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A COMPARATIVE EVALUATION OF SPACIALLY TARGETED ECONOMIC REVITALIZATION PROGRAMS IN THE EUROPEAN UNION AND UNITED STATES

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A Comparative Evaluation of Spatially Targeted Economic Revitalization Programs in the European Union and the United States*

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Abstract

This paper compares and contrasts the United States federal Empowerment Zone and European Union Objective 2 programs that geographically target economic revitalization incentives. Since 1989, both programs have designated predominately industrial or urban areas as being distressed and worthy of government incentives in three separate rounds. The paper uses a probit econometric model to comparatively evaluate the characteristics of the areas that were targeted. The paper finds that while the programs were fashioned for different reasons and thus had different goals, the programs on both continents initially targeted very distressed areas. However, consistent with the fears of critics of spatial targeting, subsequent rounds of designation greatly expanded the programs, and in most cases, lead to less precise targeting.

JEL Classification Codes: O1, R5, C23

I. Introduction

In recent years on both sides of the Atlantic, there has been a renewed interest in the spatial targeting of economic revitalization incentives at the national and supranational levels. After a decade and a half of experimentation with state-sponsored enterprise zone programs, the United States first began designating the federal Empowerment Zones (EZs) in 1994 in order to promote local economic revitalization of impoverished, predominantly urban, areas on a much larger scale and with much bigger resources than the state programs. Through three rounds of designation, the federal program has already targeted parts of 31 economically distressed metropolitan areas with EZ incentives.[1] Over the last decade in the European Union, regional programs co-financed through the Structural Funds[2] have become a popular economic revitalization tool for EU regions (*Objective 2 areas*) with declining industrial production. To date, economic revitalization packages have been offered in three separate rounds to more than 80 Objective 2 (Ob.2) areas located in twelve EU countries covering approximately 18% of the EU population.

There are several economic justifications for geographically targeting policy rather than offering incentives more globally. A number of negative externalities may be created if the geographic location of economic development is left to be determined by market forces alone (e.g., Ladd, 1994; Bartik, 2000). One of such negative externalities is an excessive increase of urban sprawl if decaying inner city districts are not recuperated as vital economic and/or residential places. In addition, increased pollution and traffic congestion can occur if economic development does not occur uniformly with a balanced exploiting of metro and non-metro lands. Further, increased criminal activity can result if abandoned industrial and/or residential inner city areas are left in their decaying state instead of being properly rehabilitated. Labor market are often inefficient and do not adjust quickly to changes in economic opportunities. Resources are thus under-utilized in high unemployment inner-city areas because of people's inability or unwillingness to move from those areas.

In light of such arguments, some have stressed in the economic development literature the importance of targeting the most needy places (e.g., Bartik, 1994, Sridhar, 2001). If non-needy places are targeted, the programs do not meet this economic

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[1] The federal program also includes 10 rural EZs, 105 urban and rural Enterprise Communities (ECs) that receive less generous incentives, and 40 urban and rural Renewal Communities (RCs).

[2] Funding is primarily through the European Regional Development Fund (ERDF) and secondarily through the European Social Fund (ESF).

rationale and risk distorting markets and creating inefficiencies. Critics of these programs have argued that even if spatial targeting may be justified to help correct market failures, political factors often hinder effective implementation. In the past, geographically targeted revitalization programs have often grown rapidly and ultimately included too many areas for the intervention, thus loosing the critical focus on only needy places (Rhoads, 1985; Lehman, 1994).

Given the increasing popularity of such programs and the tremendous amount of resources devoted to them, it is important to examine how they are performing. A stream of impact evaluation literature has recently emerged to complement the previous case studies and surveys examining US state enterprise zones (e.g., Papke, 1994; Boarnet and Bogart, 1996; Dowall, 1996; Engberg and Greenbaum; 1999; Bondonio and Engberg, 2000; Greenbaum and Engberg, 2000; Bondonio, 2002a; Peters and Fisher, 2002). The national programs have been studies less, with an initial look at Empowerment Zones funded by the US Department of Housing and Urban Development (Herbert, 2001) and the first econometric impact evaluation for the EU Ob.2-area programs (Bondonio, 2002b). In such studies, the analysis is focused on measuring the net impact on employment, business or housing market outcomes of the program incentives net of influences from exogenous economic factors. This study focus instead in analyzing jointly for the US and the EU the policy outcomes in term of actual target area selection. Thus, the analysis goes to the very heart of the policy issue: is the program implementation consistent with sound economic rationale that implies limiting target places to only severely distressed places?

This paper compares and contrasts the US and EU processes of geographically targeting economic revitalization incentives and examines the types of places that have emerged as the outcome of the targeting process. Within the EU, the case of Italy is also examined to provide more detailed analysis. The paper finds that the US federal EZs and the EU Ob.2-area programs target different types of places, which is consistent with their different program goals. However, the paper finds evidence of a common trend in both programs to expand the geographic coverage over time. The worst-off places were often initially targeted and subsequent enlargement extended to more moderately distressed areas. The exception was Italy, where they latest expansion continued to target very distressed areas.

The reminder of the paper is organized as follows. Section II provides information about theUS Empowerment Zone and EU Objective 2 programs. Section III describes

the data used in the analysis and presents descriptive statistics that help distinguish the programs across the different implementation rounds. Section IV presents the empirical probit regression model and results. Section V closes the paper with concluding remarks.

II. US and EU program background

While the US experimented sporadically with programs targeted at particular impoverished areas in the past, geographically targeted economic revitalization programs began to be widely implemented in the early 1980s, when individual states started designating enterprise zone programs based upon the British program of the same name. While the UK programs focused on abandoned industrial sites, the US programs have always had more of a community development goal. To date, over 40 states have passed some type of enterprise zone program, which generally offer packages of tax abatements and capital and labor incentives to areas that meet distress criteria. These criteria typically include factors such as high unemployment and poverty, disadvantaged residents, population loss, and poor infrastructure. Sound empirical evaluations (based on outcome data from US Census Bureau data) of these state programs have come to mixed, although generally rather negative conclusions about that effectiveness of the programs (see, for example, Papke, 1993; Papke, 1994; Boarnet and Bogart, 1996; Fisher and Peters, 1997; Fisher and Peters, 1998; Engberg and Greenbaum, 1999; Bondonio, 2000; Bondonio and Engberg, 2000; Greenbaum and Engberg, 2000; Peters and Fisher, 2002).

Perhaps some of the lack of measured success of the state programs has been due to the scale of the programs—the incentives may have been not large enough relative to the costs of doing business in very distressed areas. Partially to address this, the US federal government began implementing zones in 1994 called Empowerment Zones and Enterprise Communities (EZ/EC) as part of the Budget Reconciliation Act of 1993. These zones were on a much larger scale than the state programs and subsequently came with much larger incentives. The number of zones was expanded in two additional rounds in 1998 and 2001. The Community Renewal Tax Relief Act of 2000 that authorized the third round of programs added a third type of zone, Renewal Communities, and also extended the tax incentives from the first two rounds until December 31, 2009. This paper examines only the urban Empowerment Zones, which

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are smaller in number and offer greater financial incentives than the Enterprise Communities. Renewal Communities have only been in existence since 2001.

In order to be designated as an EZ, communities had to met certain distress and size criteria. Although no standard application form was required, they had also to create and submit a zone strategic plan providing evidence of broad and active community participation in the proposed revitalization efforts. Formal minimal distress criteria in the first round legislation included thresholds of poverty and unemployment. The Round 2 legislation relaxed some of the minimal distress criteria by authorizing the elimination of a rule limiting at least half of the area to contain census tracts with poverty rates of at least 35 percent (U.S. Department of Housing and Urban Development, 2001b). In addition, Round 2 legislation exempted from the poverty rate criteria up to three sites suitable for development containing less than a combined 2000 acres. The Round 3 legislation provided the same designation criteria as Round 2.

Table 1 lists the communities that received urban EZs during the three rounds of designation. The dates in the table refer to the year in which the zones were designated rather than the year the legislation was passed. Eight cities were awarded urban EZs in Round 1.[3] The second designation Round added 15 more target communities containing empowerment zones, while eight additional target communities were designated in Round 3. All of the urban EZs except for Atlanta's[4] remained active through the subsequent designation rounds, so 30 target communities remain active EZs.

The incentive package offered to EZ communities through the three designation rounds is mainly composed as follows: A) employment credits of up to $3000 per employee per year for zone businesses to hire or train local residents; B) increased tax deductions for depreciable properties, such as equipment and machineries, acquired by zone businesses[5]; C) tax exempt bond financing; D) Economic Development Initiative (EDI) grants to promote broad economic revitalization initiatives; E) special considerations and priority for a number of federal community assistance programs; F)

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[3] Technically, only six cities were initially awarded EZs. Los Angeles and Cleveland were given "Supplemental Empowerment Zones" that were later converted to full Empowerment Zones by the Round 2 legislation. Because these two geographic areas were nevertheless selected in the first round, they are considered to be Round 1 EZs for the purpose of this analysis.

[4] Atlanta was designated an EZ in Round 1 that was replaced by a Renewal Community in Round 3.

[5] Increased deductions are in the amount of $20,000 ($35,000 for properties acquired after December 31, 2001). The total deduction limit was in 1997, for example, $38,000 for EZ firms and $18,000 for other firms (Herbert, 2001).

$100 million social-service block grants (for Round 1 EZs only) usable for a variety of public and private community activities within the strategic plan programming for the zone[6] (Cuomo, 1995; Wolf, 1995; Berger, 1997; Sweet, 1999; U.S. Department of Housing and Urban Development, 2001a; U.S. Department of Housing and Urban Development, 2001b; Herbert, 2001).

In Europe, spatially targeted development has taken on a more regional focus. As nations began to attempt to coordinate national economies into what is now the European Union, it was realized early on that aid needed to be targeted to the most severely distressed regions in order to reduce regional disparities. While the 1957 Treaty of Rome pointed out this need, little was provided in the way of specific programs. The European Regional Development Fund (ERDF), established in 1975, began to implement programs to attempt to shrink regional inequities (Sweet, 1999). However, it was not until 1989 that the Structural Funds,[7] which seek to promote economic and social cohesion among all nations member of Union, were reformed to specifically target distressed areas in an attempt to redistribute economic activity to those areas.

Objective 2 (Ob.2) of the Structural Funds provides ERDF assistance to areas of high unemployment and declining industrial production. Ob.2 programs are named after one of the *objective propositions* (seven in all for the 1989-93 and 1994-1999 programming periods; three for the 2000-06 period) set to discipline and coordinate all of the initiatives co-funded by the EU structural funds. While some of the other objectives that focus on the economic adjustment of poor regions are spatially targeted, others that focus on agriculture and the economic integration and training of youth and the long-term unemployed are not.

To date, as with the US federal programs, EU Ob.2 programs have been implemented over three programming periods: 1989-1993 (Round 1 programs); 1994-1999 (Round 2 programs); 2000-2006 (Round 3 programs). In the 1989-99 programming periods, the Ob.2 proposition concerned solely promoting economic

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[6] Round 2 EZs received grants that were subject to annual appropriation, and Round 3 EZs did not receive grant funding.
[7] In addition to the ERDF (set for funding predominantly geographically-targeted economic revitalization/development programs), other EU structural funds include: the European Social Fund (set mainly for financing active labor policies and/or job training programs); the European Agriculture Guidance and Guarantee Fund (devoted to rural development and adjustment of agricultural structures), and the Financial Instrument for Fisheries Guidance (finances the structural actions in the fisheries sector).

revitalization of industrially declining regions in the EU member nations. In the current 2000-06 period, instead, the new Ob.2 proposition also embraces boosting development of rural and exclusively urban areas.[8]

For the 1989-99 programming periods, eligible areas for Ob.2 programs had to meet three specific distress criteria: unemployment rate exceeding the EU average for the last three years prior to the beginning of each programming period (i.e., 1989 and 1994); share of industrial unemployment exceeding the EU average in any year after 1975; overall decline in industrial employment since 1975. The current 2000-06 programming period simplified and reduced the number of objectives, thus resulting in an expanded definition of Ob.2 areas. Eligible areas for Ob.2 programs can now be of four types: areas with declining industrial production and employment whose eligibility criteria are identical to those of the earliest programming periods; rural areas with low population density, high rate of agricultural employment or declining employment; urban areas with severely distressed housing and socio-economic conditions; areas with a substantial percentage of population employment in the fishing industry and a concurrent reduction in the fishing industry employment[9].

Table 2 lists the 12 EU countries in which Ob.2 areas are designated. The rows under each country name lists the NUTS_1 areas[10] that received an Ob.2 program during at least one of the three rounds of the programs.[11] In the columns next to each NUTS_1 area contain "*X*s" that indicate whether the presence of an Ob.2 program in that round of programming. Austria, Finland, and Sweden did not join the EU until 1995, so they received Ob.2 programs only when they joined the EU during the second round.

Incentives offered by Ob.2 programs focus on the general economy of the target areas, employment, local development, and technological improvement. The programs are tailored to the needs of the individual Ob. 2 regions. General economy incentives include support for restructuring, conversion and modernization; revitalization and

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[8] Information on the 2000-06 EU Ob.2 programming round can be found at.
http://europa.eu.int/comm/regional_policy/objective2/areas_en.htm.
[9] Information on EU Ob.2 policies and eligibility criteria for the current 2000-06 programming period can be found at http://europa.eu.int/comm/regional_policy/objective2/prog_en.htm.
[10] NUTS stands for Nomenclature of Units for Territorial Statistics. As described in section III of the paper, it is the five-tier hierarchical regional structure used to standardize the economic territories of European Union member states. NUTS_1 areas are the largest units of the hierarchical structure, formed by very few large subsets of member countries.
[11] Objective 2 areas are much smaller than NUTS_1 areas, but a table listing the presence of Objective 2 areas at a smaller geographic level would be many pages long. A similar table of Objective 2 areas at smaller geographic level is available from the authors.

economic diversification; development and internationalization of business activities; investments for industry, innovation and activity start-up; and support for small and medium sized enterprises (SMEs). Employment incentives include specific support for employment growth; human resources development; and technical and vocational worker training. Local development measures include exploiting the region's potential; support for tourism and services; infrastructure support; environmental protection and improvement; urban and industrial site regeneration; and investment attraction. Technology policies include R&D projects and know-how development; support for innovation transfer; and development of business and technology parks.

III. Data and Descriptive Statistics

US Empowerment Zones

Empowerment Zones (EZs) are defined at the census tract, and EZ tract boundaries were taken from the HUD website[12] and supplemented and verified with maps from HUD's "Research Maps (R-MAPS)" CD-ROM (Vol. 3). The socio-economic and housing data used to distinguish EZ tracts from non-EZ tracts come from the 1990 decennial census as compiled in HUD's "Research Maps (R-MAPS)" CD-ROM (Vol. 2).

Table 3 presents descriptive statistics from 1990 for 44,012 urban census tracts in the United States. While ten rural Empowerment Zones and numerous rural Enterprise Communities, Champion Communities and Rural Economic Area Partnership Zones have been designated during the three rounds, these programs generally encompass a much larger geographic area and contain many fewer residents than do the urban programs. 15,063 tracts were excluded because they were considered to be rural by virtue of not belonging to an urbanized area as defined by the US Census Bureau or by not being part of a Metropolitan Statistical Area (MSA) as defined by the US Office of Management and Budget. A further 1238 tracts were excluded because they were designated as an urban Enterprise Community or urban Renewal Community. While these tracts were not designated as Empowerment Zones, they were designated as distressed and given federal development incentives. Thus, it would not be accurate to treat these tracts as non-EZ in a comparison of designated and not-designated areas.

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[12] http://www.hud.gov/offices/cpd/ezec/

The "No EZ" column of Table 3 contains 43,291 urban tracts that did not receive federal spatially targeted development incentives during any of rounds of the program. The "EZ" column contains the 721 tracts that were designated as an Empowerment Zone during any of the three rounds. Differences in the zone and non-zone characteristics[13] are all highly significant (|P-values| all < .0001). EZ tracts have a lower mean population (2827 versus 4362) than non-EZ tracts, but they also have much smaller land area so the average EZ tract is twice as densely populated (5367 versus 2477 people/km^2). Not surprisingly, EZ tracts were much more distressed in 1990 than the tracts not designated. The unemployment rate was three times as high (19.7% versus 6.5%), the poverty rate was almost four times as high (44.4% versus 12.2%), and median household income was slightly more than a third of that in non-EZ tracts ($12,783 versus $33,807). There were three times as many minority residents (79.5% versus 25.3%) and many fewer high school graduates in EZ tracts on average (43.8% versus 75.5%). In addition, rents were lower ($317 versus $502), housing prices were less than half ($44,115 versus $111,007) and owner occupancy rates were much lower (26.7% versus 61.8%) on average in zone tracts.

The final three columns of Table 3 break the EZ tracts into the three rounds in which they were designated. To test the means, an F-test was estimated to compare the variances of observations from Round 1 and rounds two and three. In cases in which the null hypothesis of equal variances could be rejected at the .05 level, a t-test assuming unequal variances was used. Otherwise, a t-test assuming equal variances was utilized. By every measure, the 348 tracts initially designated in the first round in 1994 were more distressed based on the 1990 data then the 249 tracts subsequently designated in 1999 in Round 2. Further, except for median household income and median house value, the tracts initially designated in Round 1 were also significantly more distressed based on the 1990 census data than the 124 tracts subsequently designated in 2001 in Round 3. Clearly, the most distressed tracts were initially designated EZs. This finding is partially mitigated by the fact that 645 tracts that were designated as Renewal Communities (not shown in the table) in 2001 had 1990 characteristics that were similar to the Round 1 Empowerment Zones.

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[13] Variable definitions and sources for all of the variables can be found in Table 9 in the Appendix.

European Union Objective 2 Areas

European Union Objective 2 (Ob.2) areas are designated as groups of contiguous city or town jurisdictions of sizes considerably larger than the US Empowerment Zones. European Union data are standardized into a five-tier hierarchical structure of uniformly defined levels of geographic units referred to as Nomenclature of Units for Territorial Statistics (NUTS) areas. NUTS_1 areas are the set of geographic statistical units formed by very few large subsets of member countries (composed as groups of contiguous regions or states corresponding to the largest sub-national jurisdictions for each member nation). NUTS_3 areas are the set of geographic units formed by single second-tier sub-national jurisdictions (comparable in many aspects to US counties) of member nations, while NUTS_5 are the set of city or town jurisdictions of member nations (representing the smallest geographic units of the EU statistical systems). To precisely measure socio-economic characteristics of the EU Ob.2 areas, aggregating together data from the appropriate NUTS_5s would be needed to avoid the non-exact correspondence between Ob.2 areas and the largest geographic units of the EU statistical systems (NUTS_3 or NUTS_1). Unfortunately, unlike in the US, data on small geographic units such as NUTS_5 are not uniformly measured and processed throughout the EU. One of the main reasons for the lack of data at fine geographic levels is the frequent changing of city or town (NUTS_5) boundaries.

While a great deal of data is available from the European Union's statistical agency, Eurostat, at the NUTS_1 or NUTS_2 level across the EU (European Commission, 2001), that level of aggregation does not allow for very meaningful comparisons. A much smaller subset of socio-economic variables useful for describing the characteristics of Ob.2 areas is available at the NUTS_3 level, which is still a rather coarse geographic measure. More desirable NUTS_5 data are not available on an EU-wide basis and thus cannot be used for cross country comparisons. NUTS_5 data are available from other country-specific sources for a limited number of EU countries, and this study utilizes data from Italy that come from two sources: Geostat (ISTAT, ESRI ITALIA, SEAT, 1997) and Sistema Starter (Istituto Tagliacarne, 1990).

To determine how much of the NUTS_3 areas were designated as Ob.2 areas in the three designation rounds, data from the European Union (European Community, 1989;

European Community, 1994) and the European Union web-site[14] were used to compare lists of Ob.2 areas with a map of NUTS_3 areas from the European Union[15].

Table 4a presents descriptive statistics from 1990 for 483 NUTS_3 areas for eight EU countries. Data from Austria, Finland, and Sweden are excluded because they were not EU members yet during Round 1. The United Kingdom was excluded because there was a reorganization of local governments during the 1995 to 1998 period, and for many of the administrative units, NUTS_3 data do not exist prior to 1995. Data for all the countries for the last two rounds are presented in Table 4b. Prior to Round 3, Ob.2 areas were restricted to urban areas and certain areas near Objective 1 areas (which are areas designated for EU assistance by virtue of severe and permanent distress socio-economic conditions). Because the program was expanded in 2000 to also cover rural and fishery areas, the analysis was restricted to only non-rural and non-fishery Ob.2 areas to enable fair comparisons among the three rounds.

The "Non Ob. 2" column of Table 4a contains summary statistics from 279 NUTS_3 areas that did not receive Ob.2 incentives or any other EU-sponsored geography-based assistance programs. The "Ob. 2" column contains statistics from 204 NUTS_3 areas that partially or completely became Ob.2 areas during any of the three rounds. On average, Ob.2 areas had double the population (420 thousand versus 216 thousand) and double the unemployment rate (7.3 percent versus 4.1 percent) than "Non-Ob.2" areas. The difference in population density was not significant at the 0.1 level. The remaining three columns of the table break the NUTS_3 areas into the three rounds in which they were designated. The program expanded over time from 63 NUTS_3 areas in Round 1 to 95 in Round 2 and 190 in Round 3. Appropriate t-tests of test whether variable means of Ob.2 areas differ in Rounds 2 and 3 from Round 1. Only the unemployment rate significantly differed (9.1 percent in Round 1, 8.3 percent in Round 2, and 7.3 percent in Round 3). As with the US Empowerment Zones, the areas designated in the initial round were the most distressed.

Table 4b presents the same descriptive statistics for rounds two and three for 619 NUTS_3 areas in all 12 countries that received Ob.2 areas. 161 rural and fishery and 307 Objective 1 NUTS_3 areas were excluded from the analysis. The descriptive statistics are similar to those with the more limited number of countries. As the first

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[14] http://europa.eu.int/comm/regional_policy/sources/docoffic/official/deci_en.htm
[15] http://europa.eu.int/comm/regional_policy/funds/prord/guide/euro2000-2006_en.htm

two columns of the table indicate, the 290 NUTS_3 Ob.2 areas had a higher average population (446 thousand versus 256 thousand) and higher unemployment rate (8.9 percent versus 6.1 percent) than the 329 NUTS_3 areas without a program. The final two columns compare the means between Round 2 and Round 3. The 157 Round 1 Ob.2 areas had a significantly higher unemployment rate (10 percent versus 8.9 percent) than the 275 Round 3 Ob.2 areas.

Objective 2 Areas in Italy

Availability of city-level data (i.e., NUTS_5 geographic units) for Italy allows the robustness of the analysis to be checked by eliminating the non-perfect correspondence between geographic units of the statistical systems and actual Ob.2 areas (as all Ob.2 areas are designated as groups of cities -NUTS_5 units). Replicating the analysis with only Italian data also allows housing variables and 1981-91 job growth trends to be included in the analysis.

Table 5 presents descriptive statistics from 1991 for 5340 NUTS_5 areas. As in Table 4a and Table 4b, the "Non Ob.2" column of Table 5 contains data from the NUTS_5 areas that did not receive Ob.2 incentives or any other form of EU-sponsored assistance, while the "Ob.2" column contains data from the NUTS_5 areas that became Ob.2 areas in any of the designation rounds. All of the 1492 Ob.2 and the 3858 non-Ob.2 NUTS_5s included in Table 5 are city or town jurisdictions located only in northern and central Italy, as southern Italy was entirely designated for EU assistance under the Ob.1 provision that targeted the most severely and permanently distressed regions of the EU member nations. As with EZs and Ob.2 areas throughout the EU, differences in the Ob.2 and non-Ob.2 characteristics are all highly significant. As expected, Italian Ob.2 areas show a higher mean unemployment rate (5.3 percent versus 4.5 percent), a lower 1981-91 ten-year job growth (1.6 percent versus 6.6 percent) and a greater percentage of vacant houses (8.1 percent versus 7.1 percent) than non Ob.2 area. Contrary to the US EZs, less densely populated areas were targeted for Ob.2 assistance (194 versus 294 people per km^2). Somewhat surprising since Ob. 2 programs focus on industrial areas, the percentage of manufacturing employees was lower (31.4 percent versus 37.1 percent) and the percentage of university graduates was slightly higher (4.5 percent versus 4.1 percent) in the Ob.2 areas than in the non-Ob.2 areas.

Comparisons among characteristics of Ob.2 areas designated in the three designation rounds show mixed trends. The program expanded the number of targeted

areas over the tree rounds, from 576 NUTS_5 areas in Round 1 to 675 in Round 2 to 827 in Round 3. Compared to Round 1 Ob.2 places, the characteristics of Round 2 places were similar, with the only significant differences at the 0.5 level being that population density was much greater in Round 2 (306 versus 230 people per km^2), the percentage of manufacturing employees was higher in Round 2 (36 percent versus 33.5 percent), and the percentage of vacant houses was lower in Round 2 (7.0 percent versus 7.7 percent). At the 0.1 level, the mean unemployment level was significantly lower in Round 2 (5.3 percent compared to 5.5 percent).

Round 3 Ob. 2 areas look very different from both Round 1 and Round 2 areas. All of the characteristics means were significantly different at the 0.1 level between Round 1 and Round 3. Unlike the trend in the US and the EU as a whole, Round 3 areas appeared to be worse off in many ways than the Round 1 areas. Although Round 3 places were less densely populated (135.6 versus 230 people per km^2) and had a slightly lower unemployment rate (5.2 percent versus 5.5 percent), Round 3 places had a lower percentage of manufacturing employees (27.9 percent versus 33.5 percent), lower 1981-1991 job growth rate (0.9 percent versus 2.9 percent), more vacant houses (8.6 percent versus 7.7 percent) and fewer university graduates (4.2 percent versus 4.8 percent).

In both the US and the EU, the programs appeared to have initially "hit" their targets. Areas designated for assistance were generally much more distressed than those that were not. However, in both cases the programs expanded to cover more and more "distressed" areas over time. For both the US and for the EU as a whole at the highly aggregated NUTS_3 level, areas initially targeted were more distressed than areas subsequently targeted. Italy, measured at a more disaggregated level, was an exception. The paper next examines whether these trends persist in a multivariate analysis of the factors that are likely to predict whether a particular geographic area is designated an EZ or Ob. 2 area.

IV. Regression analysis

The basic model is a probit regression model that estimates the probability that tract or NUTS region i will be designated an Empowerment Zone or Ob.2 area as a function of the tract's or NUTS region's pre-designation characteristics (X_i),

$$\Pr(T_i = 1) = \Phi(X_i\beta), \qquad (1)$$

where *T* is the treatment area.

The model in Equation (1) is then re-estimated for each round of the program:

$$\Pr(T^R{}_i = 1) = \Phi(X_i\beta), \qquad\qquad (2)$$

where *R* is the round and equals one, two, or three. For the US, estimation of the probability of designation in Rounds 2 and 3 excludes tracts that were designated in previous rounds since those tracts were not candidates for further designation. For the EU, each successive program replaced the previous one, so estimation in Rounds 2 and 3 includes all NUTS regions. As before, urban areas that receive other similar types of geographic targeting are excluded, as are rural programs. Thus, in the EU, Objective 1 NUTS areas are excluded.

US Empowerment Zone regression results

Table 6 presents the results of estimating Equations 1 and 2 for the US. The "All EZ" column contains the probit estimation of Equation 1, the probability of Empowerment Zone designation in any of the three rounds. All of the coefficients are significant at the 0.1 level, which is not surprising considering the large number of observations (44,012). Consistent with the means presented in Table 3, the regression results indicate that tracts with lower population, higher unemployment rates, greater poverty rates, lower median household income, greater minority population, fewer high school graduates, lower median house value and lower fraction of owner occupied housing were more likely to be designated Empowerment Zones. Controlling for all of the other factors, tracts with higher median rents and lower population density were more likely to be designated as EZs. These two coefficient estimates differ from the implications from the descriptive statistics, but are not surprising give that they are interpreted as marginal changes holding the other variables constant and given that many of the variables are moderately correlated with one another.

The final three columns in Table 6 provide the results of estimating Equation 2 for each of the three rounds of Empowerment Zones. For the estimates of the probability of becoming an EZ in the first round of designation, many of the same patterns hold. The model is a better fit than Equation 1 as measured by a pseudo R^2 (0.449 versus 0.404) or by the log likelihood (-1118.9 versus –2192.5). Most of the coefficients are still significant and larger for predicting first round EZs than for predicting EZs of any round. One exception is the coefficient on the poverty variable, which is no longer

significant. The other exception is that the population density coefficient (0.008) is positive and significant at the 0.01 level for the first round EZs compared to the negative coefficient for all rounds (-0.006).

When estimating the probability of a second round EZ, the coefficients on the unemployment rate, high school graduation rate, and median house value are no longer significant at the 0.1 percent level, while the coefficient on the poverty rate (0.993) is now positive and significant. Compared to the estimates for first round designation, this model explains less of the variance (pseudo R^2 = 0.298 versus 0.449 and log likelihood = -1078.0 versus –1118.9). In addition, the coefficient on population density (-0.037) changed signs from the estimates of first round designation and is now negative and significant.

The model estimating the probability of EZ designation in the third round is an even poorer fit of the data (pseudo R^2 = 0.293 and log likelihood = -601.4). None of the coefficients on housing market indicators are significant at the 0.1 level, nor are the coefficients on population or unemployment rate. As was the case with the Round 2 estimation (but not for the first round), the coefficient on the population density variable (-0.047) is negative and significant.

The same general pattern emerged from the multivariate regression results as from the univariate descriptive statistics. Census tracts that were more distressed based on the population and housing characteristics were more likely to be designated as an Empowerment Zone. Further, the tracts designated in the first round were more distressed in 1990 than tracts designated in subsequent rounds. By the third round of designation, none of the housing market measures had any significant impact on zone destination.

European Union Objective 2 Area regression results

Table 7a and Table 7b present the result of estimating Equations 1 and 2 for the EU for the smaller subset of countries with programs in all three periods and the set of all countries for the second two periods. The "All Ob. 2" column in Table 7a contains the probit estimation of Equation 1, the probability of Objective 2 (Ob.2) designation in any of the three rounds for the 483 NUTS_3 regions. All of the coefficients are significant at the 0.1 level. Consistent with the descriptive statistics, NUTS_3 areas with greater populations, lower population densities, and higher unemployment rates were more likely to be designated as an Ob.2 area. The final three columns contain the results from

estimating Equation 2 for each of the three rounds. As was the case with the US EZ designation regressions, the Round 1 estimation had the best fit. In both rounds one and two, the coefficient on the unemployment rate (and constant) was the only coefficient significantly different than zero at the 0.1 level. For Round 3, the population and population density variables were also significant at all reasonable significance levels.

Table 7b presents the similar analysis for all 12 Ob.2 countries for the second two rounds of the program. The first, "All Ob. 2," column contains the probit estimation of the probability of Ob.2 designation in either the second or third round. Using all of the countries, the sample size has increased from 483 to 619 observations, but coefficient estimates show exactly the same patterns as with the smaller subset of countries for all three rounds. The final two columns of the table present the results of estimating Equation 2 for rounds 2 and 3. Again, the fit of the regression is better for the earlier round.

Italian Objective 2 Area regression results

Similar to the previous analysis, Table 8 illustrates the results of the probit regressions for Italy sorted into the three designation rounds and the probability of designation in any of the three rounds. Due to the small size of the geographic units (and consequently the large number of observations), most of the coefficient estimates are significant even if the overall fit of the model is modest as indicated by a pseudo R^2 lower or equal to 0.06 for all 4 specifications reported in Table 8.

The poor fit of the model may be largely explained by considering that, unlike with the US EZ program, the unit of analysis differs from the spatial units used to designate the target areas. Characteristics are measured at the city/town level, while the regional focus of the programs leads to larger areas being targeted with incentives. In Italy and the other EU member nations, Ob.2 areas are designated as contiguous groups of city and town jurisdictions forming local economies with prevailing conditions of declining industrial production. Such designation processes, however, do not always exclude city or town jurisdictions with better off social or economic conditions that are surrounded by distressed communities. As a result, Italy's city/town-level (i.e., NUTS_5) data tend to contain much more variation within Ob.2 areas than do the US EZ areas, in which smaller geographic units (census tracts) are specifically singled out and more prosperous areas are excluded.

As for the coefficient estimates of the variables included in the model, the unemployment rate and the 1981-91 ten-year job growth are stable predictors of Ob.2 designation from Round 1 to Round 3. Both coefficients have the expected sign in all three designation rounds—positive for the unemployment rate and negative for the 10-year job growth. Regression results for the probability of designation in any of the three rounds indicate that NUTS_5 areas with lower population density and percentage of manufacturing employees, higher percentage of vacant houses and greater percentage of university graduates were more likely to be pat of Ob.2 areas. For the estimates of the probability of being part of Ob.2 areas in the first designation round, most of the coefficients are still significant and of the same sign as in the "All Ob. 2" equation. The only exceptions are the coefficients on the percentage of manufacturing employees (P-value = 0.199) and the percentage of vacant houses (P-value = 0.360) that are no longer significant at the 0.1 level. Round 2 estimates show differences compared to those of the Round 1 equation only for the coefficients of population density (which is no longer significant at the 0.1 level) and percentage of manufacturing employees (which instead becomes statistically significant). Round 3 estimates resemble the most those of the "All Ob. 2" equation, the only exception being the coefficient of the percentage of university graduates, which is no longer significant at the 0.1 level. Although none of the models fit the data well, the Round 3 equation explains the most variation with a pseudo R^2 of 0.06 and a log likelihood of –2165.14.

V. Concluding remarks

While the spatially targeted economic development programs administered at the national and supranational levels in the US and the EU have different stated goals, there are many similarities in the programs that make it worthwhile to examine the programs together. On both continents, beyond any economic or ideological arguments for targeting investment incentives, part of the impetus for rationing the incentives geographically represented an effort to economize on scarce resources.

The goal of the US Urban EZ program has been to combine economic development incentives with community development initiatives. Therefore, the programs have required a great deal of community-level planning and participation at the proposal stage, and the programs were placed in the most distressed portions of the nation's cities. The goal of the EU program has been to reduce regional disparities in order to

allow for the economic integration of distressed regions. As such, the program is a much more regional approach than the US program.

Lehman (1994) warned of two potential traps with national programs that geographically target incentives. The first is that the program may be altered (diluted) so that it is implemented in a large enough political jurisdictions to gain political approval. In such a case, the programs may become so diluted as to be ineffective. The second trap is one in which the program is not diluted, but it still spread to many different political districts. Here, the problem is that the program becomes very expensive as better-off places are also targeted by incentives that cannot be theoretically justified.

In the programs examined in this paper, there is evidence that the programs have fallen into both traps. In the US, the programs display evidence of dilution. While more justifiable as a program to target impoverished urban areas, the programs were also extended to rural areas from the start. In addition, the selection process appears to have been very political (Paige, 1999), and the Urban and Rural Empowerment Zone program has been expanded in three rounds to include Urban and Rural Enterprise Communities, Supplemental Enterprise Zones, Enhanced Empowerment Communities, Strategic Planning Communities, and Renewal Communities. In addition to greatly increasing the geographic coverage of the programs over time, the incentives have become less generous, as the block grant money was eliminated for the later rounds of the Empowerment Zone programs.

The US EZ program also shows evidence of falling into the second trap. After the first round, the minimal distress criteria were relaxed to allow more census tracts to qualify for the program. Further, the empirical examination of the places designated as EZs in this paper shows that the program was indeed more finely targeted at more distressed census tracts initially, and less distressed places were targeted in the latter rounds. The probit regression model did a much better job of predicting which tracts would be targeted in the first round than in Round 2 or Round 3.

The European Union's structural programs have also fallen into both traps. While reforms refocused the programs in 1989, by the second round there existed four different objectives spatially targeting different places for special incentives. Round 3 simplified the number of programs but did not reduce the geographic scope of the project.

The Ob. 2 programs in particular have fallen into the second trap. In contrast to the Urban EZ program that excludes better-off parts of urban areas, the regional implementation of the Ob. 2 programs necessitates that the programs also target some well-off portions of declining regions. The empirical results of the previous section are consistent with these observations. In the EU as a whole, the probit model had the best fit for the first Ob. 2 round, and the descriptive statistics at the NUTS_3 level indicated that provinces with the highest unemployment rates were targeted in the earlier rounds. However, when the same type of analysis was performed at a finer geographic level, NUTS_5, for Italian cities and towns, it became much more difficult to distinguish the treated from untreated areas. The models for Italy had very little predictive power. Thus, while the programs do appear to target distressed regions, the broad brush also places cities doing well within those regions.

While it appears that federal spatially targeted programs are falling into the political traps of expansion to less well-targeted areas over time in the US and the EU, it is important for future research to take the next step and evaluate how program outcomes differ based on the initial characteristics of the areas targeted.[16] Expansion is only a trap if program effectiveness suffers as a consequence. The results of such impact evaluation will be particularly useful as the EU formulates policy to aid the economic integration of new countries during its current round of expansion.

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[16] In one study, Engberg and Greenbaum (1999) found some differential impacts of US state enterprise zone programs on local housing prices depending on initial vacancy rates.

Table 1. U.S. Urban Empowerment Zone Programs

Round 1 (1994)	Round 2 (1998)	Round 3 (2001)
Atlanta, GA[a]	Boston, MA	Fresno, CA
Baltimore, MD	Cincinnati, OH	Jacksonville, FL
Chicago, IL	Columbia/Sumter, SC	Oklahoma City, OK
Cleveland, OH[b]	Columbus, OH	Pulaski County, AR
Detroit, MI	Cumberland County, NJ	San Antonio, TX
Los Angeles, CA[b]	El Paso, TX	Syracuse, NY
New York, NY	Gary/East Chicago, IN	Tucson, AZ
Philadelphia, PA/Camden, NJ	Ironton, OH/Huntington, WV	Yonkers, NY
	Knoxville, TN	
	Miami/Dade County, FL	
	Minneapolis, MN	
	New Haven, CT	
	Norfolk/Portsmouth, VA	
	Santa Ana, CA	
	St. Louis, MO/East St. Louis, IL	

Notes: Dates of zone designation in parentheses.
      [a] Converted into a Renewal Community in Round 3.
      [b] Initially designated as Supplemental Empowerment Zones.

Table 2. EU Objective 2 Areas at the NUTS_1 Level

NUTS_1	Round 1 (1989-1993)	Round 2 (1994-1999)	Round 3 (2000-2006)
Austria			
Ostösterreich		X	X
Südösterreich		X	X
Westösterreich		X	X
Belgium			
Région Bruxelles Capitale			X
Vlaams Gewest	X	X	X
Région Wallonne	X	X	X
Germany			
Baden-Württemberg			X
Bayern		X	X
Berlin	X	X	X
Bremen	X	X	X
Hamburg			X
Hessen		X	X
Niedersachsen	X	X	X
Nordrhein-Westfalen	X	X	X
Rheinland-Pfalz	X	X	X
Saarland	X	X	X
Schleswig-Holstein		X	X
Denmark			
Denmark	X	X	X
Spain			
Noroeste	X		
Noreste	X	X	X
Comunidad De Madrid	X	X	X
Este	X	X	X
Finland			
Åland			X
Manner-Suomi		X	X
France			
Île De France			X
Bassin Parisien	X	X	X
Nord - Pas-De-Calais	X	X	X
Est	X	X	X
Ouest	X	X	X
Sud-Ouest	X	X	X
Centre-Est	X	X	X
Méditerranée	X	X	X

Table 2. EU Objective 2 Areas at the NUTS_1 Level, Continued

NUTS_1	Round 1 (1989-1993)	Round 2 (1994-1999)	Round 3 (2000-2006)
Italy			
Nord Ovest	X	X	X
Lombardia	X	X	X
Nord Est	X	X	X
Emilia-Romagna		X	X
Centro	X	X	X
Lazio	X	X	X
Abruzzo-Molise			X
Luxembourg			
Luxembourg (Grand-Duché)	X	X	X
Netherlands			
Noord-Nederland	X	X	X
Oost-Nederland	X	X	X
West-Nederland			X
Zuid-Nederland	X	X	X
Sweden			
Sverige		X	X
United Kingdom			
North East	X	X	X
North West	X	X	X
Yorkshire And The Humber	X	X	X
East Midlands	X	X	X
West Midlands	X	X	X
East Of England		X	X
London		X	X
South East		X	X
South West		X	X
Wales	X	X	X
Scotland	X	X	X

Note: "X" represents presence of an Objective 2 area in the NUTS_1 regions during the particular program period.

Table 3. Characteristics of US Urban Census Tracts in 1990

by Empowerment Zone Status

1990 Census Variables	No EZ[a]	EZ[a]	Round 1	EZ Round 2[b]	Round 3[b]
Population	4361.959	2827.275	2695.201	2862.964	3126.266[*]
	(2503.276)	(2074.647)	(2106.781)	(1954.966)	(2196.679)
Population density	2477.368	5367.366	8156.046	3086.128[***]	2121.945[***]
(people per km^2)	(5195.252)	(7892.961)	(10299.620)	(2810.551)	(2514.139)
% Unemployment	0.065	0.197	0.233	0.166[***]	0.160[***]
	(0.053)	(0.118)	(0.140)	(0.084)	(0.071)
% Poverty	0.122	0.444	0.468	0.414[***]	0.436[**]
	(0.123)	(0.157)	(0.172)	(0.145)	(0.117)
Median household income	33806.960	12782.640	12251.760	13426.390[**]	12979.870
	(15957.180)	(6579.495)	(6208.336)	(6730.712)	(7186.789)
% Minority	0.253	0.795	0.891	0.703[***]	0.711[***]
	(0.289)	(0.280)	(0.214)	(0.323)	(0.262)
% High school graduates	0.754	0.483	0.433	0.548[***]	0.492[***]
	(0.168)	(0.157)	(0.149)	(0.153)	(0.141)
Median rent	502.075	316.795	319.721	327.028[*]	288.032[***]
	(197.737)	(129.723)	(128.415)	(145.550)	(90.555)
Median house value	111007.000	44114.500	41405.360	49824.090[**]	40252.370
	(89665.050)	(42511.870)	(46679.820)	(41415.030)	(29524.680)
% Owner occupied housing	0.618	0.267	0.220	0.282[***]	0.367[***]
	(0.249)	(0.201)	(0.190)	(0.198)	(0.200)
Number of tracts	43291	721	348	249	124

Notes: Standard deviations are in parentheses.

[a] Tests of the equality of EZ and non-EZ means are all rejected at the 0.0001 level.

[b] Tests of the equality of the means from Round 1:

[*] P-value≤0.1 ** P-value≤0.05 *** P-value ≤0.01

Table 4a. Characteristics of EU NUTS_3 Areas in 1990

by Objective 2 Status

Excluding Austria, Finland, Sweden, and England

Variables	Non Ob. 2	Ob. 2[a]	Objective 2 Round 1	Round 2[b]	Round 3[b]
Population	216422	420038***	581259	501783	432745
	(226699)	(575241)	(894158)	(749921)	(592195)
Population density	601.933	569.294	687.865	625.911	569.019
	(1390.533)	(1000.219)	(822.445)	(756.921)	(1016.481)
% Unemployment	0.041	0.073***	0.091	0.083*	0.073***
	(.019)	(0.027)	(0.030)	(0.029)	(0.027)
Number of observations	279	204	63	95	190

Notes: Standard deviations are in parentheses.
[a] Tests of the equality of Ob. 2 and non-Ob. 2 means.
[b] Tests of the equality of the means from Round 1.
* P-value≤0.1 ** P-value≤0.05 *** P-value ≤0.01

Table 4b. Characteristics of EU NUTS_3 Areas in 1995

by Objective 2 Status

Including all Countries

Variables	Non Ob. 2	Ob. 2[a]	Objective 2 Round 2	Round 3[b]
Population	256378	445871***	506662	455151
	(256809)	(575289)	(696354)	(587.514)
Population density	645.744	789.346	841.127	807.214
	(1340.315)	(1328.917)	(1166.451)	(1351.498)
% Unemployment	0.061	0.089***	0.101	0.089***
	(0.025)	(0.032)	(0.033)	(0.033)
Number of observations	329	290	157	275

Notes: Standard deviations are in parentheses.
[a] Tests of the equality of Ob. 2 and non-Ob. 2 means.
[b] Tests of the equality of the means from Round 1:
* P-value≤0.1 ** P-value≤0.05 *** P-value ≤0.01

Table 5. Characteristics of Italy NUTS_5 Areas in 1991
by Objective 2 Status

Variables	Non Ob. 2	Ob. 2[a]	Objective 2		
			Round 1	Round 2[b]	Round 3[b]
Population density	294.170	194.073[***]	229.635	306.422[***]	135.583[***]
	(529.960)	(384.888)	(369.536)	(516.190)	(285.112)
Unemployment rate	0.045	0.053[***]	0.055	0.053[*]	0.052[*]
	(0.026)	(0.024)	(0.021)	(0.020)	(0.026)
% Manufacturing employees	0.371	0.314[***]	0.335	0.360[**]	0.279[***]
	(0.209)	(0.201)	(0.213)	(0.209)	(1.185)
% Ten-year job growth (1981-91)	0.066	0.016[***]	0.029	0.041	0.009[***]
	(0.195)	(0.139)	(0.141)	(0.138)	(0.143)
% Vacant houses	0.071	0.081[***]	0.077	0.070[***]	0.086[***]
	(0.041)	(0.047)	(0.041)	(0.037)	(0.050)
% University graduates	0.041	0.045[***]	0.048	0.050	0.042[***]
	(0.027)	(0.030)	(0.032)	(0.033)	(0.027)
Number of observations	3858	1492	576	675	827

Notes: Standard deviations are in parentheses.
[a] Tests of the equality of Ob. 2 and non-Ob. 2 means.
[b] Tests of the equality of the means from Round 1.
[*] P-value≤0.1 ** P-value≤0.05 *** P-value ≤0.01

Table 6. Probability of US Empowerment Zone Designation:

Probit Regressions

Variable	All EZ	Round 1	Round 2	Round 3
Population[a]	**-0.049**	**-0.084**	**-0.027**	-0.002
	(0.000)	**(0.000)**	**(0.060)**	(0.928)
Population density[a]	**-0.006**	**0.008**	**-0.037**	**-0.047**
	(0.044)	**(0.014)**	**(0.000)**	**(0.001)**
% Unemployment	**0.847**	**1.863**	0.258	-0.686
	(0.001)	**(0.000)**	(0.470)	(0.126)
% Poverty	**1.369**	0.269	**1.028**	**1.796**
	(0.000)	(0.237)	**(0.000)**	**(0.000)**
Median household income[a]	**-0.030**	**-0.030**	**-0.044**	**-0.022**
	(0.000)	**(0.000)**	**(0.000)**	**(0.009)**
% Minority	**1.041**	**1.524**	**0.837**	**0.750**
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**
% High school graduates	**-0.576**	**-1.482**	0.274	**-0.422**
	(0.000)	**(0.000)**	(0.118)	**(0.067)**
Median rent[a]	**0.777**	**1.395**	**1.091**	-0.272
	(0.001)	**(0.000)**	**(0.000)**	(0.500)
Median house value[b]	**-0.181**	**-0.245**	-0.028	-0.063
	(0.000)	**(0.000)**	(0.653)	(0.566)
% Owner occupied housing	**-0.680**	**-0.829**	**-0.699**	-0.021
	(0.000)	**(0.000)**	**(0.000)**	(0.920)
Constant	**-1.825**	**-2.093**	**-2.329**	**-2.488**
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**
Pseudo R^2	0.404	0.449	0.298	0.293
Log likelihood	-2192.531	-1118.870	-1078.003	-601.350
Number of observations	44012	44012	43664	43415

Notes: P-values are in parentheses.
Coefficients in bold are significant at the 0.1 significance level.
[a] Variables measured in thousands.
[b] Variable measured in hundreds of thousands.

Table 7a. Probability of EU Objective 2 Designation:
Probit Regressions Excluding Austria, Finland, Sweden, and England

Variable	All Ob. 2	Round 1	Round 2	Round 3
Population[a]	**0.085**	0.015	0.025	**0.096**
	(0.003)	(0.501)	(0.279)	**(0.001)**
Population density[b]	**-0.026**	-0.007	-0.011	**-0.025**
	(0.001)	(0.314)	(0.122)	**(0.001)**
% Unemployment[c]	**0.348**	**0.324**	**0.292**	**0.297**
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**
Constant	**-2.187**	**-3.272**	**-2.677**	**-2.053**
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**
Pseudo R^2	0.310	0.328	0.268	0.269
Log likelihood	-227.151	-125.741	-175.303	-236.755
Number of observations	483	483	483	483

Notes: P-values are in parentheses.
Coefficients in bold are significant at the 0.1 significance level.
[a] Variable measured in hundreds of thousands.
[b] Variable measured in hundreds.
[c] Variable measured in hundredths.

Table 7b. Probability of EU Objective 2 Designation:
Probit Regressions Including all Countries

Variable	All Ob. 2	Round 2	Round 3
Population[a]	**0.078**	**0.043**	**0.079**
	(0.000)	**(0.014)**	**(0.000)**
Population density[b]	**-0.016**	**-0.015**	**-0.013**
	(0.001)	**(0.009)**	**(0.005)**
% Unemployment[c]	**0.208**	**0.247**	**0.184**
	(0.000)	**(0.000)**	**(0.000)**
Constant	**-1.742**	**-2.674**	**-1.667**
	(0.000)	**(0.000)**	**(0.000)**
Pseudo R^2	0.175	0.238	0.155
Log likelihood	-352.899	-267.114	-359.229
Number of observations	619	619	619

Notes: P-values are in parentheses.
Coefficients in bold are significant at the 0.1 significance level.
[a] Variable measured in hundreds of thousands.
[b] Variable measured in hundreds.
[c] Variable measured in hundredths.

Table 8. Probability of Objective 2 Designation in Italy:

Probit Regressions

Variable	All Ob. 2	Round 1	Round 2	Round 3
Population density[a]	**-0.0003**	**-0.0002**	-0.00003	**-0.0005**
	(0.000)	**(0.007)**	(0.567)	**(0.000)**
Unemployment rate[b]	**0.056**	**0.062**	**0.059**	**0.022**
	(0.000)	**(0.000)**	**(0.000)**	**(0.007)**
% Manufacturing employees[b]	**-0.003**	0.002	**0.005**	**-0.008**
	(0.001)	(0.199)	**(0.000)**	**(0.000)**
% Ten-year job growth[b] (1981-91)	**-0.968**	**-0.399**	**-0.336**	**-0.713**
	(0.000)	**(0.014)**	**(0.024)**	**(0.000)**
% Vacant houses[b]	**0.019**	0.005	-0.009	**0.024**
	(0.000)	(0.360)	(0.115)	**(0.000)**
% University graduates[b]	**0.039**	**0.053**	**0.063**	0.010
	(0.000)	**(0.000)**	**(0.000)**	(0.259)
Constant	**-0.960**	**-1.814**	**-1.792**	**-0.951**
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**
Pseudo R^2	0.047	0.028	0.028	0.060
Log likelihood	-3018.712	-1776.656	-1970.815	-2165.139
Number of observations	5350	5350	5350	5350

Notes: P-values are in parentheses
[a] Variable in thousands.
[b] Percentage variables in hundredths.
Coefficients in bold are significant at the 0.1 significance level.

Appendix

Table 9. Variable Definitions and Sources

Variable	Definition	Source
US		
Population	Population	Decennial Census[a]
Population density	People per square km	Decennial Census[a]
% Unemployment	Unemployment rate	Decennial Census[a]
% Poverty	Poverty rate	Decennial Census[a]
Median household income	Median household income	Decennial Census[a]
% Minority	Percentage minority	Decennial Census[a]
% High school graduates	Percentage high school graduates	Decennial Census[a]
Median rent	Median rent	Decennial Census[a]
Median house value	Median house value	Decennial Census[a]
% Owner occupied housing	Percentage owner occupied housing	Decennial Census[a]
EU		
Population	Population	Eurostat[b]
Population density	People per square km	Eurostat[b]
% Unemployment	Unemployment rate	Eurostat[b]
ITALY		
Population density	People per square km	ISTAT[c]
Unemployment rate	Unemployment rate	Geostat[d]
% Manufacturing employees	Percentage manufacturing employees	Infocamere[c]
% Ten-year job growth (1981-91)	Percent change in total jobs between 1981 and 1991	Geostat[d]
% Vacant houses	Percentage vacant houses	Censimento popolazione[c]
% University graduates	Percentage university graduates	Censimento popolazione[c]

Notes:

[a] U.S. Department of Housing and Urban Development; Office of Policy Development and Research (Vol. 2)

[b] European Commission (2001)

[c] Istituto Tagliacarne (1990)

[d] ISTAT, ESRI ITALIA, SEAT (1997)

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