomes positive and significant from

500m, growing to +5.2 pp at 2,000m. While this organic premium substantially mitigates the agricultural externality, the implied net effect of a 100% organic landscape (given by $\beta_1 + \beta_2$) remains negative relative to the no-agriculture baseline (e.g., -16.9% at 2,000m).

<< Table 2 about here>>

Table 3 presents the complementary results from Equation [7], which sets 100% conventional farming as the reference group. By construction, these results confirm our main findings. The premium for no agricultural exposure (α_2) relative to conventional farming is +6.8% at 250m and +22.1% at 2,000m. The premium for 100% organic farming (α_1), also relative to conventional, is insignificant at 250m but rises to +5.2% at 2,000m. This indicates a significant willingness to pay to “green” the existing agricultural landscape.

<<Table 3 about here>>

We explore heterogeneity in Figure 2. Panel (a) shows that both marginal and total effects vary significantly by municipality type, with rural households exhibiting the highest valuation, followed by periurban households, while urban dwellers place the least value on proximity to organic land. Panel (b) highlights pronounced regional variation potentially driven by agricultural specialization. In regions characterized by intensive livestock production, such as Brittany, the organic premium is largest. Conversely, in northern regions (e.g., Hauts-de-France) dominated by largescale conventional field crops, the premium is negligible or negative. These patterns suggest that the capitalization of organic amenities is context dependent. The value of organic land appears to be magnified in areas where alternative (i.e., intensive conventional farming) generates greater disamenities.

<<Figure 2 about here>>

Our findings are robust to several alternative specifications (Appendix Table A4). Omitting fixed effects (Panel A) yields biased estimates, validating our preferred specification. In Panel B, we demonstrate that our findings are not driven by functional form assumptions, as the results remain stable under logarithmic transformations of the exposure variable. Panel C restricts the sample to properties within 1,500m of agricultural land. The stability of the coefficients under this smaller spatial bandwidth confirms that our baseline results are not driven by unobserved confounders in the broader 2,500m periphery.

The coefficients on the control variables (Table 2) align with standard theoretical predictions. Structural attributes exhibit the expected signs and magnitude. Prices increase with floor area (0.6%) and are lower for properties with fewer than five rooms. While the marginal effect per square meter is small, a one-standard-deviation increase in lot size raises prices by 5.54%. We observe a classic bid-rent gradient: prices decline by approximately 0.4% for every kilometer from the CBD. Access to public amenities (primary schools, train stations) and natural amenities (forests) is also positively valued. Interestingly, the coefficient on distance to waterways is positive but small (0.004%), suggesting that the amenity value of water proximity is marginally outweighed by associated risks (e.g., flooding) or nuisances. Neighborhood characteristics are strongly capitalized into housing prices. Socioeconomic variables (median income, unemployment rate) are strong predictors of housing price, while the prevalence of livestock facilities is confirmed as a local disamenity (-0.02 to -0.03%).

5. A Distance-based Analysis of Proximity

Empirical strategy

We complement our buffer-based analysis with a model focused on the nearest agricultural parcel. The baseline OLS specification is:

$$\text{Price}_{it} = \beta_1 \text{Organic}_{it} + \beta_2 \text{DistanceParcel}_{it} + \beta_3 \text{ParcelSize}_{it} + X'_{it}\gamma + \delta_m + \delta_{dt} + \varepsilon_{it} \quad [8]$$

Following Moore et al. (2016), Organic_{it} is an indicator variable equal to 1 if the nearest parcel to house i is managed under organic farming. $\text{DistanceParcel}_{it}$ is the distance (in km) from the centroid of the dwelling to that agricultural parcel, and ParcelSize_{it} is the size of the parcel. The coefficient of interest, β_1, measures the effect of proximity to organic farmland on housing prices.

This baseline OLS specification faces significant identification challenges due to endogeneity. Simultaneity bias (reverse causality) may arise if farmers convert to organic production systems in response to local demand for environment and health amenities. Moreover, as discussed in Section 4.1, non-random residential sorting introduces omitted variable bias. If households with strong preferences for environmental quality co-locate with organic farms, the resulting price premium may reflect these unobserved preferences rather than the amenity value of the land use itself. To mitigate these concerns, we employ a two-stage least squares (2SLS) strategy using exogenous variation in pedoclimatic suitability and the local organic supply chain as instruments for organic farming.

The first stage estimates the probability of organic land use as a function of our instruments and the vector of exogenous covariates as follows:

$$\begin{aligned} \text{Organic}_{it} &= \pi_1\left(\Delta_t^{sales} \times \text{DownIndustry}_{it}\right) + \pi_2 \text{SoilQuality}_{it} \\ &+ \pi_3 \text{DistanceParcel}_{it} + \pi_4 \text{ParcelSize}_{it} + X'_{it}\gamma + \delta_m + \delta_{dt} + \nu_{it} \quad [9] \end{aligned}$$

We leverage two sources of exogenous variation to isolate supply-side drivers of organic conversion. The first is an interaction, $\Delta_t^{sales} \times \text{DownIndustry}_{it}$. Here, Δ_t^{sales} represents the national growth in sales for relevant organic products. Since we study field crops, we focus on product categories that are either directly derived from field crops (e.g., grains, cereals) or indirectly influenced through their use as inputs (e.g., feed for livestock or ingredients for processed foods). This includes milk, dairy products, eggs, savory groceries, plant-based beverages, and fruit and vegetable juices. The variable DownIndustry_{it} is a binary indicator for the presence of downstream industries specialized in organic storage facilities within 5 km of the property. Derived from the FAO-GAEZ database, the second instrument SoilQuality_{it} is a soil quality index that relies on geological features (as described in Section 3.4).

The validity of our 2SLS strategy relies on two identifying assumptions: instrument relevance and the exclusion restriction.

Relevance. The interaction term captures exogenous shifts in the profitability of organic farming (i.e., a supply-side mechanism). National demand shocks (Δ_t^{sales}) are more likely to trigger farm-level conversion where local logistical capacity (DownIndustry_{it}) exists. Similarly, the second instrument (SoilQuality_{it}) proxies the agronomic comparative advantage of the land, affecting the feasibility and yield of organic systems relative to conventional production.

Exclusion Restriction. This condition requires that the instruments affect housing prices solely through the channel of local organic land use. For the soil instrument, we assume that, conditional on our vector of controls, geological endowments are orthogonal to contemporary local housing market dynamics. For the interaction instrument, the exclusion restriction is more complex. To ensure it is met, we construct DownIndustry_{it} carefully. First, we strictly exclude retail-oriented facilities (e.g., farm stores) to rule out direct consumption utility, and include storage-oriented facilities. Second, we define the instrument using a 5 km radius that is substantially larger than the 2.5 km sample restriction used in our main analysis. This spatial separation ensures that while the infrastructure remains accessible to farmers, it lies beyond the immediate hedonic neighborhood of the sampled properties, thereby mitigating concerns about direct capitalization of these externalities.

Diagnostic tests confirm the validity of our identification strategy. The Durbin-Wu-Hausman statistics (6.49 and 5.65) reject the null hypothesis of exogeneity, confirming that OLS estimates are inconsistent. Instrument relevance is strong: Kleibergen-Paap Wald F-statistics (62.915 and 63.411) exceed 60, substantially surpassing the conventional rule-of-thumb threshold of 10 and mitigating weak instrument concerns. First-stage estimates (Table 4) show that both instruments are statistically significant predictors of organic adoption. As expected, soil quality is positive, indicating that superior agro-ecological conditions facilitate the viability and sustainability of organic farming. The interaction term between national organic sales trends and the presence of organic downstream industries reduces significantly the likelihood of organic farming adoption. While this may seem counterintuitive, it is consistent with local congestion effects or market saturation. In areas with established organic supply chains, rising national demand may intensify competition for remaining land and inputs, creating barriers to entry that dampen the extensive margin of new conversions relative to areas with emerging potential.

Main results

Table 4 presents OLS (Columns 1-2) and 2SLS (Columns 3-4) estimates for the distance-based specification (Equation 8).

Regarding spatial controls, the results confirm that proximity to agricultural land is, on average, a net disamenity. The coefficient on distance to the nearest parcel is positive and statistically significant. A one-kilometer increase in distance is associated with a 17.9-18.6% appreciation in house prices. We also observe a positive coefficient on parcel size. This suggests that larger agricultural parcels act as a natural buffer that mitigate localized externalities (e.g., noise, dust, or odors) by increasing the average distance between the residence and farming activities such as plowing or spraying.

The OLS estimate for $\mathrm{Organic}_{it}$, our coefficient of interest, is small but positive (1.64%). However, consistent with our diagnostic tests, 2SLS estimates are substantially larger and reveal a significant premium of 37.4 to 40.4%. This magnitude implies that OLS estimates suffer from severe downward bias, likely driven by negative spatial sorting (organic farms locating in lower-value areas) or measurement error (attenuation bias). Correcting for these endogeneity issues unveils a substantial capitalization of immediate proximity to organic farming.

<<Table 4 about here>>

Our results are robust to a wide range of alternative specifications. OLS estimates (Appendix Table A5 in the Appendix) are stable to the inclusion of additional fixed effects, controls, and alternative transformations of distance (e.g., squared, log-transformed). We also perform sensitivity analysis on the 2SLS estimates (Appendix Table A6). We verify that our results hold when restricting the sample to the immediate vicinity of agricultural land (1.5 km) and when using alternative outer buffers (7.5 and 10 km) to define the $\mathrm{DownIndustry}_{it}$ instrument. As in our preferred specification, the alternative definitions enforce a buffer zone by excluding the 2.5 km radius around the dwelling. This prevents the instrument from picking up local industrial-related externalities, and ensuring the exclusion restriction is satisfied.

<< Figure 3 about here>>

Figure 3 presents the heterogeneous impacts based on our main IV specification. The premium varies by municipality type (Panel a). The effect is largest for periurban municipalities. This likely reflects strong sorting of environmentally conscious households into the urban fringe, where the demand for health and environmental amenities is highest. In contrast, the premium is smaller in rural areas, where agriculture is prevalent, and turns negative in urban areas. We also find significant regional divergence driven by local agricultural identity (Panel b). Housing markets in the Paris region (Ile-de-France) and southern France (e.g., Provence-Alpes-Côte d'Azur, Occitanie) place a higher value on organic farmland compared to northern agricultural regions. These differences highlight the role of sociocultural and economic factors, especially of characteristics such as high environmental awareness and the integration of agriculture into the tourism and landscape economy (e.g., scenic landscapes, high-value agricultural systems). Conversely, the effect is small or negative in northern regions dominated by large-scale conventional farming. Panel (c) uncovers crucial heterogeneity by crop type. While industrial field crops generate a large positive premium, consistent with households valuing the reduction of chemical drift, organic vineyards exhibit a negative coefficient. We interpret this as a trade-off between chemical avoidance and operational disamenities. Organic viticulture requires more frequent mechanical interventions (increasing noise and dust) and relies on cover cropping (inter-row vegetation). This visual complexity may be perceived as a deviation from the traditional aesthetic norm of "clean" (bare soil) viticulture, thereby acting as a local disamenity despite the reduction in pesticide use.

6. Discussion and Conclusion

Expanding organic farming is a central pillar of the EU Green Deal, with the ambitious goal of reaching 25% of agricultural land coverage by 2030. This study investigates the local welfare effects of this policy by measuring the capitalization of organic land use into housing values.

We demonstrate a complex, scale-dependent relationship. On the one hand, using a distance-based IV strategy, we show that conditional on proximity, households exhibit a large and significant willingness to pay for organic neighbors. However, given the baseline negative impact of agricultural proximity, organic certification acts as a mitigating factor (i.e., a second-best outcome for exposed households) rather than an absolute attractive force relative to non-agricultural land uses. On the other hand, our buffer-based approach nuances these findings and confirms that, in aggregate terms, agriculture remains a net local disamenity, even when organic. This reveals a clear hierarchy of preferences: at close range, households maximize utility by avoiding agriculture interfaces entirely, but, when proximity is unavoidable, organic land use is strictly preferred to conventional farming. These findings are complementary, not contradictory, and resolve a key ambiguity in the hedonic literature by distinguishing the marginal value of organic practices (captured by our 2SLS model) from the aggregate nuisance of farming intensity (captured by buffers). Households face a spatial trade-off: the reduction in chemical externalities (organic amenity) competes with the mechanical nuisances of cultivation (general disamenity) (Bergstrom and Ready, 2009). Consistent with case (a) of our conceptual framework, our results show that while general disamenities may dominate at the aggregate level, the specific valuation of “chemical-free” neighbors is high and significant when isolated from the confounding effect of farm location.

Our findings have direct policy implications. We identify a substantial positive externality generated by organic farming. However, the magnitude of the discrepancy between our OLS and 2SLS estimates suggests the amenity value of organic practices may be obscured by spatial sorting or low attribute salience. Consequently, market mechanisms alone likely lead to the under-provision of organic land. In this regard, policy interventions focusing exclusively on acreage expansion targets (e.g., *via* CAP subsidies) may prove insufficient if not complemented by informational policies (such as enhanced certification visibility, field-level signaling, and public awareness about organic agriculture or any type of "greener" practices) to ensure these environmental benefits are fully capitalized by local housing markets. For example, municipality-level signaling mechanisms, such as public banners modeled on France's "Pesticide-free municipality" program, could increase household awareness and lead to better capitalized positive externalities. Moreover, our heterogeneity analysis demonstrates that a "one-size-fits-all" subsidy approach is not sufficient. The premium for organic farming is not uniform - it is largest in periurban areas (where amenity demand is high), in specific regions (e.g., Ile-de-France, southern France), and for high-amenity crops (e.g., vineyards, fresh produce). To effectively align sustainability goals with market outcomes and reduce land-use conflicts, policy support should be targeted, prioritizing conversions in these high-value contexts where public preferences and environmental benefits are the greatest.

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Tables

Table 1: Summary statistics of selected variables

Variables	Unit	Mean	St. Dev.	Min	Max
Panel A: Outcome variable					
Price	€	183,686.900	133,900.700	5,605.263	1,769,139.000
Log Price		11.885	0.726	8.631	14.386
Panel B: Agricultural data					
Distance to the nearest parcel	km	0.418	0.461	0.0002	2.500
Organic	0/1	0.086	0.281	0	1
Parcel size	ha	2.109	4.803	0.0001	609.199
Panel C: House-level variables					
Building area	sq. meters	101.629	38.376	10	300
Lot size	sq. meters	1,151.493	1,384.919	12	9,999
Rooms	1-5	4.048	0.992	1	5
Proximity to the nearest CBD	km	33.004	24.510	0.005	142.115
Proximity to the nearest primary school	km	1.231	1.740	0.001	28.036
Proximity to the nearest forest	km	5.481	5.490	0.000	36.293
Proximity to the nearest train station	km	7.192	6.886	0.002	47.760
Proximity to the nearest hospital	km	4.258	4.211	0.001	34.701
Proximity to the nearest waterway	km	467.075	605.646	0.000	13,436.870
Panel D: Municipality-level variables					
Count of livestock activities	number	24.815	39.260	0	704
Median income	€	21,914.000	3,389.649	0	51,340
Unemployment rate	p.p.	0.123	0.049	0.000	0.571
Social renting rate	p.p.	0.104	0.101	0.000	0.689
Panel E: Instrumental variables					
Downstream industry within 5km	0/1	0.115	0.318	0	1
Downstream industry within 7.5km	0/1	0.180	0.385	0	1
Downstream industry within 10km	0/1	0.232	0.422	0	1
National organic growth demand	p.p.	0.092	0.095	−0.042	0.227
Soil quality	norm.	0.100	0.115	0.000	0.600

Notes: p.p.: percentage points. The data sources include the DV3F, LPIS, BDTOPO, Agence Bio, and INSEE 2016-2022. The sample is restricted to houses living within 2.5 kilometers of an agricultural parcel.

Table 2: Main results - Effects of agricultural presence and composition on housing prices

	Dependent variable: Log Price				
	Buffer size around house				
	250m	500m	1,000m	1,500m	2,000m
	(1)	(2)	(3)	(4)	(5)
ShareOrg × AgriUUA	0.0012	0.0174***	0.0330***	0.0435***	0.0522***
	(0.0018)	(0.0016)	(0.0017)	(0.0019)	(0.0021)
AgriUAA	−0.0680***	−0.1360***	−0.1951***	−0.2139***	−0.2209***
	(0.0007)	(0.0007)	(0.0009)	(0.0012)	(0.0016)
Building area	0.0060***	0.0059***	0.0059***	0.0059***	0.0059***
	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)
Lot size	0.00005***	0.00005***	0.00004***	0.00004***	0.00004***
	(0.000000)	(0.000000)	(0.000000)	(0.000000)	(0.000000)
One room[a]	−0.6260***	−0.6298***	−0.6320***	−0.6309***	−0.6292***
	(0.0033)	(0.0033)	(0.0033)	(0.0033)	(0.0033)
Two rooms	−0.3301***	−0.3343***	−0.3361***	−0.3348***	−0.3329***
	(0.0017)	(0.0017)	(0.0017)	(0.0017)	(0.0017)
Three rooms	−0.1381***	−0.1411***	−0.1424***	−0.1412***	−0.1396***
	(0.0009)	(0.0009)	(0.0009)	(0.0009)	(0.0009)
Four rooms	−0.0048***	−0.0051***	−0.0059***	−0.0061***	−0.0059***
	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)
Distance to the nearest CBD[b]	−0.0044***	−0.0042***	−0.0041***	−0.0042***	−0.0044***
	(0.00002)	(0.00002)	(0.00002)	(0.00002)	(0.00002)
Distance to the nearest primary school	−0.0060***	−0.0075***	−0.0087***	−0.0086***	−0.0082***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Distance to the nearest forest	−0.0012***	−0.0011***	−0.0011***	−0.0013***	−0.0014***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Distance to the nearest trainstation	−0.0072***	−0.0068***	−0.0070***	−0.0073***	−0.0075***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Distance to the nearest hospital	−0.0068***	−0.0064***	−0.0069***	−0.0073***	−0.0074***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Distance to the nearest waterways	0.00004***	0.00004***	0.00004***	0.00004***	0.00004***
	(0.000000)	(0.000000)	(0.000000)	(0.000000)	(0.000000)
Count of livestock activities	−0.0002***	−0.0003***	−0.0003***	−0.0003***	−0.0002***
	(0.00001)	(0.00001)	(0.00001)	(0.00001)	(0.00001)
Median income	0.0001***	0.0001***	0.0001***	0.0001***	0.0001***
	(0.000000)	(0.000000)	(0.000000)	(0.000000)	(0.000000)
Unemployment rate	−0.6841***	−0.8209***	−0.7625***	−0.6609***	−0.6017***
	(0.0112)	(0.0112)	(0.0111)	(0.0111)	(0.0111)
Social renting rate	0.9870***	0.9350***	0.9846***	1.0284***	1.0543***
	(0.0049)	(0.0048)	(0.0048)	(0.0048)	(0.0048)
Controls	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes
Dep. × year FE	Yes	Yes	Yes	Yes	Yes
Observations	2,904,278	2,904,278	2,904,278	2,904,278	2,904,278
R^2	0.5952	0.5982	0.5995	0.5979	0.5961
Implied Effects:					
Effect of 100% organic ($\beta_1 + \beta_2$)	-0.0668***	-0.1186***	-0.1622***	-0.1704***	-0.1687***
Hypothesis Tests (p-values):					
$H_0: \beta_1 \leq 0$ (Organic not better)	0.2519	0.000	0.000	0.000	0.000
$H_0: \beta_2 \geq 0$ (Conv. not negative)	0.000	0.000	0.000	0.000	0.000
$H_0: \beta_1 + \beta_2 \geq 0$ (Organic negative)	0.000	0.000	0.000	0.000	0.000

Notes: This table reports the effects of organic exposure on housing prices in metropolitan France during the period 2016-2022. The reference group is houses with no agricultural exposure. β_1 is the marginal effect per pp increase in organic share within UAA (conditional on exposure). β_2 is the effect of any exposure when $\mathrm{ShareOrg} = 0$ (i.e., 100% conventional). The sum $\beta_1 + \beta_2$ corresponds to the effect of 100% organic. Regressions are run at the transaction level. [a]Five rooms is the reference group for rooms. [b]Distance is in kilometers for all variables that are part of the analysis. Cluster-robust standard errors in parentheses. Significance levels are ***p < 0.01; **p < 0.05; *p < 0.10.

Table 3: Additional results - Effects relative to 100% conventional

	Dependent variable: Log Price				
	Buffer size around house				
	250m (1)	500m (2)	1,000m (3)	1,500m (4)	2,000m (5)
ShareOrg × AgriUAA	0.0012	0.0174***	0.0330***	0.0435***	0.0522***
	(0.0018)	(0.0016)	(0.0017)	(0.0019)	(0.0021)
NoAgriUAA	0.0680***	0.1360***	0.1951***	0.2139***	0.2209***
	(0.0007)	(0.0007)	(0.0009)	(0.0012)	(0.0016)
Controls	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes
Dep. × year FE	Yes	Yes	Yes	Yes	Yes
Observations	2,904,278	2,904,278	2,904,278	2,904,278	2,904,278
R^2	0.5952	0.5982	0.5995	0.5979	0.5961

Notes: Reference: 100% conventional farming ($\text{AgriUAA} = 1$, $\text{ShareOrg} = 0$). $\alpha_1$represents the effect of organic share (0 to 100%) conditional on exposure, while α_2 is the premium for no agricultural exposure. Cluster-robust standard errors in parentheses. Significance levels are ***p < 0.01, **p < 0.05, *p < 0.10.

Table 4: Main results - Effects of the nearest agricultural parcel on housing prices

	Dependent variable: Log Price			
	OLS		2SLS	
	(1)	(2)	(3)	(4)
Distance to parcel	0.1877***	0.1864***	0.1793***	0.1786***
	(0.0007)	(0.0007)	(0.0028)	(0.0028)
Organic	0.0163***	0.0164***	0.4038***	0.3737***
	(0.0010)	(0.0010)	(0.1281)	(0.1271)
Parcel size		0.0010***		0.0010***
		(0.0001)		(0.0001)
Controls	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Dep.×year FE	Yes	Yes	Yes	Yes
Observations	2,928,110	2,928,110	2,927,843	2,927,843
R^2	0.5735	0.5735	0.5520	0.5553
	Dependent variable: Organic			
First stage instruments				
$\Delta_t^{sales} \times \text{DownIndustry}_{it}$			-0.0540***	-0.0538***
			(0.0090)	(0.0090)
SoilQuality_{it}			0.0244***	0.0245***
			(0.0021)	(0.0021)
KP F-statistic			62.915 ***	63.411***
Durbin-Wu-Hausman ($\chi^2(1)$ value)			6.486*	5.645*

Notes: This table reports the effects of organic exposure on housing prices in metropolitan France during the period 2016-2022. Regressions are run at the transaction level. [a] Distance is in kilometers for all variables that are part of the analysis. Cluster-robust standard errors in parentheses. Significance levels are ***p < 0.01, **p < 0.05, *p < 0.10.

Figures

- Figure 1: Exposure to agricultural amenities as a function of distance to the plot

Notes: Solid line: organic farming; dotted line: conventional farming. (a) rapid decay of landscape amenity value, (b) high landscape amenity value, (c) high negative disamenities.

- Figure 2: Heterogeneity analysis - Effects of organic farming on house prices across buffers
  (a) By municipality type
  (b) By region (NUTS2)

Notes: Figure 2 displays marginal and total effects of the share of organic farmland on housing prices by municipality type (Panel a) and for five representative regions (Panel b). The marginal effect is the price change associated with moving from 100% conventional to 100% organic within an exposed buffer, holding other factors constant. The total effect is the price difference between a dwelling located in a fully organic and exposed area and a non-exposed dwelling, *ceteris paribus.* In terms of Equation [6], the marginal effect corresponds to β_1, and the total effect corresponds to $\beta_1 + \beta_2$. Equivalently, in terms of Equation [7], the marginal effect is α_1, and the total effect is $\alpha_1 + \alpha_2$. Points represent point estimates. Estimates come from log-linear hedonic models with structural, amenity, and socioeconomic controls, month and year-department fixed effects. Effects are reported as percentage price changes.

Standard errors are clustered at the dwelling level, and vertical bars show 95\% confidence intervals.

Municipality types are distinguished by line style: urban (solid), periurban (long-dash), and rural (dotted). For Panels (c) and (d), the region codes used in this figure correspond to the following French administrative regions (NUTS2): 11 (Ile-de-France), 24 (Centre-Val de Loire), 27 (Bourgogne-Franche-Comté), 28 (Normandie), 32 (Hauts-de-France), 44 (Grand Est), 52 (Pays de la Loire), 53 (Bretagne), 75 (Nouvelle-Aquitaine), 76 (Occitanie), 84 (Auvergne-Rhône-Alpes), and 93 (Provence-Alpes-Côte d'Azur). Five regions are selected based on effect magnitudes at 2,000m (two highest, two lowest, one median). Background lines (light gray) show trajectories for all other regions.

- Figure 3: Heterogeneous effects of organic farming proximity (IV estimates)
  (a) By municipality type
  (b) By region (NUTS2)
  (c) By crop type

Notes

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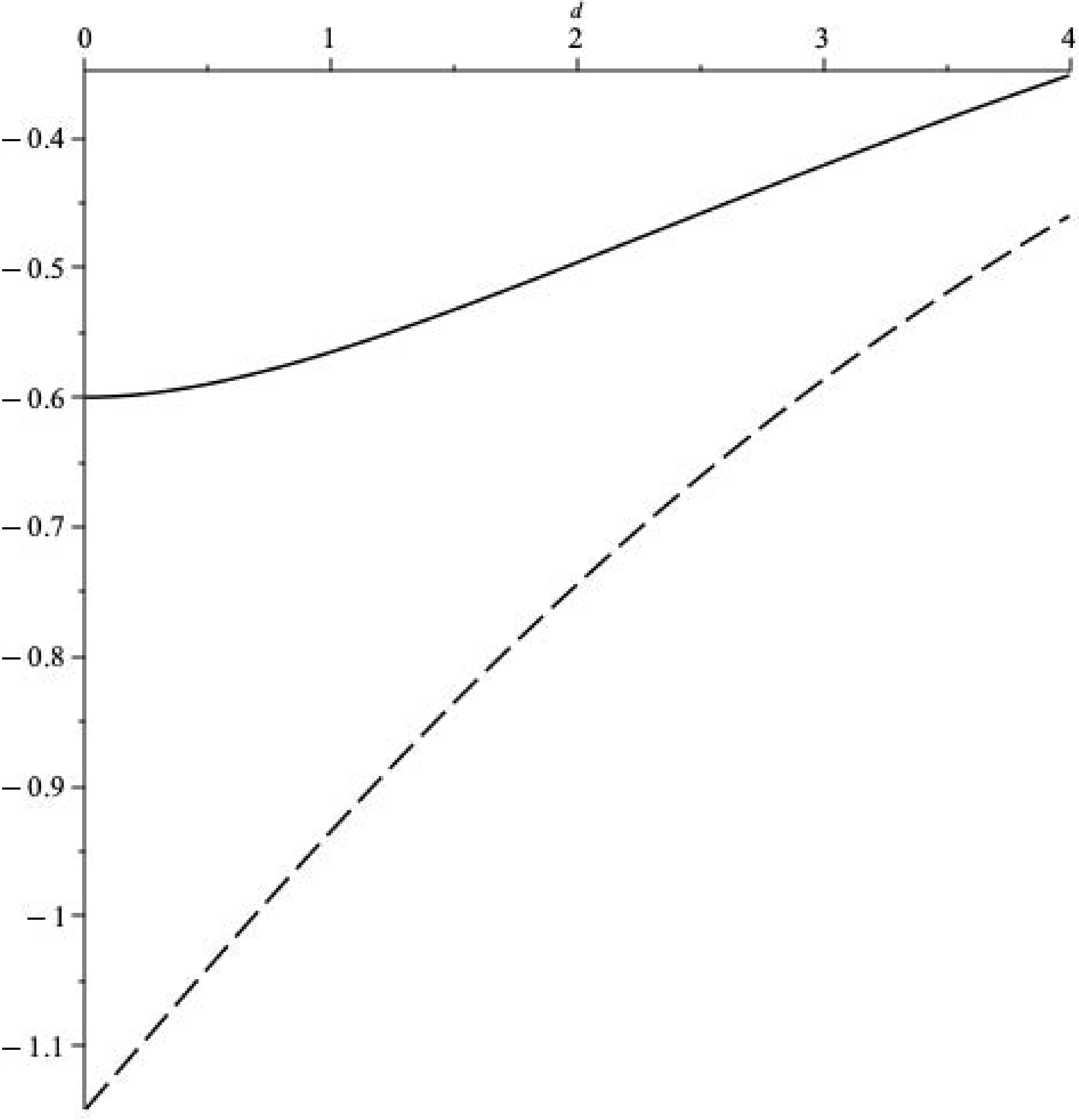
[1] According to Regulation (EU) 2018/848 on organic production and labeling of organic products.

[2] For the sake of conciseness, we do not develop the buffer approach, but results are comparable.

[3] The LPIS tracks crop cover but excludes livestock. As discussed in Section 3.4, we control for animal husbandry, a potential source of local disamenities, using an alternative data source.

[4] In France, educational zoning is governed at multiple administrative levels. Municipalities assume responsibility for schools, whereas departments manage middle schools (*collèges*), and regions and *rectorats* regulate high schools (*lycées*). Due to data limitations regarding spatial zoning, we rely on distance to the nearest primary school as a proxy for educational access.

[5] The nonlinearity in the relationship between house price and attributes is widely recognized, even though most empirical studies employ flexible functional forms or simple linear models. Choice between these forms is based on *a priori* and empirical testing. Based on explanatory power, we use a log-linear specification for the preferred model. Consequently, the OLS estimated coefficient can be interpreted as the semi-elasticity of the corresponding characteristic. See Lancaster (1966) and Rosen (1974) for the theoretical basis of hedonic regressions and Can (1992); Cassel and Mendelsohn (1981); Halvorsen and Pollakowski (1981) and Triplett (2001) for a discussion on the choice of functional form for hedonic price equations.


d
0
1
2
3
4
−0.4
−0.5
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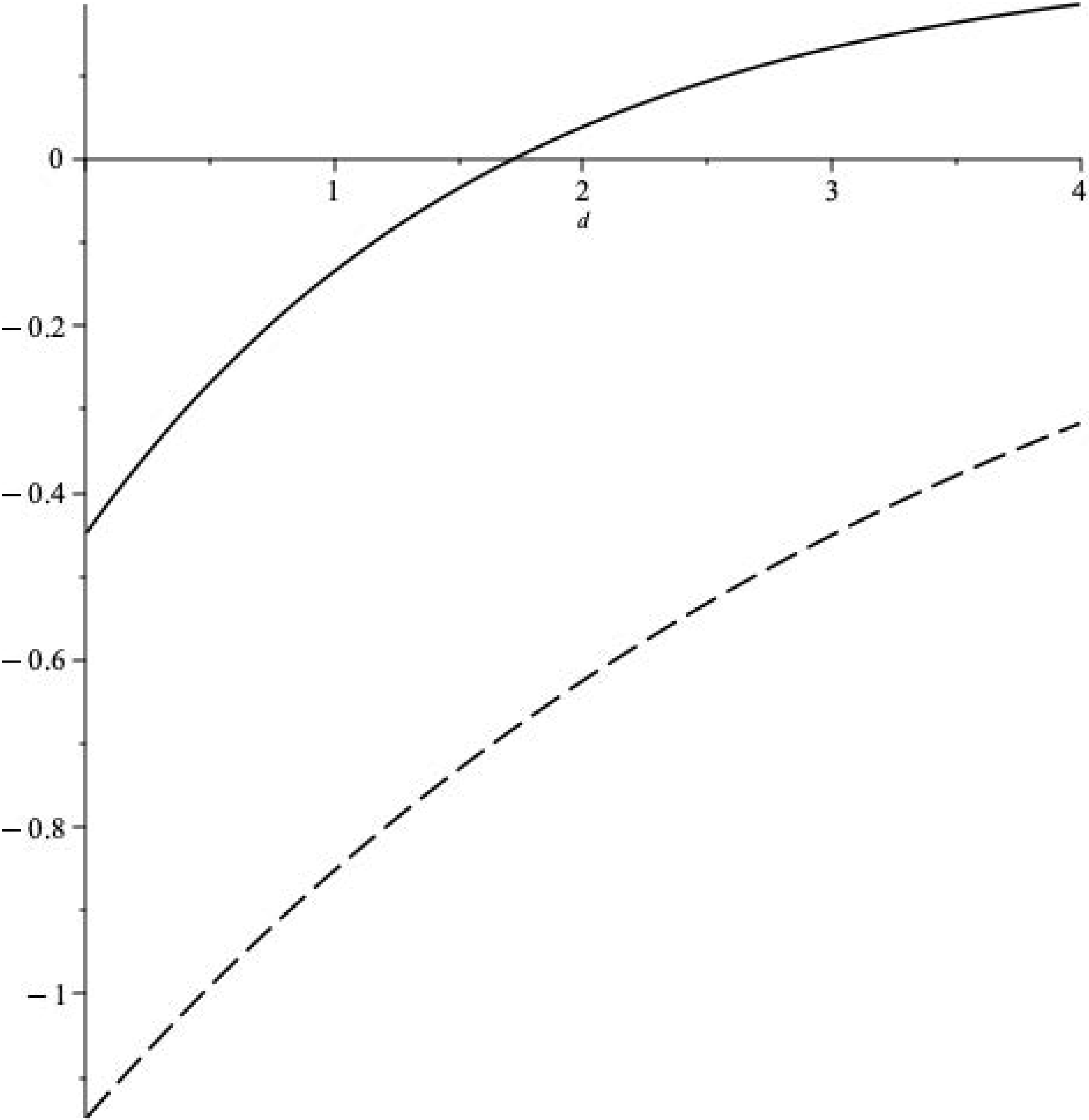
−1
−1.1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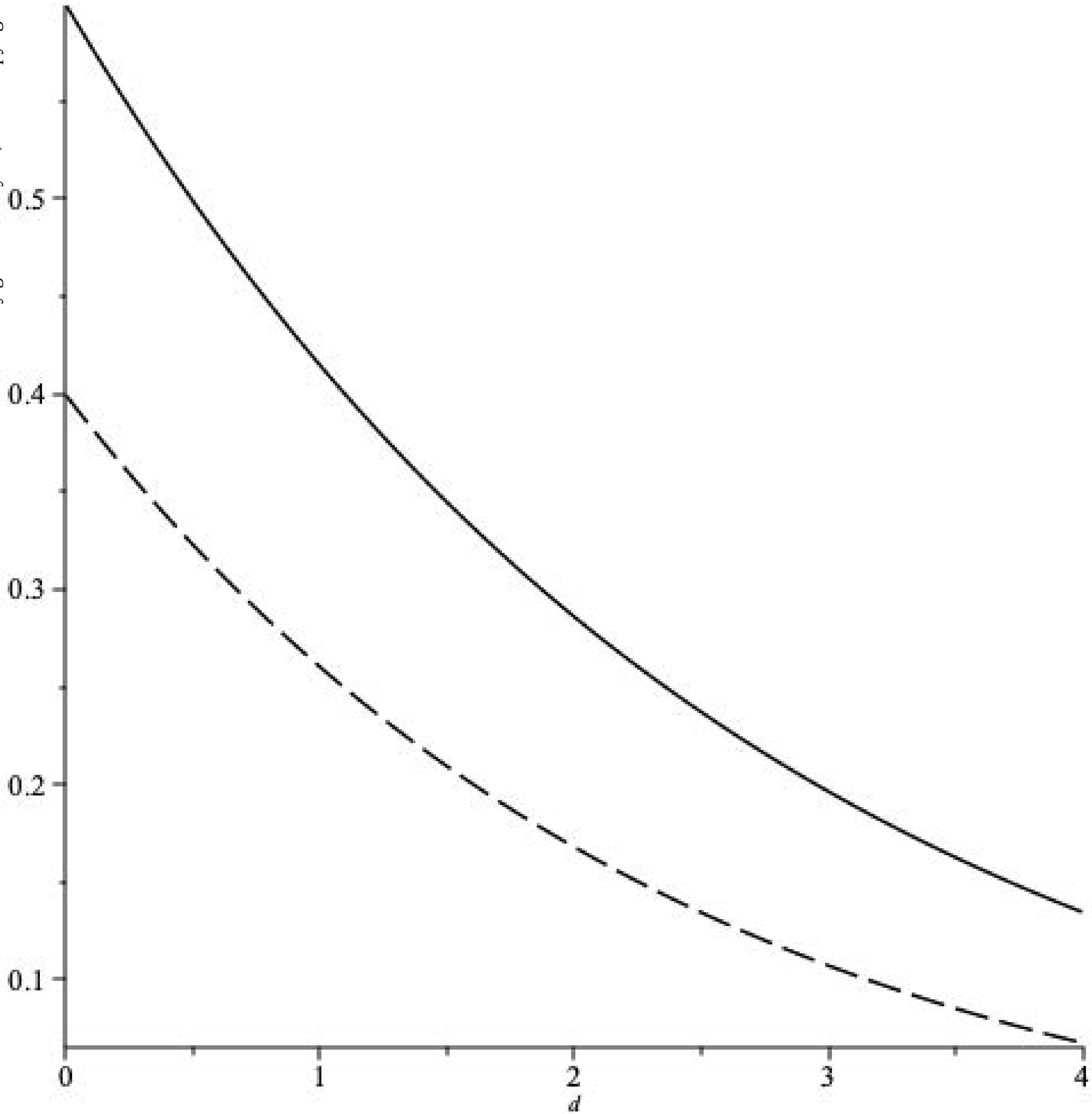
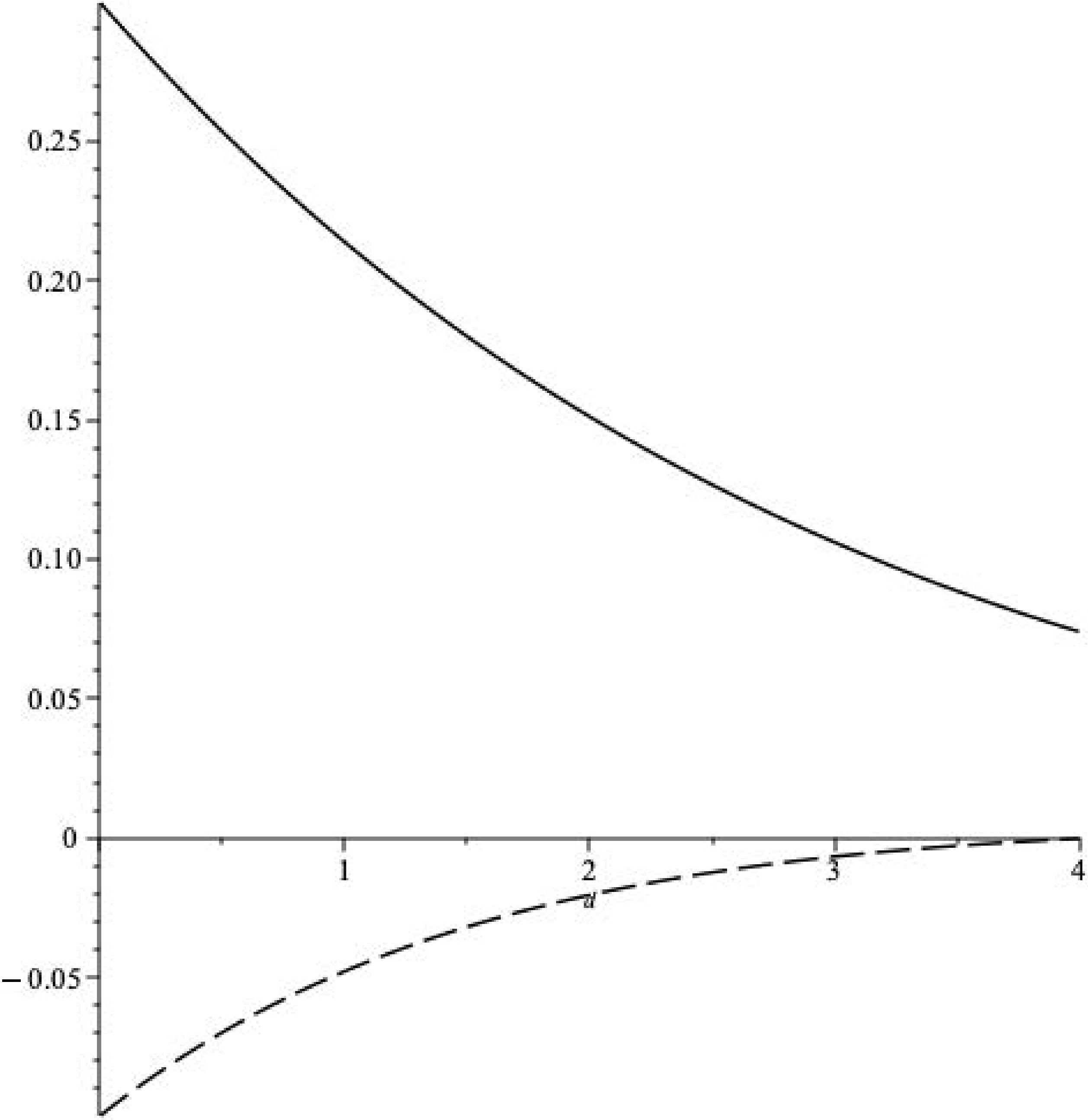
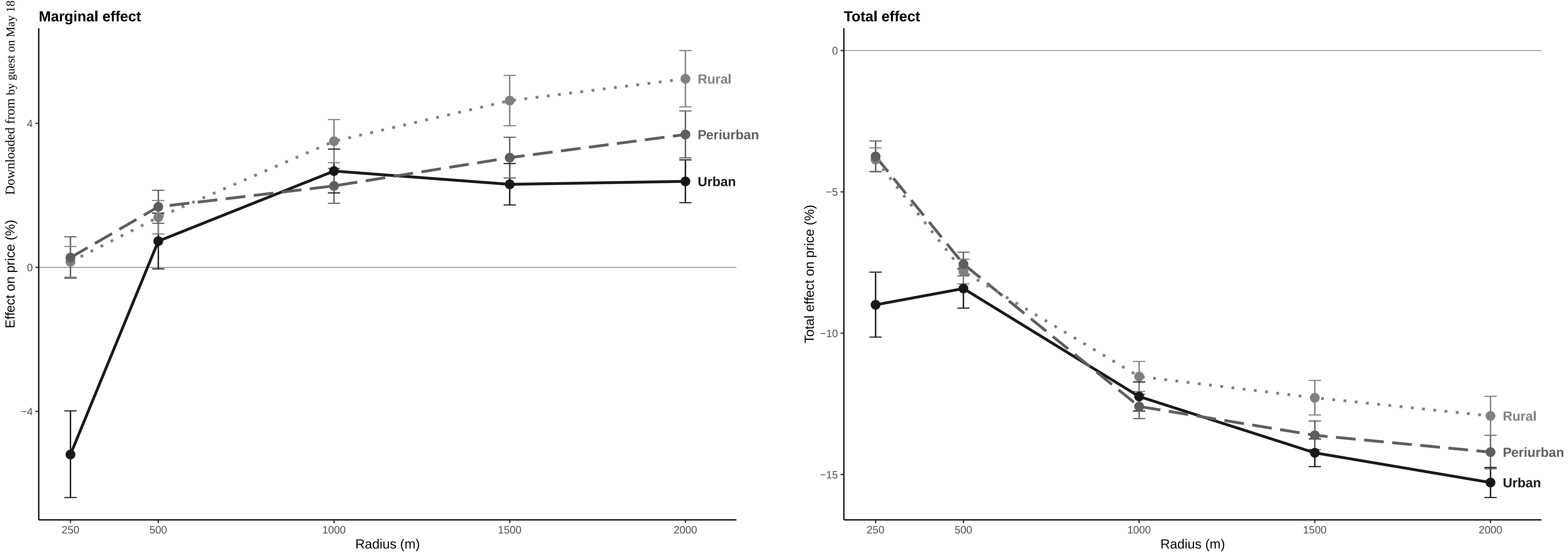
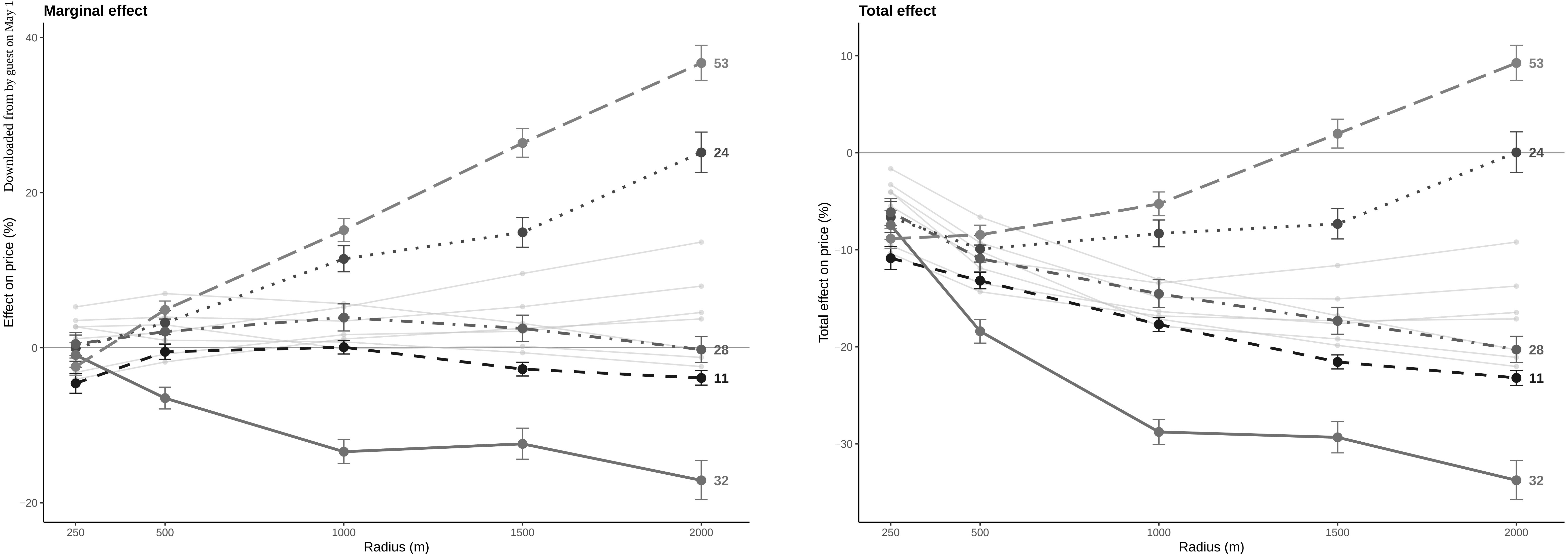
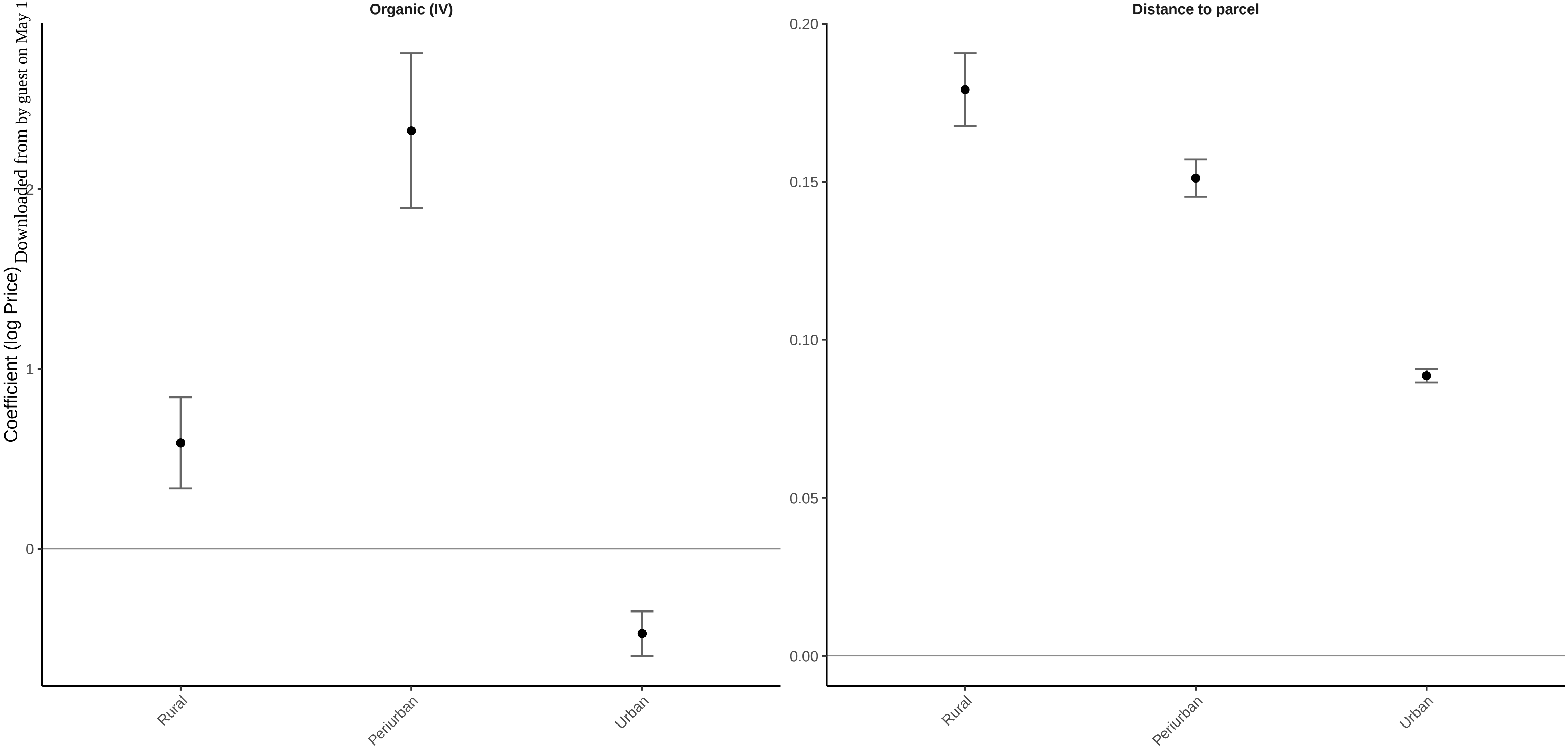
1
2
3
4
d

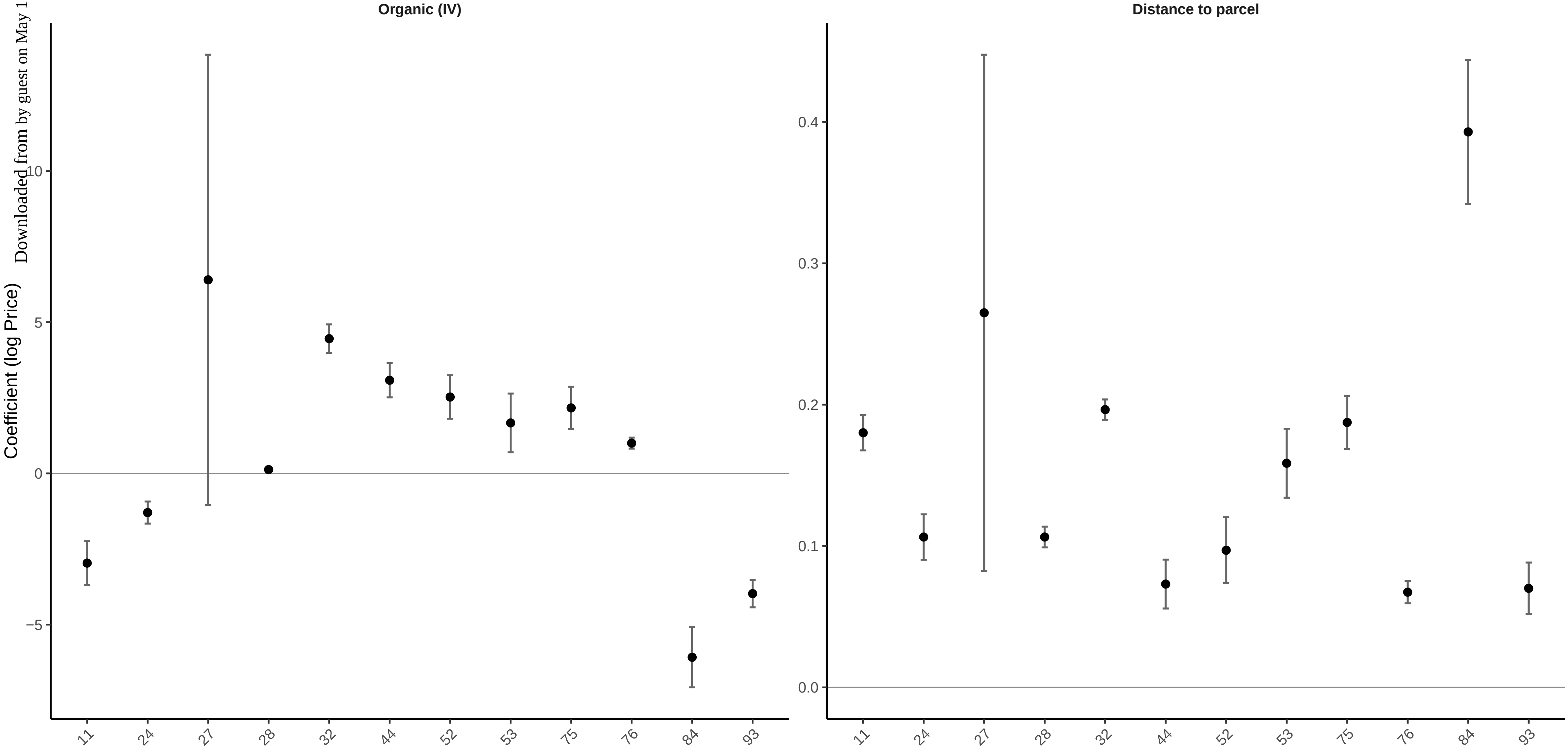

0.5
0.4
0.3
0.2
0.1
0
1
2
3
4
d

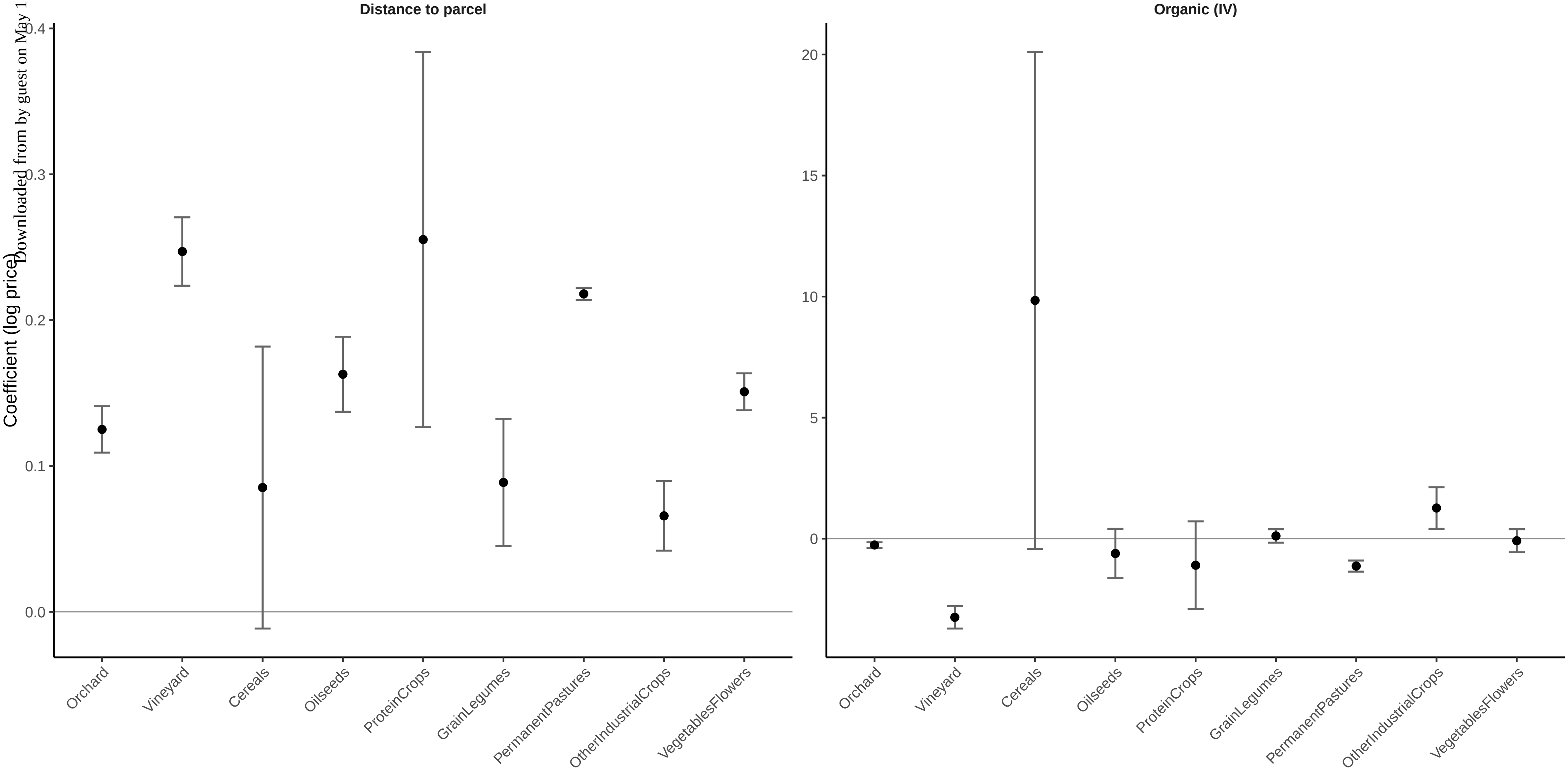

0.25
0.20
0.15
0.10
0.05
0
−0.05
1
2
3
4
a


Marginal effect
Effect on price (%)
4
0
−4
250
500
1000
1500
2000
Radius (m)
Rural
Periurban
Urban
Total effect
Total effect on price (%)
0
−5
−10
−15
250
500
1000
1500
2000
Radius (m)
Rural
Periurban
Urban


Marginal effect
Effect on price (%)
40
20
0
−20
250
500
1000
1500
2000
Radius (m)
53
24
28
11
32
Total effect
Total effect on price (%)
10
0
−10
−20
−30
250
500
1000
1500
2000
Radius (m)
53
24
28
11
32


Organic (IV)
Distance to parcel
Coefficient (log Price)
0
1
2
0.00
0.05
0.10
0.15
0.20
Rural
Periurban
Urban
Rural
Periurban
Urban


Organic (IV)
Distance to parcel
Coefficient (log Price)
10
5
0
−5
0.4
0.3
0.2
0.1
0.0
11
24
27
28
32
44
52
53
75
76
84
93


Distance to parcel
Organic (IV)
Coefficient (log price)
0.4
0.3
0.2
0.1
0.0
20
15
10
5
0
Orchard
Vineyard
Cereals
Oilseeds
ProteinCrops
GrainLegumes
PermanentPastures
OtherIndustrialCrops
VegetablesFlowers