Economic Modelling 64 (2017) 638–645

Contents lists available at ScienceDirect

Economic Modelling

journal homepage: www.elsevier.com/locate/econmod

The importance of being remembered: Prices for cemetery plots in the US

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ARTICLE INFO

JEL classification:
L85
Z13

Keywords:
Real estate
House prices
Grave prices

ABSTRACT

The economic literature on end-of-life choices assumes that the utility of future generations is internalized by current generations through gifts and bequests. This explanation, however, cannot account for the decision to buy cemetery plots. This paper uses an original data set to look at the determinants of the grave prices in the US. "After-life" housing services are complements to "in-life" housing services. We find no evidence of selection bias associated with religious affiliation.

1. Introduction

This paper addresses a largely overlooked issue in economics: the market for cemetery plots. The importance of the funeral housing market cannot be underestimated. In the US, funeral services are a $16 billion a year industry, with about 25,000 businesses and with an average profit margin which increased from 5.8 percent in 2008 to 6.5 percent in 2013 (Barrett, 2013). The current death rate of 0.8% per annum implies an estimated need for 1.76 million burial or entombment spaces per year. According to the *Final Arrangements Network*, every year about 1.5 million people look for a cemetery property in USA.[1] Nearly 30% of the US population already own some kind of cemetery property. Current demographic trends are likely further to increase pressure on burial spaces, which are expected to become scarce especially in urban areas (McManus, 2015; Tsang, 2015). (Fig. 1).

One possible reason for the neglect of the market for funeral services is the notion that a rational *homo oeconomicus* ought not to be concerned with this issue. Yet this view does not take into account the overwhelming historical importance attached to burial according to the majority of social and religious norms, at least in Western countries. In standard models in economics, individuals do not attach utility to what happens after their death unless they are linked to their descendants or to future generations through other-regarding preferences. Economics, in spite of its reputation as "the dismal science", tends to ignore the issue of death and burial. The infinitively-lived representative agent model is the standard workhorse in intertemporal economics and, even when death is allowed, the infinite-horizon paradigm can be restored by assuming that altruistic generations are linked by a perfect chain of gifts and bequests, possibly modified to allow for strategic interactions between generations as in the classic paper by Bernheim et al. (1985).

It is however difficult to motivate the purchase of cemetery plots as a direct form of altruism towards one's children: rather, this can be justified by the desire to be remembered. A cemetery burial will make it easier to keep the memory of one's ancestors alive, and knowledge of this could generate a positive utility. Individuals could consider that their descendants will find comfort from visiting their grave. Visiting cemeteries and funerary homes and remembering one's ancestors transmit cultural and familial attachment across generations.[2]

Other social science disciplines have also largely ignored burial practices and cemetery grounds. Exley (2004) argues that such scant attention may reflect a societal instinct for self-preservation, which may be related to the need to exorcise the deep anxieties associated with the fear of death (Becker, 1973; see also Solomon et al., 2015). Studies of the architectural and geographic aspects of cemeteries as "total landscapes" have also been very sparse: Francaviglia (1971) is one of the few examples.

Economic contributions to the field include Harrington and Krynski (2002) and Harrington (2007), who provide evidence on the lack of competition in the funeral services market, and Case and Menendez (2011), who examine funeral expenses by South African households.

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[1] Private communication by *Final Arrangements Network* to the authors. The *Network* provides funeral and cremation services and lists plots for purchase and for sale across the USA.

[2] We are very grateful to a referee for this suggestion.

http://dx.doi.org/10.1016/j.econmod.2017.05.002
Received 18 July 2016; Received in revised form 12 April 2017; Accepted 3 May 2017
Available online 15 May 2017

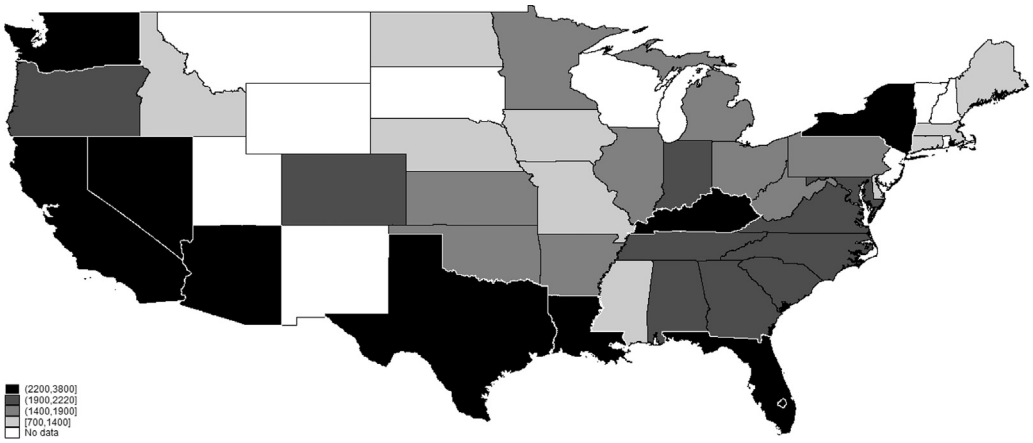

Fig. 1. Grave prices by state.

Hussein and Rugg (2003), Wickersham and Yehl (2013) and Longoria (2014) focus on the management of cemeteries, whilst Harrington and Treber (2013) look at the market for cemeteries and funeral establishments. In a recent paper, Faye and Channac (2016) analyse the main determinants of burial plot pricing in French cemeteries using a hedonic model.

This paper contributes to the literature by analysing the market for cemetery properties in the US, which is unregulated compared to other countries and thus approximates a competitive market. We make use a hitherto unutilised data set based on the asking prices listed by *Grave Solutions*, a company founded in 1996 which manages a large resale programme for cemetery properties. We collected the selling price offers for all US states in December 2010. In total, we obtained data on 10,674 advertisements. These include information on the cemetery name, city, state, property type, and the selling offer price.[3] We could also establish whether the transaction referred to a direct sale, or whether *Grave Solutions* was acting as a broker between a buyer and a seller. The latter transactions have been excluded from the analysis, which therefore only includes direct sales between parties.

In a relatively unregulated market like the US it is not uncommon to find advertisements of grave exchanges due to migration to a different State. This secondary market for graves offers a unique opportunity to carry out an empirical investigation of the market for funeral services. As a rule, funeral homes are not allowed to offer a discount from their general price list.[4] Hence, the prices at which cemetery plots are put for sale by funeral homes may not be consistent with market clearing. However, the prices at which cemetery spaces are exchanged through a resale programme would reflect more closely the balance between demand and supply of funeral plots.

We have also collected data on house prices, in order to be able to compare them with grave prices. A data set on real estate selling offer prices has been constructed from *Trulia Real Estates*, which reports house prices by neighbourhood, city, county, and state. The information on house prices has been matched with the data on grave prices to investigate their comovements and determinants.

It could be argued that grave and housing prices are both closely related to the price of land (see for instance Harvey and Jowsey, 2004), and therefore it is important to account for the latter in order to establish whether house prices still have an influence on grave prices, once the price of land is controlled for. In order to address this potential criticism, we made use of data on land prices from the *Lincoln Institute of Land Policy*. Land prices are computed as the difference between the home value and the cost of building a new 1,800-square foot one-story home. In addition to land prices, we also measured the regulatory environment for the housing market with the help of the *Wharton Residential Land Use Regulatory Index* developed by Gyourko et al. (2008). This indicator measures the stringency of land use control across over 2000 jurisdictions in the US.[5]

We consider a simple demand and supply model where the services from both real estate and graves enter individuals' utility function, and derive testable propositions to analyse the relationship between housing when alive and after death. In the empirical analysis we control for a number of additional possible determinants of the housing price, such as demographic and religious variables, and for the potential endogeneity of house prices. We also carry out a sensitivity analysis to assess the robustness of our findings with respect to the intensity of religious affiliation.

The structure of the paper is as follows. Section 2 sets out a simple choice theoretic model for both conventional and funeral housing services. Section 3 describes the data used in the analysis. Section 4 presents and discusses our main empirical findings. Section 5 carries out a sensitivity analysis to establish the robustness of our results. Section 6 concludes.

2. The market for housing services

We consider a very simple model as a guide to the empirical analysis. Because of the cross-sectional nature of our data, we would not be able to study the implications of intertemporal choice nor the possible strategic interactions among family members pertaining to the demand for funeral services. We therefore consider a lifetime utility function for the household, whose arguments are the consumption of after-life, or funeral housing services h_1, the consumption of in-life, or conventional, housing services h_2, and the consumption of a residual composite commodity c:

$$U(h_1, h_2, c; \boldsymbol{x}_D) \tag{1}$$

where $\boldsymbol{x}_D$ represents a vector associated with individual preferences, including religious beliefs and demographic characteristics, which capture heterogeneity across households. The utility function $U(h_1, h_2, c; \boldsymbol{x}_D)$ is increasing in all its arguments and strictly quasi-concave. As explained in the introduction, the inclusion of the funeral housing services h_2 is motivated by the desire to be remembered after the end of one's life. The lifetime budget constraint takes the form:

$$p_1 h_1 + p_2 h_2 + c \leq y \tag{2}$$

[3] The paper considers the asking prices because our implicit assumption is that they approximate prices at which cemetery plots are actually bought and sold. In this perspective they can be considered equilibrium price levels.

[4] Their prices are regulated by the Federal Trade Commission, which can impose penalties for violations of their rules (FTC, 2015).

[5] The level of regulation for the use of land can have a relevant impact on house prices (Zhang et al., 2013).