Fondazione Eni Enrico Mattei

Redeveloping Derelict and Underused Historic City Areas: Evidence from a Survey of Real Estate Developers

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Summary

Infill redevelopment—the transformation of previously used urban sites—is generally regarded as an important way to attain environmental and urban sustainability goals. At many locales, however, such urban renewal, community development, and tax revenue goals must be reconciled with historic preservation objectives. Are economic incentives and regulatory relief useful tools for encouraging reuse of abandoned or underutilized urban sites with historic buildings? Answering this question is of key importance for many European cities and for older US cities, and has important implications in terms of urban sustainability and "smart growth" initiatives. We use conjoint choice experiments to explore the relative importance of economic incentives, regulatory relief, land use and property regime offerings at underutilized historical sites in Venice, Italy. We survey real estate developers and investors, and ask them to choose between pairs of hypothetical projects in three Venice locations, as well as between one of these projects and the alternative to do a development project elsewhere. Statistical models of the responses to these choice questions indicate that respondents are sensitive to the price of acquiring the land (and hence to any policies that influence prices), and especially sensitive to the property regime that would be granted to developers and investors and to the allowable land use. Contrary to expectations, our respondents were insensitive to tightening or relaxing the stringency of building conservation restrictions. Our findings sound a common theme with Howland (2004), who warns that redevelopment of previously used sites in Baltimore is impaired by obsolete land uses, zoning and infrastructure (but not by suspected or actual contamination). We conclude that the City should focus on offering land uses and property regimes that are more in tune with developer demand.

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1. Introduction and Motivation

Local and national governments have traditionally used zoning and land use restrictions, as well as regulation and economic incentives, to influence and shape cities, neighborhoods within cities, and local economic activities. Infill redevelopment—the transformation of previously used urban sites—is generally regarded as an important way to attain environmental and urban sustainability goals, and a key component of "Smart Growth" initiatives. At many locales, however, such urban renewal, community development, and tax revenue goals must be reconciled with historic preservation objectives (ICMA, 2003; Noonan, 2006).

A number of economic incentives, regulatory and liability relief tools are currently available or under consideration at many locales to encourage urban infill redevelopment (see Bartik, 2004). De Sousa (2000), Alberini et al., (2005), and Wernstedt et al. (2006), have studied the desirability of policies targeted at idle and contaminated properties by directly interviewing developers and other potentially affected parties.

Are the same or similar incentives useful when the abandoned or underutilized urban infill sites are properties of historical, artistic or architectural interest? In this paper, we attempt to answer this question focusing on a specific city (Venice, Italy) where such sites are in abundant supply, and on the economic agents most directly involved in redevelopment decisions (real estate developers and investors). We use survey-based stated-preference methods.

Earlier literature has assessed the attractiveness of economic inducements to developers by observing the occurrence of actual redevelopment projects and land use changes as economic incentives are established (or repealed) over time or by exploiting their variation over a relatively broad geographical area or jurisdiction (Bartik, 2004).

These studies have used regression analyses and controlled for other characteristics of properties or policies thought to influence redevelopment.

Unfortunately, these analyses are not possible with buildings with historical and cultural value in Venice due to (1) the lack of transactions (these buildings or complexes are owned by the local or national government, and are currently sitting idle), (2) the lack of policy variation over space and time, and (3) the very small study area. Moreover, if even transactions did occur, (4) there is a pervasive price misreporting problem.[1] We circumvent these problems by using stated-preference methods and asking people what they would do under well-specified hypothetical circumstances.

In our questionnaire we query real estate developers about the factors that they find attractive (or unattractive) in a place like Venice, and on the policy offerings that could be devised to attract real estate development projects and investments in the city. We ask a series of direct questions to investigate the former issue, and deploy a stated-preference approach to answer the latter.

The stated-preference questions in our survey instrument are conjoint choice experiments that ask respondents to focus attention on three abandoned or underused areas in the city of Venice—namely, (i) the Santa Marta Waterfront, and (ii) Arsenale Darsena Grande, the central portion of the Arsenale, the ancient shipbuilding yard, and (iii) Arsenale Bacini, the easternmost part of the Arsenale. Of these three areas, the one with the highest historic value, and the one that is currently subject to the most restrictive conservation requirements, is (ii). All of the three areas are currently owned by the local or the national government, and an important decision to be made is whether they can be sold, or merely leased, to private parties.

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[1] Property taxes are calculated using a different approach than in the U.S. This different approach has encouraged buyers and sellers to underreport the sale price.

We propose hypothetical development projects described by a total of 7 attributes: (i) location (one of the three abovementioned locations), (ii) allowable use (commercial or light industrial with an emphasis on artisanal production activities); (iii) access (current or improved by rapid transit systems); (iv) presence or absence of conservation restrictions; (v) property regime (lease or full property), and (vi) cost per square meter, which includes the cost of the purchase or lease and development costs, and ranges from €400 to 4000.

One advantage of this approach is that it lets us examine behaviours under circumstances that have not been observed in real life before. Another is that, since attributes are varied independently and simultaneously, it lets us disentangle the separate effects of policies that are often bundled together in real life. For example, historic building or district designations at many locales imply both tax credits or other subsidies (which reduce the net price of the land or building) *and* restrictions on renovations and use of the building.

We find that, contrary to what is often stated in policy circles, conservation restrictions are *not* a deterrent to development projects at the three Venice locations here studied. What truly matters to developers is the property regime and the allowed land use. Specifically, they dislike leases and strongly prefer full property; they also dislike being limited to light industrial uses—a type of land use that is strongly favoured by city officials, on the grounds that it protects traditional handcrafting and small businesses— and strongly prefer commercial uses. Although our respondents are not sensitive to an explicit "improved transportation and access" attributes, it is clear that the most remote Venice locale studied here is relatively unattractive, and that the Venice area that is judged as most attractive is the only one with full car, truck and rail access.

The remainder of the paper is organized as follows. Section 2 provides background information about the study areas. Section 3 discusses our research questions and reviews the literature. Section 4 describes the conjoint choice approach, its application to the three underutilized areas of Venice studied here, and the econometric models of the responses to the choice questions. Section 5 describes the questionnaire and the survey administration. Section 6 describes the data and section 7 the results of the econometric model of the responses to the choice questions. We offer concluding remarks in section 8.

2. Background

This study focuses on three areas in the city of Venice: The Waterfront in the S. Marta neighborhood, the historic portion of the Arsenale, and the northeast portion of the Arsenale (Arsenale Bacini). We chose these areas for four reasons: (i) they are comparatively large, (ii) they are unique, (iii) they are in very different locations, and (iv) they are faced with varying degrees of conservation restrictions on buildings and structures. Specifically, the most stringent requirements apply at the historic Arsenale, while the other two locales are subject to very modest or no requirements at all.

The Venice Arsenale—the ancient shipbuilding yard of the Republic of Venice— was founded in the 1100s, accounts for about 15% of the area of the city of Venice, and is currently owned by the Italian government. In the second half of the 1500s, dockyard organization was restructured to attain both horizontal and vertical integration (Clark and Pinder, 1999). The Arsenale started to decline after World War I, and continued to decline at an even faster rate after World War II, when its buildings were progressively abandoned. In 1983 the Soprintendenza per i Beni Ambientali ed Architettonici of Venice started a series of conservation works. One important feature of the Arsenale is that it is

one of the few sites in Venice with potential for a large-scale transformation (Clark and

Pinder, 1999). Another striking feature of the Arsenale is that because of its location

within the city and because of its limited access via public transportation, it has remained

outside of the traditional tourist routes.

As mentioned, we restrict attention to two portions of the Arsenale. The first is the

historic part of the Arsenale around the so-called *Darsena Grande*. This area includes a

basin that can be used as a marina, as well as historic buildings erected over the course of

several centuries. The south of the *Darsena Grande* houses *Tesoni Gotici* and the

Corderie, two highly prized buildings owned by the Italian Navy. The *Capannone*

(Warehouse) lies in the north of the Darsena. This structure was re-built by the Austrian

Government in the 19th century and is currently owned by the Italian national government

and by the municipality of Venice. The west Darsena has a building dating back to the

18th century, known as the *Squadratori*, owned by the Italian Navy. All of these buildings

are subject to historic conservation restrictions. The Darsena Grande is accessible on foot

directly from the nearby residential district of *Castello*, and by water, both by private and

public transit boats. It also has docking areas and boat slips. The majority of its buildings

are abandoned, as a result of a slow decline that started after World War II. At present,

only a few buildings are used by the Navy as offices and by the municipality of Venice as

museums or for special temporary exhibits.

The other portion of the Arsenale this study is concerned with is *Bacini*

(Shipbuilding docks), which is used for shipbuilding and boat repairs, and has several

buildings, but no particular historic value. The Venice Transit Authority houses its

vaporetti (public transit boats) here. The Bacini area cannot be accessed directly by car or

truck, and is far from the train station, but a proposal is currently under consideration that

would connect it directly to the airport via an underground rail system. Because it is

relatively large, this area could be reused for shipbuilding purposes, but also for housing, hotels, recreational structures, laboratories and offices. The City would allow buildings without special historic status to be demolished and rebuilt with a different layout.

In contrast with the other two locations, the S. Marta Waterfront can be accessed directly by car and truck, is close to the train station, is easily reached by water, and is served by the public transportation system. There are several abandoned buildings and facilities in this area, including warehouses, the old gasometers and related facilities, and former manufacturing plants. Observers as well as city officials concur that this area is suitable for offices, university buildings, sports and recreational facilities, port authority and small manufacturing plants, and housing.

3. Research Questions and Previous Literature

This paper focuses on three major research questions. The first is whether historic building or area designations attract or deter real estate investors, which leads to the natural question whether these properties may be made more appealing to developers by relaxing development/conservation restrictions (or, conversely, by offering "enhanced" historic designation). The second is whether traditional economic incentives for economic development can be deployed successfully with areas or buildings of historic values, and if they can be combined or traded off with historic building conservation requirements. The third is whether we can identify specific groups of developers to whom the regulatory relief tools and incentives are especially appealing, so that local governments can target them.

The research questions of this paper are tied with three major strands of the literature. The first is the empirical literature that has examined the effects of historic building or district designations. Asabere and Huffman (1991) argue that since zoning

and historical district requirements are associated with restrictions on development rights, those parties that invest in certified historical structures are accepting a "substantial degree of functionality and physical disutility," which in turn increases business risk. This disincentive should be reflected in property values, and is likely to be even stronger for non-residential properties. Their empirical analysis shows that vacant properties in the historical district of Philadelphia in the late 1980s did sell for higher prices, all else the same, than properties outside of the historical district, suggesting that at this locale the positive externality effects of historical districting—which is a form of zoning— outweighed the negative effects of restrictions on development.

Cyrenne et al. (2006) ask a similar question for Winnipeg, Manitoba, but use assessed values instead of sale prices, individual historic buildings instead of vacant parcels, and a panel dataset, which allows them to control for unobserved neighborhood characteristics potentially correlated with property values. They compare buildings that qualify for (i) a downtown historical building tax credit and (ii) a city-wide heritage building tax credit program with "control" buildings that do not meet historic designations but are located in the same area as the qualifying buildings. Cyrenne et al. find evidence of a negative externality from being located close to historic buildings. Moreover, they find that rehabilitation expenditures increase the value of buildings, but that they are not fully capitalized—the marginal effect of renovation expenditures is $0.33 for every dollar of expenditure.

Noonan (2007) uses transactions of attached homes in Chicago to examine the effects of landmarks and historical districts on residential property values. Noonan is particularly concerned about correlated but omitted factors that explain property prices. To avoid falsely attributing to landmarks and historical districts effects on property prices

that are truly due to these omitted factors, he deploys the repeat-sale approach and treats the error terms in his regression equation as spatially correlated.

The second strand of the literature relevant to this paper is the extensive and rather controversial empirical literature about the effectiveness of local economic development incentives. Such incentives typically include industrial development bonds, tax credits for job creation or business location, property tax abatement, tax increment financing, and downtown development authorities.

Recent studies suggest a statistically significant, positive relationship between tax incentives and regional and local growth and property values (Bartik, 1991; Greenstone and Moretti, 2003; Newman and Sullivan, 1988; Wasylenko, 1997), but researchers dispute the magnitude of the impacts of incentives on overall economic gains in targeted areas (Fisher and Peters, 1998; Fox and Murray, 2004; Peters and Fisher, 2002).

Research in this area is afflicted by the problem that concurrent incentives at the same locale make it very difficult to disentangle the effect of each individual incentive, a problem that can be remedied only by deploying very careful quasi-experimental approaches with control and treatment groups (Bartik, 2004; Greenstone and Moretti, 2003).[2] In general, it remains difficult to ascertain whether incentives were effective or business locations and/or area redevelopment would have taken place even in their absence (Peters and Fisher, 2004).

Finally, we wish to emphasize that we are interested in the reuse of historical buildings or complexes of buildings, and that this can be broadly interpreted as an example of infill redevelopment. We are not aware of previous empirical work that has assessed the effectiveness of economic incentives and policies aimed at stimulating the reuse of abandoned/underutilized sites of historical and artistic significance. To our

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[2] See Meyer (1996) for a lucid presentation of experimental and quasi-experimental approaches in econometrics.

knowledge, earlier research has usually focused on situations where infill redevelopment is complicated by the actual or suspected presence of contamination, which triggers liability and increases the costs and riskiness of projects because of the necessary environmental inquiries and remediation (McGrath, 2000). Much attention has been devoted as of late to the so-called "brownfields"— abandoned or underutilized sites without with suspected or confirmed contamination problems.

Economic inducements and regulatory and liability relief have indeed been advocated as potentially effective for stimulating cleanup and redevelopment of brownfields (Bartsch et al., 1996; DeSousa, 2004; Howland, 2000, 2004; Yount and Meyer, 1999). The empirical literature assessing the effectiveness of these instruments is limited and the evidence is mixed. Liability relief, for example, attracts participation in voluntary cleanup programs, but does not necessarily result in much remediation activity (Alberini, 2007) nor in improved property transaction rates (Sementelli and Simons, 1997).

On their part, real estate developers claim that they *are* responsive to a broad range of inducements. In surveys in Europe (Alberini et al., 2005) and in the US (Wernstedt et al., 2006) choice experiments suggest that developers can be attracted to contaminated sites by offering them subsidies, liability relief, and less stringent regulation. Prior experience with projects at contaminated sites matters, in the sense that these incentives do not appeal to the same extent to all developers.

It remains to be seen, however, whether similar incentives will work with abandoned or underutilized of historical, artistic and architectural significance, and whether the latter are subject to similar reservations. These are precisely the issues that we explore in this paper using conjoint choice experiments.

4. Conjoint Choice Experiments and Econometric Models of the Responses

In this section, we first describe conjoint choice experiments and then provide details on the design and structure of the conjoint choice experiment questions in our study.

A. Conjoint Choice Experiments

Conjoint choice experiments are a survey-based technique used to investigate the tradeoffs that people are prepared to make between different goods or policies. This technique can be used to find the monetary value that people ascribe to goods or to the benefits of a policy, as long as one of the attributes is the "price" of the good or the cost of the policy to the respondent. It is a stated-preference technique, in that it relies on what individuals say they would do under hypothetical circumstances, rather than observing actual behaviors in marketplaces.

In a typical conjoint choice experiment survey, respondent are shown alternative variants of a good described by a set of attributes, and are asked to choose their most preferred (Hanley et al., 2001). The alternatives differ from one another in the levels taken by two or more of the attributes.

One advantage of conjoint choice experiments—and of stated-preference methods in general—is that they allow the analyst to study people's responsiveness to goods, levels of environmental quality, or policy offering that do not currently exist. Another major advantage is that the attributes can be manipulated independently of one another, allowing the analyst to disentangle their effects separately. This is a great advantage when in real life attributes tend to be bundled together. For example, at many locales historic building or district designations imply both tax credits or other subsidies (a plus), and

conservation and use restrictions (a minus). Conjoint choice experiments are also a very flexible technique, in that it can be adapted to a variety of policies and situations.

B. Our Conjoint Choice Experiments

In our conjoint choice experiments, the alternatives were hypothetical real estate development projects at four possible locations in Venice: (i) the Waterfront in the S. Marta neighborhood, (ii) Arsenale Darsena Grande, the middle portion of the Arsenale, the historic shipbuilding, (iii) Arsenale Bacini, the northeastern part of the Arsenale, which is currently used for shipbuilding, and (iv) a "generic" real estate investment project elsewhere. The alternative projects were described by four more attributes, in addition to the location: (i) access (at the current level or improved), (ii) allowed use (commercial or light industrial with an emphasis on artisanal/handicraft activities), (iii) building preservation restrictions (required or not required), (iv) property regime (full private property or lease), and (v) price per square meter.

Attributes and levels of the attributes are summarized in table 1. We arrived at this list of attributes after consulting with local public officials and a small number of real estate developers and real estate agents specializing in the commercial sector. Regarding use, the City Master Plan and much of the debate in City circles have focused on commercial and light industrial uses for these locations. Light industrial use, in particular, is argued to fulfil the goal of protecting traditional handcrafting and boat building activities.

It should be emphasized that attributes (ii), (iii) and (iv) could be altered through changes in the City's policy or through negotiations with developers on an individual basis (see Stellin and Zoboli, 2006). The City could also offer tax credits or other subsidies to developers in order to encourage reuse of the three abandoned or underused

areas studied here, in which case such offerings would be captured into attribute (v)—price per square meter.

A series of sample conjoint choice questions is reproduced in the Appendix. As shown in Figure A.1, we first asked respondents to choose between hypothetical projects A and B, each entailing a transformation of one of the three areas in Venice. This question was followed by another binary choice question that asked respondents which they would prefer—the project they had just chosen in the previous exercise, which is in Venice, or a typical project for their firm to be undertaken elsewhere? This latter choice task is shown in Figure A.2.

Each respondent was shown a total of 4 project A-project B pairs (both in Venice), plus 4 questions where the respondent was asked to choose between the Venice project just selected and a project elsewhere, for a total of 8 conjoint choice questions.

Table 1. Attributes and attribute levels in the conjoint choice experiments.

Attribute	Levels of the attribute
Location	S. Marta
	Arsenale Darsena Grande (Marina)
	Arsenale Bacini (Shipbuilding Yard)
Land use	Commercial
	Light Industrial
Access	Current
	Improved
Building Conservation as per Regulations	Required
	Not required
Property rights	Full property
	Lease
Cost per square meter (in euro)	400, 800, 1500, 2500, 4000

C. Econometric Model

The statistical analysis of the responses to conjoint choice questions relies on the random utility model (RUM) (see Alberini et al., 2007). In this paper, we assume that respondent i's indirect utility (or a rescaled measure of profit) from alternative j is

(1)
$$V_{ij} = \mathbf{x}_{ij}\boldsymbol{\beta}_1 + C_{ij} \cdot \beta_2 + \varepsilon_{ij},$$

where C_{ij} is the price of the property (expressed in euro per square meter), $\mathbf{x}$ is the vector of the other attributes of the alternatives, and ε_{ij} is an error term that captures individual- and alternative-specific factors that influence utility (or rescaled profits), but are not observable to the researcher.

We assume that when faced with two hypothetical projects, respondents choose the alternative in the choice set that gives them the higher utility or profits. To derive the statistical model of the responses, we begin by considering the response to the first pair of alternatives examined by the respondent. Denote these two alternatives as A and B. By design, both A and B are Venice projects. Because the size of the choice set is 2, and this is a "forced choice" question (i.e., the respondent must choose one of these two projects), we must develop an expression for the probability of a binary outcome.

If the error terms ε are i.i.d. draws from a normal distribution such that $\Delta\varepsilon_i = \varepsilon_{iB} - \varepsilon_{iA}$ is a standard normal, the probability that a respondent chooses alternative A over alternative B is:

(2)
$$\Pr(i \text{ chooses } A) = \Pr(\Delta\varepsilon_i < \Delta\mathbf{x}_i\boldsymbol{\beta}_1 + \Delta C_i \cdot \beta_2) = \Phi(\Delta\mathbf{w}_i\boldsymbol{\beta}),$$

where $\Delta\mathbf{x}_i = \mathbf{x}_{iA} - \mathbf{x}_{iB}$, $\Delta C_i = C_{iA} - C_{iB}$, $\Delta\mathbf{w}_i = \begin{bmatrix} \Delta\mathbf{x}_i \\ \Delta C_i \end{bmatrix}$, $\boldsymbol{\beta}$ is equal to $\begin{bmatrix} \boldsymbol{\beta}_1 \\ \beta_2 \end{bmatrix}$, and $\Phi(\cdot)$ is the standard normal cdf.

Suppose that the respondent indicates that he prefers A over B. He is then asked which he would judge more attractive—A, or another project elsewhere (at a location other than Venice). Because one of the two alternatives being compared in this latter question—namely, A—depends on the response to the previous choice question, it can be shown that the appropriate contribution to the likelihood is that of a panel-data probit with

length of the panel equal to 2 (Cameron and Quiggin, 1994). To illustrate, the probability that the respondent chooses A between A and B, and A again between A and a project elsewhere is:

(3) $\qquad \Pr(A, A) = \Phi(\Delta \mathbf{w}_{i1} \boldsymbol{\beta}, \Delta \mathbf{w}_{i2} \boldsymbol{\beta}, \rho)$,

where $\Delta \mathbf{w}_{i1}$ is the vector of differences between the attributes of alternatives A and B, $\Delta \mathbf{w}_{i2}$ is the vector of differences between the attributes of A and those of the project at another location altogether, and $\Phi(z_1, z_2, \rho)$ is the bivariate standard normal cdf with arguments z_1 and z_2 and correlation coefficient ρ.

When we pool the responses to all conjoint choice questions, the likelihood function is:

(4) $\qquad L = \prod_{i=1}^{n} \prod_{m=1}^{4} \left[P_{1im} \right]^{I_{1im}} \left[P_{2im} \right]^{I_{2im}} \left[P_{3im} \right]^{I_{3im}} \left[P_{4im} \right]^{I_{4im}}$,

where m=1, …, 4 denotes the pair of Venice-based alternatives, P_{1im} is the probability that the respondent exhibited the sequence (A,A) with pair m (see equation (3)), P_{2im} is the probability of observing sequence (A,O) for pair m (where O=project at Other location), P_{3im} is the probability of observing sequence (B,B) for pair m, and, finally, P_{4im} is the probability of observing sequence (B,O) for pair m. The dummies I_{1im}, I_{2im}, I_{3im} and I_{4im} denote the indicated sequences of responses.[3]

Implicit in equation (4) is the assumption that the error terms ε are independent across pairs of projects in Venice within the same respondent. They are also assumed to be independent across respondents. Coefficients β are estimated using the method of Maximum Likelihood.

D. Regressors

Vector **x** includes two Venice location dummies, namely SMARTA and ARSGRANDE. It also includes ACCESSO, a dummy denoting whether access to the site is improved over the current level, and USO, a dummy taking on value of one if the site is slated for commercial uses and zero if the site is slated for light industrial/artisanal uses.

Also included in **x** are RESTAURO, a dummy taking on a value of one if building conservation restrictions apply at the site, and zero otherwise, and PROPRIETA, a dummy taking on a value of one if development can take place only under a lease from the government (which is the owner of the three Venice sites studied in the questionnaire and in this paper), and zero if a regular private property regime is envisioned.

In sum, all binary attributes are coded as 0/1 binary variables, while the price per square meter is entered in the model as a continuous variable. We represent the "investment elsewhere" project by using an alternative-specific dummy and by coding all attributes corresponding to this alternative to zero. Our basic specification of the probit model of the responses (4) includes all of these regressors. We also estimate additional specifications where some of these attributes are interacted with characteristics of the respondent's firm and of its typical projects.

5. Structure of the Questionnaire and Survey Administration

Our survey questionnaire is self-administered by the respondents using stand-alone computers or on-line, and is divided into 4 sections.

In **section 1,** we ask the respondent to describe the nature of his or her company's business. Is it a real estate development company, a real estate investment firm or bank, a lender, or a consulting outfit that works primarily for developers? If the respondent's company has done development projects in the last five years, we ask him or her to

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[3] An (A,A) sequence would therefore result in the following values for these four dummies: (1, 0, 0, 0).

describe three of them to us: Where did each take place? Was it a residential, industrial, or commercial project? Was it an office building? Did the company sell it, lease it to tenants, or does it manage it directly? And what was the volume built?

Next, we ask the respondent to tell us if his company does residential, commercial, or industrial projects, or office buildings, and what percent of all projects are accounted for each of these types. We recognize that pinpointing exact percentages might be difficult, so we provide ranges (0-20%, 21-40%, 41-60%, 61-80%, or 81-100%) to facilitate the respondent's task. We also inquire which markets the respondent's company usually does these projects in—is it the Veneto (the Region in Italy whose capital city is Venice[4])? Northern Italy? The rest of Italy? Abroad?

This section ends with questions about development projects and decisions. We show respondents a list of factors surrounding real estate deals and investments, and ask them to tell us if each of these factors is "always," "almost always," "often," "sometimes" or "never" crucial in their investment decisions. These factors include the possibility of negotiating with local authorities, zoning and building conservation constraints, limits on the time needed for permits, and many others.

In the last screen of section 1, we ask respondents what they usually look for when making investment decisions: New buildings in turn-key conditions? Existing buildings that need some restructuring? Parcels without buildings? Derelict sites that must be regenerated?

Section 2 of the questionnaire is about Venice. We first wish to find out whether the respondent's company has ever done any real estate development in Venice proper or the Venice hinterland, and, if so, what type of projects. Then, we wish to find out whether the respondent would ever consider Venice and the Venice hinterland for development

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[4] We remind the reader than in Italy, the Region is a jurisdiction (not a mere geographical area) with powers and authority similar to those of a State in the US and a Province in Canada.

projects. If the answer is "yes," respondents are to pinpoint the reasons why they find Venice attractive for business out of a list of possibilities. If the answer is "no," we show them a list of possible disadvantages of Venice as a location for business, and ask them to indicate which ones apply to them.

The purpose of asking these questions is two-fold. First, it is of independent interest to find out what makes Venice attractive or unattractive to developers. Second, by making respondents focus on the pros and the cons of doing business in Venice, these questions serve as a useful "bridge" towards **section 3** of the questionnaire—the conjoint choice questions.

The conjoint choice questions (see section 3 of this paper for a discussion of the attributes, and Figures A.1 and A.2 for examples) are preceded by a brief description of the S. Marta and the two Arsenale developable areas. Respondents wishing to obtain fuller descriptions of these areas are offered the option to do so by launching hyperlinks on the screen (see Figure A.3 in the Appendix).

The fourth and last section of the questionnaire asks general questions about the annual revenue of the company, its headquarters, whether the company is partly owned or controlled by a government entity, and the position held by the respondent within the company.

Ideally, we would have liked to administer the questionnaire to a sample representative of the universe of developers based in Italy and in other European countries. We had a list of developers that do business in the Milan area and in the Veneto, and we contacted these firms by e-mail and over the telephone, asking them to complete our questionnaire on-line. This approach resulted in a total of 38 completed questionnaires. After several solicitations, three "recalcitrant" developers finally agreed to

meet with one of our interviewers in their offices and filled out the questionnaire using a laptop computer.

Since our list cannot be considered exhaustive, and at any rate we had only been able to gather a total 41 completed questionnaires in this way, we expanded our sample by going to professional real estate developer meetings and trade fairs, where we asked attendees to participate in the survey on the spot. We were able to obtain 60 completed questionnaires at the MIPIM trade fair in Cannes, France, in March 2006 and 45 more questionnaires at the REAG in Milan, Italy, in May 2006. (The UrbanPromo conference in November 2005 in Venice, Italy, served as the testing grounds for an earlier draft of the questionnaire, which was administered to a total of 10 attendees.)

6. The Data

A. *Characteristics of the Respondents and of their Investment Projects*

Our first order of business is to examine the characteristics of the respondents, the companies they represent, and the development projects that their companies undertake. As shown in table 2, developers account for over one-half of our sample (51.77%), and the second most heavily represented category is consultants or advisors to real estate developers or investors (22%). Lenders, construction companies, and real estate investment firms account each for 7% of the sample.

Table 2. Type of firm or company (N=141)

TIPOIMP	PERCENT OF THE SAMPLE
Developer	51.77
Construction company	7.09
Lender providing financing to firms	7.80
Real estate investment	7.80
Loans and savings	1.42
Consultant/advisor	21.99
Other	2.13

Regarding the headquarters of the company, 87.23% are based in Italy and 12.77% in other countries. Only 5.84% of the respondents reported that their firm was partially owned or controlled by a government entity. Figure 1 displays information about the distribution of annual revenue, showing that companies with annual revenue greater than €10 million account for over two-thirds of the sample, and that for about 36% of the companies in the sample the annual revenue is above €50 million.

What type of projects do our respondents' companies do? About 85.5% of the companies do office buildings, 89.9% do shopping malls and commercial projects, 41% do projects entailing industrial land uses, and 69% do residential projects. A vast majority of these projects (85-90%, depending on the type) take place in Italy. Table 3 shows the degree of diversification of operations of each firm: Only for less than 10% of the sample does a specific type of projects account for the lion's share (81-100%) of all projects.

Figure 1.

Size of the company (annual revenue)
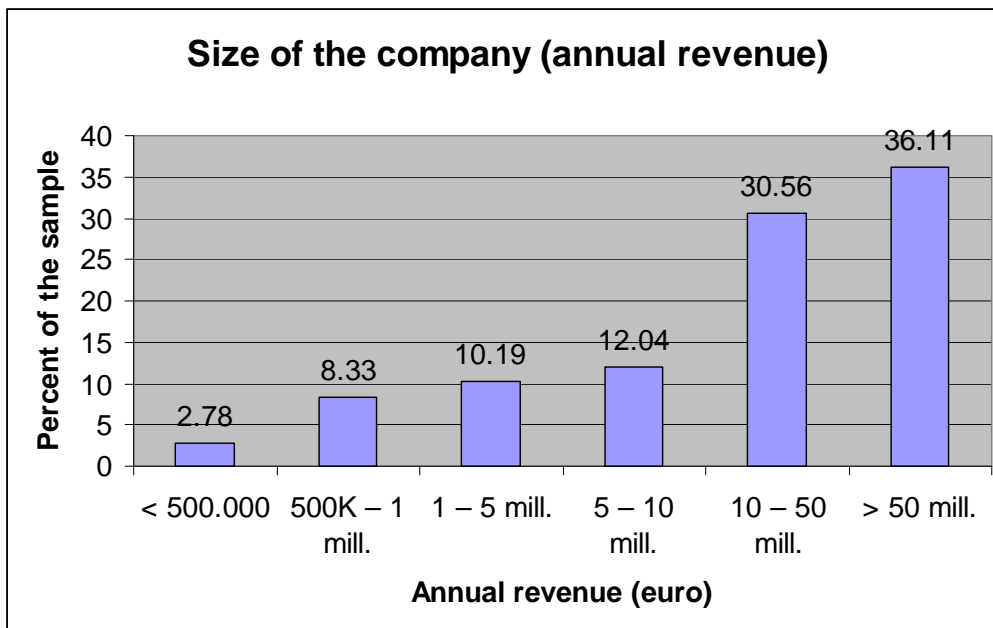
Table 3. Type of projects as share of total projects.

percent of all projects	percent of the sample			
	office buildings	commercial	industrial	residential
0-20	25.64	36.89	40.35	22.92
21-40	38.46	42.62	31.58	28.13
41-60	18.8	9.84	10.53	22.92
61-80	11.97	3.28	10.53	16.67
81-100	5.13	7.38	7.02	9.38
	N=117	N=122	N=57	N=96

Table 4 summarizes the respondents' views of crucial aspects of development decisions. Opportunities for agreements with local governments (item 1) are "always" or "almost always" crucial for over two-thirds of the sample, as are warranties and reassurances on the time needed to get permits (item 3). The possibility of purchasing the property (item 4)—as opposed to leasing it—is also important, as are the prestige of the location (item 11), and, of course, the cost of the property (item 12) and construction costs (item 13).

Regarding the duration of the lease (item 5), the possibility of subdividing the development project or building (item 6), the presence of land use and historic-architectural conservation restrictions (item 7), environmental impact assessment requirements (item 8), and proximity to transportation nodes and network (items 9-10), respondents were more evenly distributed among the various response categories.

As shown in table 5, 26 respondents (18.31% of the sample) have previously done real estate development in Venice and 26 have done projects in the Venice hinterland. Specifically, 15 respondents has done projects in Venice proper but not in the hinterland, 15 reports having done projects in the Venice mainland but not in the city of Venice, and 11 have done projects at both locations.

When asked whether they would consider Venice as a possible location for business, 74% and 63% of the respondents indicated that they would, for the city of

Venice and its hinterland, respectively. What's even more astounding is that only 22

respondents (15% of the sample) said that they would not consider either location.

Table 4. When making investment decisions, which of the factors listed below is crucial?
Percentage of respondents who selected the indicated category. (N=142)

	Always	Almost always	Often	Sometimes	Never
1. Agreements with local authorities	44.37	23.24	14.79	12.68	4.93
2. Tax exemptions	11.27	12.68	16.9	35.92	23.24
3. Guarantees on the terms necessary for authorizations and permits	35.92	30.28	20.42	8.45	4.93
4. Full property	52.82	20.42	15.49	7.04	4.23
5. Duration of the lease (if leased)	32.39	16.9	11.97	16.2	22.54
6. Possibility of subdividing the property	22.54	23.94	27.46	22.54	3.52
7. Zoning and building conservation restrictions	35.92	21.83	17.61	19.72	4.93
8. Required Environmental Impact Assessment	19.72	17.61	17.61	26.06	19.01
9. Closeness to a highway	17.61	16.9	26.06	32.39	7.04
10. Closeness to an airport	11.97	12.68	21.83	36.62	16.9
11. Prestige of the location	48.59	27.46	16.9	6.34	0.7
12. Price	66.2	18.31	9.86	4.93	0.7
13. Construction cost	69.72	17.61	5.63	5.63	1.41

Table 5. Actual and potential interest in Venice as project/investment locale. N=142.

	Have you ever done a project/investment in...?		Would you consider...for your projects/investments?	
	Venice	the Venice hinterland	Venice	the Venice hinterland
No	81.69	81.69	26.06	37.32
Yes	18.31	18.31	73.94	62.68

C. Responses to the Conjoint Choice Questions

Table 6 reports the relative frequency of the various response categories for the conjoint choice questions. In choice questions 2, 3, and 4, the percentage of "project A" and "project B" responses is generally well-balanced, suggesting that there were no obviously superior alternatives. Only in choice question 1, almost two-thirds of the respondents selected project A. Comparison between the responses to questions 1-4 and those to questions 1a-4a suggests that when pressed to indicate which they would prefer—the previously selected project in Venice or a project elsewhere—almost 50% of the respondents announced that they would still choose the Venice project and a little over 50% would take the project at another location.

Table 6. Frequency of the responses to the conjoint choice questions.

CHOICE QUESTION	PERCENT CHOOSE A	PERCENT CHOOSE B	PERCENT CHOOSE "A PROJECT ELSEWHERE"*
1	64.08	35.92	
1-a	30.99	15.49	53.52
2	50.70	49.30	
2-a	26.06	22.54	51.41
3	53.52	46.48	
3-a	26.06	17.61	56.34
4	51.41	48.59	
4-a	18.31	22.54	59.15

* Choose "another project elsewhere" or confirm the project selected in the immediately preceding choice question.

7. Econometric Estimation Results

We report the estimation results for model (4) in table 7. Panel (A) reports our basic specification, which includes only the attributes of the alternatives. Panel (B) reports the results of a specification that includes interactions between selected attributes of the alternatives and characteristics of the respondent's firm (or of its projects).

Panel (A) shows that, all else the same, our respondents consider S. Marta roughly equally desirable as a generic, non-Venice location for their development projects. The

Arsenale Darsena Grande location is slightly less preferred, but is judged more desirable than the Arsenale Bacini location. This makes sense to us: S. Marta is accessible by car, truck and rail, and is thus, for all practical purposes, perfectly comparable to a non-Venice location. The Arsenale locations are probably too difficult to reach; in the case of the Bacini, its shipbuilding facilities may be too specialized to appeal to broad group of developers.

At first, we were surprised that the coefficient of the attribute indicating improved access was not statistically significant, but we believe that this is due to the fact that respondents are already indicating a preference for Santa Marta, which is already fully accessible by car, truck and rail. (We experimented with entering an interaction between the access attribute and the Arsenale locations, but the coefficient on this interaction term was small (-0.07) and statistically insignificant (t statistic=-0.46).)

Relaxing the conservation requirements does not make a difference to our respondents, suggesting that, after all, the presence of such restrictions is neither the deal maker nor breaker in a city like Venice. By contrast, USO and PROPRIETA have strong effects on the likelihood of preferring an alternative over another. The coefficients on these attributes indicate clearly that respondents reject hypothetical projects that are slated for light industrial or artisanal uses, preferring, all else the same, projects slated for commercial use. They also shun government leases, preferring the full private property.

The coefficient on price per square meter is negative and significant, as expected. This suggests that developers will probably respond to financial incentives, as long as these can readily be translated into net land prices.

To get a sense of the magnitude of the coefficients, suppose a real estate developer were to choose between two projects at Santa Marta. Both imply full property and a price per square meter of €1500. Santa Marta project A is slated for commercial use, while

Santa Marta project B is slated for light industrial/handicraft production use. Model (A) predicts that the probability that A is preferred is 0.6932. It would take a large increase in the price of A (to €4000) and a dramatic discount on the price per square meter of B (to €400) to make the two projects at this locale closer to one another in terms of desirability: Changing the prices in this way reduces the probability of still choosing A to 0.5336 and brings the probability of choosing B to 0.4664.

If the City further decided that project A can be offered only with a lease, instead of fully transferring the property to the developer, the probability that the developer chooses A would fall to 0.4029, while that of preferring B would rise to 0.5971. Santa Marta project A would now be less preferred than a commercial project at the Arsenale Grande with full property and the same price per square foot (€4000) (the probabilities being 0.40 and 0.60, respectively).

A commercial project at Santa Marta with full property remains less preferred than a project at any other non-Venice location when the price per square meter is €1500 per square meter or higher, but would become more preferred at lower land prices. For example, if the price per square meter at Santa Marta were €400, the probability of choosing the Santa Marta location would be 54% (versus 46% for the "other" location), and if it was €800, the probability of choosing Santa Marta would be 52%.

Panel (B) of table 7 shows that the attractiveness of non-Venice locations for development project do vary across company types. Respondents who describe their company as a real estate development firm are more averse to Venice locations than others. We attribute this result to the reputation of the local administration and the complex political reality in the City, which is judged as relatively unfriendly by developers, a business-minded group that seeks a fast turnaround for its investments.

The magnitude of the coefficient on the term [alternative-specific intercept] ×[80% or more industrial projects] indicates that respondents from companies that do primarily industrial projects almost always choose the non-Venice location when asked between a non-Venice project and a Venice project. Clearly, this is confirming the unattractiveness of Venice locations for industrial uses.

By contrast, those companies that do primarily commercial projects seem to find Venice an attractive market, probably because of the residents' and tourists' demand for retail and wholesale shopping and a lack of supermarkets in Venice. This is our interpretation for the negative and significant coefficient on [an alternative-specific intercept] ×[80% or more commercial projects].

We also checked whether those respondents who judge zoning and conservation restrictions as always important can be appealed to by relaxing conservation restrictions in Venice. The coefficient on the interaction between this attribute and a dummy capturing those respondents has the expected sign (negative) but is statistically insignificant, as is the coefficient on the interaction between the dummy capturing these respondents and the "investment elsewhere" alternative-specific intercept. The latter coefficient is positive, suggesting that there is weak evidence that these persons would prefer locales that are less likely to have conservation restrictions in place.

Finally, respondents for whom the full property regime is always important are more deterred from leases than the other respondents. This effect—which can be inferred from the coefficient on the term [full property] × [full property "always" crucial in project decisions]—approaches, but does quite make, the 10% significance level.

The last term we entered in the model was an interaction between the alternative-specific intercept and a dummy denoting whether the respondent always regards agreements with local governments as a crucial factor in making investment decisions.

We decided to enter this variable in the model because several respondents in the course of the survey literally blurted out that they considered the city of Venice unreliable and unwilling to cooperate with developers and real estate investors. The coefficient on this variable is positive—which would seem to confirm the notion that companies who give high priority to agreements with local government when making investment decisions tend to prefer locales other than Venice—but very small and statistically insignificant.

Table 7. Probit model results.

Variable	(A) Basic specification		(B) Specification with interactions	
	coefficient	t statistic	coefficient	t statistic
Santa Marta	0.234018	2.56	0.238216	2.58
Arsenale Darsena Grande	0.15686	1.95	0.145699	1.79
Access	0.093533	1.22	0.081505	1.06
Conservation restrictions	-0.00414	-0.06	0.042835	0.48
Use	0.505225	7.29	0.510783	7.26
Full property	-0.33029	-4.79	-0.21941	-2.37
Price per square meter	-0.00012	-4.41	-0.00013	-4.67
Alternative-specific intercept*	0.264073	2.43	0.065323	0.45
Alternative-specific intercept × Developer			0.262789	2.23
Alternative-specific intercept ×(mostly industrial)			1.386414	2.67
Alternative-specific intercept × (mostly commercial)			-0.496	-2.09
Alternative-specific intercept × (building company)			-0.10151	-0.45
Alternative-specific intercept × (zoning and historic conservation restrictions always important)			0.105624	0.75
Conservation restrictions × (zoning and historic conservation restrictions always important)			-0.14595	-0.98
Full property × (full property always important)			-0.19927	-1.62
Alternative-specific intercept × (agreements with local governments always important)			0.049472	0.41
Nobs	1136		1136	
Number responses	568		568	
log likelihood	-728.97		-713.77	
Rho	0.072386	0.98	.07032	.93
LR test Rho=0	0.96		0.86	
p value LR test	0.163		0.176	

* Investment at another, non-Venice location.

8. Discussion and Conclusions.

We have used conjoint choice questions to explore the preferences of real estate developers and investors for projects in Venice involving the reuse of abandoned or underused areas that have historical, artistic and architectural value.

The results of our models raise doubts about the concerns sometimes expressed by city officials and observers, who fear that conservation restrictions may have a deterrent effect on non-local investors. We find that the presence of conservation restrictions is not a deterrent to investment and redevelopment projects at the locations with historical and architectural value in Venice. Conversely, relaxing existing conservation restrictions does not have any effect on the attractiveness of the locations we focused on. We checked with real estate agents that specialize in the commercial sector in Venice, and they told us that developers take it for granted that construction in Venice must follow prescribed conservation regulations. Indeed, the market itself demands buildings that comply with such conservation requirements (Rosato et al., 2006).

By contrast, our respondents tended to avoid alternatives slated for light industrial use, and wanted the full property, rather than a lease from the government. These results are consistent with the opinions about the importance of certain aspects of an investment project reported by the respondent in another section of the questionnaire. They also point out to the need for the City to be in tune with developer demand for specific types of land uses. In that sense, our findings sound a common theme with Howland (2004), who warn that obsolete zoning, land use, and infrastructure may hinder development more than other factors (environmental contamination in her study, historic preservation requirements in ours). That historic buildings at locales outside of Venice in reasonable shape but subject to very specific zoning and use restrictions have remained unsold at a

recent auction (Unknown Author, 2006[5]) seems to confirm this point. Based on these findings, we would recommend flexibility in the land use and property regime options to be offered by City officials to individual developers.

We find it encouraging—both from the point of view of consistency with economic theory and that of policy—that respondents do respond to the price of acquiring and redeveloping the land. This means that it might be possible to encourage them to undertake projects in Venice by offering them appropriate financial incentive packages.

In the end, it is difficult to say if our *findings* can be extrapolated to other "cities of art" or the historical districts of cities in Europe and in the US, given the uniqueness of Venice. Our *approach*, however, should be relatively straightforward to adopt at other locales where conservation restrictions are perceived as a hindrance to urban revitalization and reuse of existing structure, and where well-guided public policies are needed to offset them.

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[5] This piece of news appeared in *The Gazzettino*, the local Venice and Veneto newspaper.

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Appendix.

Figure A.1: Example of Choice between two Venice alternatives

Figure A.2: Example of Choice between a Venice and a non-Venice alternative

Figure A.3: Description of Venice investment sites: S. Marta

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