



# MANAGING COMPETITION IN CITY SERVICES: THE CASE OF BARCELONA

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**ABSTRACT:** *“Clean and safe” strategies are part of urban regeneration in the entrepreneurial city. These strategies are often characterized by privatization and public-private partnerships that enhance investment and create a city space more amenable to tourists and consumers. While such approaches promote increased investment, and differentiate services by district, they raise challenges of competition, cost escalation, and public participation. Barcelona’s solid waste management strategy is presented to show the importance of a strong public coordination role when using competition to promote technological innovation and improved quality in city service delivery.*

**B**arcelona, Spain is well known as a prototype for the new tourist city. Since it hosted the Olympic Games in 1992, Barcelona has remade itself—becoming a major attraction for European and international tourism. It has become one of the leading tourist destinations in Europe, along with Paris and London, in a relatively short period of time. To do so, Barcelona has capitalized on its role as a leader in arts and architecture, tackled crime, and cleaned up the old town so it is safe and attractive to a tourist market. All city services have come under pressure, requiring a more coordinated city response. To address these challenges, Barcelona has developed a planning model that brings together divergent interests and addresses not only infrastructure and urban services but also attention to cultural and historical values (Subirós, 2003). The Barcelona Plan envisions “an urban space that requires cohesion and a differentiated strategy to situate our actual city among the most advanced in Europe” (Pestaña, 2004, p. 1). Central to this strategy has been the role of local government, together with the private sector, to promote investment and innovative, new flexible management systems for urban regeneration (Borja & Castells, 1997). In this article, we look at one aspect of that strategy, municipal solid waste collection and street cleaning.

Around the world, cities are emphasizing the arts, cultural diversity, and historic heritage. Cities seek to be both “cool” and authentic and so they will be attractive to the “creative class” of workers who well help ensure economic growth (Florida, 2002). In creating a self-reinforcing

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dynamic of cultural richness and economic prosperity, cities position themselves to be globally competitive in a more mobile world (Jessop, 1997). To do so, not only must they market the city, they also must promote neighborhood-level strategies that produce competitively situated places that can attract and hold investment (Brenner, 2004; Brenner & Theodore, 2002). These locational development strategies create an “ideology of place” and also address concerns with safety and cleanliness (Modan, 2007). The interaction of the built environment, political, social, and cultural practices all shape urban spaces (Lefebvre, 1991). There is considerable debate about whether this clean, safe, and creative city strategy is really an authentic representation of the historical and cultural attributes of the city, or merely a strategy that adds one more layer to the “palimpsest of territorial struggles” (Harvey, 2005)—a layer that privileges the elite creative and tourist class over the marginalized population.

To promote clean and safe commercial districts and support the arts, many U.S. cities have turned to business improvement districts (BIDs). BIDs are public–private partnerships that allow property owners in commercial districts to vote to increase their taxes and then keep the increment to invest in urban regeneration strategies of their own choosing. BIDs are a private form of government, where only property owners have a vote (Briffault, 1999). They typically invest in cleanliness and safety by employing private “ambassadors” to walk the streets—cleaning, helping tourists, and chasing away undesirable loiterers (Schaller & Modan, 2005). These BIDs represent the private city, drawing clear boundary lines to neighborhoods, and privatizing and segmenting public goods. This has contributed to the further fragmentation of the city into districts with highly variant levels of public services (garbage collection, police, street life amenities—benches, plantings, etc.). These strategies turn public goods into club goods that allow for increased investment, differential service levels, and greater efficiency (Webster & Lai, 2003). However, BIDs also represent a new form of negotiation of public space—one that has serious implications for citizenship as it privileges property owner and business interests, restructuring the process of opposition and negotiation over which groups get to use public space (Christopherson, 1994; Frug, 1999; Schaller & Modan, 2005; Zukin, 1995).

BIDs have proliferated throughout the United States and the model is now spreading to Europe and elsewhere in the world. Mitchell (1999) was the first to conduct a survey of BIDs in the United States. At that time there were more than 800 BIDs in the United States and over 400 responded to his survey. Eighty-five percent of the respondents focused on street cleaning initiatives; this activity was second only to consumer marketing (Mitchell, 2001). The first international survey of BIDs (or BID-like entities) was conducted by Hoyt in 2003. Of the 1,200 respondents, only 13 were from continental Europe and none were from Spain. What distinguished the European BIDs from the American counterparts is the much heavier role of government. European BIDs are less likely to rely solely on taxes; over 70% receive government grants, and most have government involvement (Hoyt, 2003). Cities have higher priority in national policies in Europe and thus there is less need for supplementary BID assessments to fund the increased investment (Levy, 2001). European BIDs were somewhat less involved in street cleaning activities than in the United States but these activities were still practiced by 77% of the responding European cases. While BIDs on both sides of the Atlantic are a response to the entrepreneurial city (Ward, 2006), in the United States they often substitute for inadequate government services, whereas in Europe they are a means to complement government services with increased resident and business involvement.

As cities pursue “clean and safe” strategies, what is the relative role of public and private, competition, and coordination? In this article we show the importance of strong city-wide management and coordination when using competitive public–private management strategies to promote innovation and quality in city services. We analyze the case of Barcelona’s solid waste collection strategy. We show how the city managed improved collection and recycling, dealt with diversity of need across the city, and promoted competition to ensure higher quality and lower costs while still maintaining coordination control.

Although Barcelona has promoted clean and safe streets, and used private vendors in the process, it has avoided the neighborhood-level fragmentation and private control of BIDs and instead maintained a public leadership role. This enables coordination across the entire city and allows for the realization of efficiency, environmental, and social objectives including social cohesion. It is a public strategy with private players. Control and coordination remain at the city level—under public scrutiny and control. The success of the case provides an interesting contrast for the more private-led BID strategies practiced in the United States.

## **PRIVATIZATION AND URBAN STRATEGY**

While BIDs are uncommon in Europe, privatization strategies are not. It is common for city governments to contract with private vendors for basic city services, especially sanitation. Private delivery of solid waste collection is the most common form of service delivery among municipalities in countries like Denmark (85%), Norway (73%), Sweden (63%), and Spain (56%) (Bel, 2006a). Private contracting for solid waste is not as high in the United States as in Europe; however, the use of BIDs and supplemental street cleaning services in the United States is growing. The advantage of city contracting is that it can avoid the fragmentation of service delivery and governance to the neighborhood level by BIDs and still capture the efficiencies and flexibility of private delivery. BIDs create a fragmented public–private market without coordinated control. The nonprofit leadership, limited staff, small-scale, and competitive neighborhood focus of each individual BID undermines the potential for a coordinated city-wide strategy. The BID model is a competitive framework without coordinated control. City-wide coordination of market delivery strategies is critical as cost savings have been shown to erode over time due to collusion, loss of competition, and the high costs of management and monitoring (Bel & Costas, 2006; Bel, Hebdon, & Warner, 2007; Dijkgraaf & Gradus, 2008a).

Wide experience with privatization in urban solid waste markets has not demonstrated a clear case for efficiency gains. Theoretically, lower costs, higher quality, and improved processes are predicted as a result of the pressure of competition and the profit incentive under private production. This is the promise of privatization. Unfortunately, too often these promises are not borne out in practice. While a few studies from the 1970s find cost savings with privatization, these results do not persist over time, due in part to erosion in competition (Bel & Warner, 2008a, 2008b). One of the biggest challenges in practice has been maintaining competition in the market at the local level. Even though research shows that the economies of scale are exhausted above 20,000 population in waste collection (Bel & Costas, 2006; Callan & Thomas, 2001; Stevens, 1978),<sup>1</sup> the industrial structure of the waste collection industry tends toward monopoly production, at least at the municipal scale. Dijkgraaf and Gradus (2007, 2008a) found that significant consolidation during the 1990s has led to erosion in cost savings over time in Dutch markets, and similar results have been found by Bel and Costas (2006) in Spain, and Davies in the United Kingdom (2007).

Recent work by Callan and Thomas (2001) in the United States finds economies of scope between waste collection and recycling, suggesting potential for further industry concentration in the future. The largest private waste management companies in the United States are Waste Management Incorporated, Allied Waste Industries, and Republic Services. These companies can offer economies of scale and vertical integration of services along the waste stream, but the rise of these three companies also illustrates a central problem in contract markets for solid waste services. Competition naturally erodes and monopolistic or oligopolistic markets emerge. Spain also has experienced concentration problems in solid waste markets as three holdings—Fomento de Construcciones y Contratas, Ferrovial, and ACS-Urbaser—control two-thirds of the contracts (Bel, 2006a). Most municipalities do not face a competitive market of alternative suppliers. Thus, the only competition is *for* the market—for the initial contract—and even then competition is

often quite limited due to wider industry consolidation. This has led many Spanish municipalities to focus on managing monopoly rather than seeking to maintain competition (Warner & Bel, 2008).

Without competition, property rights theory predicts excess profits and reduced quality in private production (Hart, Shleifer, & Vishny, 1997). Industrial organization and transaction cost economic theories point to the importance of a sector's market structure and incentives. To promote private competition with public firms, the Dutch government implemented the VAT compensation fund to place higher tariffs on public providers and make private companies more competitive. But the result was that private providers increased their prices (Dijkgraaf & Gradus, 2008a).

Despite government regulation to ensure competition and price policies to ensure cost efficiencies, city managers are faced with the challenge of creating and maintaining competition in local solid waste markets. In the United States, local governments attempt to maintain competition by splitting their service markets. City managers argue that by splitting their service markets and maintaining a level of public production even while contracting they can sustain competition at least between public and private crews (Ballard & Warner, 2000; Johnston, Romzek, & Wood, 2004). This mixed public-private production grew by 50% across all services from 1997 to 2002 (Warner & Hefetz, 2008).<sup>2</sup>

We are also seeing a growing reverse privatization process in the United States as cities bring previously contracted service delivery back in house (Hefetz & Warner, 2004, 2007). Reverse privatization in solid waste accounts for 19% of production, double the level of new contracting out (Warner & Bel, 2008). The reasons city managers give for this return to public delivery include problems with cost savings, service quality, monitoring, and ensuring citizen satisfaction (Hebdon & Jalette, 2008; Hefetz & Warner, 2007; Warner, 2008; Warner & Hefetz, 2004). Privatization experience has revealed that market management alone is not enough, attention to public planning and participation is also required. This article analyzes how Barcelona exhibited a strong public coordination role when using competition to promote technological innovation and improved service delivery quality.

In Spain, it is unusual to see a large city split its solid waste market. Rather than promoting competition at the market level, many Spanish municipalities create public firms or mixed public-private firms that enjoy the benefits of private management but maintain public monopoly control. In solid waste, such firms represent 19% of all service delivery (Warner & Bel, 2008). By mixing at the firm level, Spanish local governments are able to gain the flexibility and innovation of private sector involvement without losing public control. This has led to greater stability in solid waste privatization in Spain as compared to the United States (Warner & Bel, 2008).

Barcelona is an exception. In 2000, the municipality of Barcelona split the city into four districts to promote competition among private waste collectors and street cleaners. Unlike smaller U.S. cities that use public crews to create competition with private companies, Barcelona has a large enough scale to attract competition among private companies. How Barcelona engineered competition and used it to improve performance, sustainability (more recycling and less disposal), and to stimulate innovation and technological advance is the story of this case study.

## **THE BARCELONA CASE: COMPETITION FOR QUALITY AND PROCESS**

### **Methodology**

We use several sources for the data in this case study. Data on the City of Barcelona were obtained from the City web page, as well as the city Department of Environmental Services. Data on the metro area and the Province of Barcelona were obtained from the web page of the regional

government (Generalitat de Catalunya). In addition, in-depth interviews were conducted with Jordi Salvany, Chief of solid waste collection and street cleaning services in the municipality of Barcelona when the reform was implemented, and two of the main private vendors: Rosa Forcada of CESPÀ, and Antonio Orrego of Urbaser. A review of current academic literature provides secondary sources of information. One limitation of our focus on the Barcelona case is that results may not be relevant for cities of smaller size, which lack strong managerial capacity or which are under severe fiscal stress. A public coordination strategy requires public capacity to engage with market players.

### **Background: Service Delivery Before the Reform**

Toward the end of the 1990s, the performance of the solid waste collection service in the city of Barcelona was faltering. Although population was decreasing, the quantity of solid waste was increasing: between 1998 and 2000, collected waste in kilos per inhabitant increased by 7.4%. Poor service delivery raised complaints from city residents, and quality improvement was weak, and lagging behind other cities in the Province of Barcelona.

Although the percentage of recycling was larger in the city of Barcelona compared to the Metropolitan Area and the Province in 1998, by 2000 the percentage of recycling in the city of Barcelona was lower than that of other cities in the Metropolitan Area of Barcelona, and in the province of Barcelona.<sup>3</sup> According to information provided in the Annual Reports on environmental services of the Municipality of Barcelona, the percentage of separated waste (intended to be recycled) was 8% in 1998, and had increased only to 12% in 2000 (see Table 1). This was a very modest improvement, particularly if we compare with ratios of progress in other cities: in the metropolitan area of Barcelona (excluding the city of Barcelona), the rate of increase in the percentage of recycling was 14.2% higher than that in the city of Barcelona. In the province of Barcelona (excluding the city of Barcelona), the rate of increase of the percentage of recycling was 17.4% higher than that in the city of Barcelona.

### **Reforming Solid Waste and Street Cleaning in Barcelona**

Street cleaning and waste removal are key services in the “clean and safe” urban regeneration strategy. In Barcelona, Las Ramblas and Ciutat Vella are key tourist attractions. But the heavy tourist traffic, street vendors, and narrow streets make street cleaning and waste removal especially important. Increased emphasis on the environment and recycling also posed a challenge to the city as it sought to upgrade services. The question was whether to shift to a fragmented, BID-style neighborhood model or maintain a municipal coordination role. The city chose to introduce competition but maintain a city-wide coordination and management role.

Private contractors have delivered solid waste collection in the city of Barcelona at least since 1890. In the middle 1970s, shortly before municipal democracy was reestablished in Spain in 1979, new concessions for solid waste collection were awarded with a length of 25 years, and they were due to expire in 2000. Two firms obtained the concessions for solid waste collection: Concesionaria de Usuarios de Servicios de Limpieza Pública (CUSLP) and Fomento de Construcciones y Contratas (FCC). Each was responsible for one part of the city.

Street cleaning was a monopoly concession in which FCC held the contract for the whole city. In 1993, FCC’s concessions for street cleaning expired. At that moment, the monopoly was broken, and two concessions were awarded, one to FCC and another one to CESPÀ. Concessions were awarded for a 7-year period, and they were scheduled to expire by 2000, at the same time that CUSLP’s and FCC’s solid waste collection contracts would expire. Thus, the preparation for reform took place long before the crucial moment to implement it arrived.

**TABLE 1**  
**Basic Data on Solid Waste Collection in the City of Barcelona**

	1998	1999	2000	2001	2002	2003	2004	2005
Disposal (tons)	631,956	647,516	657,209	630,102	588,030	502,276	466,270	463,466
Selective (tons)	61,492	80,821	97,890	142,485	217,039	319,959	372,328	391,385
Other types (tons)	72,604	71,708	62,421	64,198	45,374	38,290	35,894	27,188
Total waste (tons)	766,052	800,045	817,520	836,785	850,443	860,525	874,492	882,039
<b>Percent selective collection</b>	<b>8.0%</b>	<b>10.1%</b>	<b>12.0%</b>	<b>17.0%</b>	<b>25.5%</b>	<b>37.2%</b>	<b>42.6%</b>	<b>44.4%</b>
Inhabitants	1,505,581	1,503,451	1,496,266	1,505,325	1,527,190	1,582,738	1,578,546	1,593,075
Tons/person	0.51	0.53	0.55	0.56	0.56	0.54	0.55	0.55
kilos/person	508.8	532.1	546.4	555.9	556.9	543.7	554.0	553.7
Rate of increase k/p	3.7%	4.6%	2.7%	1.7%	0.2%	-2.4%	1.9%	-0.1%
Number of tourists	2,969,490	3,123,476	3,141,162	3,378,635	3,580,986	3,848,187	4,549,587	5,061,264
Rate of increase	5.1%	5.2%	0.6%	7.6%	6.0%	7.5	18.2%	11.2%
Number of airport passengers	16,194,805	17,421,938	19,375,000	20,545,680	21,108,838	22,482,183	24,363,294	26,941,215
Rate of increase	7.5%	7.6%	11.2%	6.0%	2.7%	6.5%	8.4%	10.6%

*Sources:*

- Data on Solid Waste: Annual Reports of the Environmental Services of the municipality of Barcelona.
- Inhabitants: National Institute of Statistics (INE).
- Data on Tourism: Annual reports of the Municipality of Barcelona.
- Data on Airport Passengers: AENA (Spanish Public Agency for Airport Management).

**TABLE 2****Territorial Sections and Concessionaires of Solid Waste and Street Cleaning in Barcelona**

Section	Districts	Inhabitants	Percentage	Concessionaire
Northern	Horta-Guinardó, Nou Barris, and Sant Andreu	477,499	30.0%	ACS-Urbaser
Western	Sarrià-Sant Gervasi, Les Corts, and Gràcia	343,136	21.5%	FCC
Eastern	Eixample and Sant Martí	483,514	30.4%	Ferrovial-CESPA
Southern	Sants-Montjuic and Ciutat Vella	288,926	18.1%	FCC
Total		1,593,075	100.0%	

*Source:* Authors based on city statistics. Data are for year 2005.

In 2000, the system was entirely reformed. The city was divided into four sections, and separate concessions were awarded for each section. The concessionaires were designed as “operadors territorials” (territorial operators), and the concessions comprised both solid waste collection and street cleaning. There was a special provision limiting the maximum number of concessions that a single firm could obtain to two sections of the city. Finally, contrary to the extremely long length of the old concessions awarded in the predemocracy period, concessions given in 2000 were awarded for 7 years.<sup>4</sup>

The main objectives stressed by the local government for implementing the reform were: to improve the quality of the service, to stimulate a more environmental friendly service, and to improve management of resources. The local government intended to introduce competition by (1) breaking down the monopoly in street cleaning and the duopoly in solid waste collection (in which FCC had a dominant position), and (2) shortening the length of concessions. The local government believed this policy would stimulate technological innovation and quality improvements that would help the local government implement more strict environmental requirements. In addition, by integrating solid waste collection and street cleaning, the reform tried to improve coordination and increase responsiveness from concessionaires to unexpected service needs that are usual in large cities like Barcelona, particularly when tourism is increasing in importance, as the bottom rows of Table 1 show. Solid waste collection and street cleaning are seen as multiproduct industries by the city of Barcelona, which means that integrating both services in one concession (for each district) is likely to provide economies of scope for the firm, and economies of scale for the city in monitoring.

With the new concession policy, the four sections for service delivery were established as follows (Table 2):

- The former incumbent FCC obtained two concessions; the city districts included in these two concessions contain around 40% of Barcelona’s population. FCC is the leading waste collection firm in Spain, with a market share of 52% of population served by private firms in Spain (market share of 56.9% in Catalonia).
- Ferrovial-CESPA obtained one concession, with districts including around 30% of Barcelona’s population. Ferrovial-CESPA is the second largest private provider in Spain, with a market share of 16.9% (market share of 15.3% in Catalonia).
- Finally, ACS-Urbaser obtained another concession, with districts including around 30% of Barcelona’s population. ACS-Urbaser is the third largest waste services firm in Spain, with a market share of 16.2% of the Spanish population that is served by private firms (market share of 13.4% in Catalonia).<sup>5</sup>

Dividing the city into four districts was a core landmark in the reform. On the one hand, it allows benchmark comparison, since it increases information available to the city government. Second,

private companies know they can get only two concessions, but they do not know in advance which concessions they will get or if they will get any at all. Thus, they submit bids for all four concessions. In fact, the clauses governing the bidding for the next contracts, to be awarded in 2009, require each bidder to submit bids for each of the four concessions (Ajuntament de Barcelona, 2008).

Five firms submitted bids for concessions beginning in 2000. Today, three firms are operating in the city, while there were only two in waste collection and one in street cleaning before the reform. The new concessions awarded for 2000 allowed the firm Urbaser to enter the market in Catalonia, where its position was only marginal before. This has increased the number of large firms active in the region capable of delivering service in the city of Barcelona. The new bidding process is expected to attract interest from other large multiservice firms in Spain (e.g., Sacyr and Acciona) that recently have begun to enter the private market for delivery of waste collection and street cleaning.

### **An Assessment of the Reform**

City managers and private companies delivering the service agree that the reform has delivered very positive results. The main improvements can be synthesized as follows:

- (a) *Street cleaning has improved.* The main factor is that service delivery now better matches the particular urban conditions of each district. Rather than just a “City,” large cities like Barcelona can be seen as several cities within an area. Splitting the service into viable geographical sections, each one with relatively homogeneous characteristics, helps to improve correspondence between residential and commercial needs on the one hand, and service delivered on the other. For instance, in 2003–2004 the old town (Ciutat Vella), was experiencing deteriorating street conditions (overflowing garbage cans, dirty streets and sidewalks, etc.) due to an increase in tourism and immigration.

Business associations and residents’ associations in the old town expressed increasing concern over this problem. The city government promoted an initiative in the Ciutat Vella Plan where the private firm delivering waste collection and street cleaning in this district agreed to spend an additional 5 million euro in 2005—an increase of 8.3% in the resources devoted to the service. Under this plan the private contractor increased the human and mechanical resources devoted to street cleaning, and concentrated on expanding weekend and holiday service (Municipality of Barcelona, 2005). As a result, environmental quality in the old town has dramatically improved. The Municipality of Barcelona periodically conducts citizen satisfaction surveys (City Office of Studies and Evaluation).<sup>6</sup> Overall, the surveys show an increase in citizen satisfaction with respect to solid waste and street cleaning.

- (b) *Increasing competition has enhanced the city’s ability to compare between the different concessionaires.* First, the city government obtains more information on the real costs and quality standards of the service delivered by each concessionaire, and can compare between them. Second, concessionaires can compare themselves with the other competitors in the city. The government can compare data on costs and performance in each district, taking into account the different needs and specifications in each contract for each district. The concessionaires know that performance comparison is a crucial factor in obtaining a larger market share (another section of the city) when the next competitive bidding is run. The shorter concession length (7 years, as compared to 25 years in the prior system) makes this important.



TABLE 3

**Rates of Recycling in Barcelona, Its Metro Area (EMHT), and the Province of Barcelona 2000–2005**

	2000	2001	2002	2003	2004	2005
Barcelona	13.1%	13.0%	16.3%	20.5%	22.8%	28.1%
EMHT without BCN	13.7%	16.3%	20.0%	22.8%	24.0%	25.1%
Province without BCN	13.8%	15.5%	17.4%	20.5%	22.8%	26.2%

Source: Authors' analysis based on data from the Generalitat de Catalunya (Junta de Residus).

- (c) *Productivity has increased, and the relationship between quality and price has improved.* Private firms know the technology and management models they are applying, and have better knowledge of the competitors' technologies and models. More technologically advanced collection trucks that allow a more efficient collection of waste for recycling, or improved information systems by using advanced information technologies are examples of these improvements. Technological improvements and managerial innovation help each firm to earn more money, and to improve service delivery relative to the high-quality standards required by the city of Barcelona.
- (d) *Cooperation from the users, both residential and commercial, has improved under the new system.* The city also developed a policy of collaborative planning whereby specific plans are designed and implemented between the city government and the businesses associations in order to promote more recycling of waste generated by commercial interests (particularly pasteboard, glass, etc.). While these initiatives are not directly related to the system of competition, they have been very helpful in increasing the amount of recycling in solid waste collection. Indeed, a careful working of the triad, government–firms–users, is a requirement for the service to be successful in complex environments like the city of Barcelona.

Some empirical evidence confirms improvements in the city along the lines mentioned above:<sup>7</sup>

- Table 3 presents data on recycling as distinct from “selective collection” (see endnote 3). Recycling accounted for 13% of total waste collection in 2000 in Barcelona. In 2005, this percentage had increased to 28% (an increase of 213%). Compared to the surrounding areas, the rate of increase in the Metro Area (EMHT) excluding Barcelona was lower than the increase for Barcelona (14% in 2000 to 25% in 2005—an increase of 184%). In the province of Barcelona—excluding Barcelona—14% of the total waste was effectively recycled in 2000 and this increased to 26% in 2005 (a 190% increase). We can see that with the reform, the city of Barcelona achieved a higher increase and a higher level of recycling overall than did the surrounding metro area and province.
- The earlier trend of increasing generation of waste has stopped. The ratio kilo/person had been increasing between 2% and 5% per year before 2001, but the ratio in 2005 (553.7 kilos/person) is now lower than in 2001 (555.9 kilos/person). This happened in spite of the intense increase in tourist activity in Barcelona. As data in Table 1 show, the number of tourists in 2005 was 60% higher than in 2000. Looking toward the future, the city of Barcelona will need to devote more effort to decrease overall generation of waste.
- Between 2000 and 2005, the number of employees in the government department of environmental services (responsible for monitoring and supervision) decreased from 222 to 174

TABLE 4

**Financial Data for Solid Waste Collection and Street Cleaning in Barcelona**

	2000	2001	2002	2003	2004	2005
Collection + street cleaning (million euro)	84.33	100.81	113.04	130.70	141.88	159.07
Treatment (million euro)	21.50	21.43	27.40	30.47	35.20	32.74
Total costs contracts (million euro)	105.83	122.24	140.44	161.17	177.08	191.81
Adjusted (CPI) total costs (million euro)	105.83	118.91	130.89	145.46	154.25	159.97
Unit cost (euros/ton)	129.45	146.09	165.14	187.30	202.50	217.46
Adjusted (CPI) (euros/ton)	129.45	142.11	153.91	169.04	176.39	181.37
Investments (million euro)	14.98	29.87	43.48	23.44	47.25	58.05
Public employees in the service	222	197	194	189	182	174
Cumulative CPI Barcelona (2000 = 100)	100.0	102.8	107.3	110.8	114.8	119.9

Source: Authors based on costs data in the Annual Reports of the Municipality of Barcelona. Cumulative CPI has been calculated from annual CPI data provided by the National Institute for Statistics (INE).

(see Table 4). Monitoring requirements under the new contracting system are easier because benchmark competition creates incentives for firms to provide accurate information. Second, contracting solid waste collection and street cleaning as one multiproduct contract allows the municipality to achieve economies of scale in monitoring. Finally, the municipal policy of working with business and residential associations in new initiatives and monitoring provides the city with an independent source of information on service quality. Each of these reforms reduces the cost of monitoring.

However, competition has not resulted in reduced costs. In 2005, total costs were 81.2% higher than in 2000, and the increase was 51.2% after adjusting for inflation with the consumer price index (CPI). Unit costs (euro/ton) in 2005 were 68.0% higher than in 2000, and the increase was 40.1% after adjusting for CPI.

The main factor driving the cost increase is the cost imposed by increasing selective collection for recycling. Econometric studies done with a large sample of municipalities of the region of Catalonia show that total costs and unit costs increase significantly with the rise in selective collection (Bel, 2006b; Bel & Costas, 2006). Particularly, Bel (2006b) finds an elasticity of 0.134 for the increase in the percentage of selective collection in the large municipalities of Catalonia. Increasing the percentage of selective collection from 11.97% in 2000 to 44.37% in 2005 implies a 270.7% increase in the percentage of selective collection. Following Bel's (2006b) estimates of elasticities, the rate of increase in selective collection in the city of Barcelona would have caused an increase in costs of around 36.3%. According to these estimates, increasing selective collection would explain nearly 90% of real (CPI adjusted) cost increase.<sup>8</sup>

Our findings of cost increases are consistent with the fact that the reform in Barcelona was not driven by cost considerations. The city was ready to pay more for a service with improved quality that was environmentally friendly. High-quality standards, sustainability, flexibility, and responsiveness are crucial requirements in a complex global city with an important tourist sector.

Interestingly enough, limiting the maximum number of contracts a firm could obtain in Barcelona to two concessions (out of four) has made it possible for the other large firms (besides the leading incumbent [FCC]) to win important contracts. This has had a very positive external effect: the levels of concentration in the market for private waste collection and street cleaning have decreased in the metropolitan area of Barcelona. The entry or strengthening of large alternative operators such as ACS-Urbaser and Ferrovial-CESPA has had positive effects for competition all

over the large- and medium-sized cities around Barcelona, as the city of Barcelona contains only one-third of the total population of the metropolitan region.

Urban regeneration and entrepreneurial city strategies can generate political controversy. However, in Barcelona, support for the street cleaning and waste collection reforms has been remarkably stable despite shifts in party control of the environmental management area in the city government. The local government has approached management of solid waste collection and street cleaning in Barcelona in a very pragmatic way. When the reform was implemented in 2000, the local government was supported by a coalition of Social democrats (PSC, majority party), Eco-socialist (IC, former Euro-Communist party), and Left Con-federalists (ERC). Specifically, the responsibility for the service was in the hands of the Social democrat party. In the 2003 local election, Social democrats lost ground, but they preserved a majority position within the local government coalition, while IC and ERC increased their representation. As a result, the responsibility for environmental municipal services shifted to the Eco-socialists (IC).

The Eco-socialists have maintained control over environmental municipal services since 2003. Even though they are the former communist party, they have agreed to maintain the private contracting system. Private production of the service has not been questioned, and the current government plans to conduct a new concessions bidding at the end of the current contracts in 2009. This consensus in city policy is rooted in the fact that the same three parties have shared control of city government since the first local election in 1979, after the end of the dictatorship in 1975. The main issues being discussed concerning the next bidding process are: (1) further increasing competition, (2) further stimulating environmental improvements, and (3) improving the flexibility and responsiveness of the service in order to cope with the increasingly complex dynamics of delivery that modern global cities like Barcelona require (Ajuntament de Barcelona, 2008). In addition, the composition of the districts has been changed for the bidding process currently under way in order to achieve a more balanced distribution.

This pragmatic approach to city service delivery suggests a process less driven by politics and more by a concern over service quality and urban regeneration goals. Studies of local government privatization in the United States, Canada, and Spain have found a similar pragmatic approach (Bel & Fageda, 2007; Hebdon & Jalette, 2008; Hefetz & Warner, 2007; Warner & Hebdon, 2001; Warner & Hefetz, 2004; Warner & Hefetz, 2008 ). Pragmatic concerns about quality and costs override politics.

## CONCLUSION

This article explores one aspect of the “clean and safe” urban regeneration process. The Barcelona case study gives special attention to the role of the city in negotiating collaborative market-based reforms to improve urban service delivery. Unlike the fragmented neighborhood-based BID “clean and safe” strategies in U.S. cities, we have shown how Barcelona has used its scale and its public coordination role to promote competition in street cleaning and solid waste and thereby achieve major advances in environmental management. The primary motivation was not cost savings, but improved service delivery to complement a city and tourism development strategy. This model could be extended to many large cities in Spain. For instance, in the metropolitan region of Barcelona there are four cities (L’Hospitalet de Llobregat, Badalona, Sabadell, and Terrassa) of population between 200,000 and 250,000 where the service could be split in several sections of at least 50,000 inhabitants.

In contrast to the fragmentation in the United States that results in neighborhood monopolies on production, this case demonstrates the power of competition—to break monopoly and encourage innovation—and the importance of coordinated city-wide leadership in that process. To harness private markets for public goods requires a careful government management and coordination role. As compared to the United States where privatization is more unstable and the public-private

partnership BID model promotes fragmentation, European privatization experience has been more stable and BIDs are more likely to be linked to government funding and policy control. Lack of coordination is one problem with private market-based solutions to urban service delivery. The Barcelona case provides an alternative that demonstrates the advantages of a comprehensive city-wide approach.

While almost all communities in Spain use a regulated monopoly approach, Barcelona has the scale and governmental capacity to manage a more dynamic competitive market approach. The challenge will be if this can endure over time and if the cost increases evidenced to date abate or continue to grow. Our case demonstrates improvements in technology, increases in recycling, and improved quality overall. However, costs have risen. This is consistent with other analyses of privatization in the waste sector that find cost savings are unlikely especially in less competitive policy contexts (Bel & Warner, 2008b). Erosion of competition and consolidation are growing problems in the solid waste sector especially in Europe where privatization rates are higher (Davies, 2007; Dijkgraaf & Gradus, 2007, 2008b).

One challenge is how to balance these privatization and competition strategies with the need for public engagement and deliberation about service delivery strategies. In the United States, reversals in local government privatization have been linked to city manager recognition of the need for public participation in the service delivery process (Hefetz & Warner, 2004, 2007; Warner, 2008; Warner & Hefetz, 2008). In Spain, reversals are rare in part because there is more public control after privatization through the use of mixed public-private firms (which have a public mission) or the maintenance of public coordination over the privatization process (Warner & Bel, 2008).

A further challenge is development for whom. City spaces are negotiated and the rise of the entrepreneurial city with its emphasis on cleanliness and safety represents the ascendancy of developmental objectives over redistributive ones. BIDs in the United States make this strategy explicit. The more public-controlled process in Barcelona may be a more subtle means of achieving similar goals. Although Barcelona has been heralded as a city that gives explicit attention to these divides in its urban renewal strategy (Pestaña, 2004), the challenge of capture by elites is ever present. The competition strategy employed by Barcelona allows for some diversity across the metro region, but may not capture the full dynamics and diversity of its population—across class and ethnic lines—especially over time. Public discussions in the press (i.e., *La Vanguardia*) within Barcelona voice complaints about competition for public space between residents and tourists. Future research should explore whether Barcelona's model of balancing public and private in its urban service delivery strategy can also promote a balance between the diverse concerns of residents and tourists. If Barcelona can balance the concerns of residents and tourists and public and private interests, then it provides a model for other cities that seek to create a space for both economic development and authentic cultural and social life.

## ENDNOTES

- 1 A driving factor in privatization is the effort to achieve economies of scale (Bel & Fageda, 2007; Bel & Miralles, 2003).
- 2 In solid waste, economies of scale prevent smaller cities from splitting their markets, but on average about 10% of U.S. cities report mixing public and private production in solid waste (Warner & Bel, 2008).
- 3 These ratios have been calculated from information available on the web site of the Department of Environmental Issues (Government of Catalonia). Data provided by the regional government do not exactly match the data provided by the city of Barcelona, because the municipality of Barcelona measures selective collection, whereas the regional government measures actual recycling. Despite the conceptual difference, the trends for selective

- collection and recycling are similar. For comparison purposes, we use the data from the regional government as this guarantees the accuracy of comparisons with other territorial jurisdictions.
- 4 The local government decided to extend the contracts, initially scheduled to finish in 2007, for two additional years to 2009. The primary reason is satisfaction with performance under the new system. The municipality wants more time to prepare a new bidding process that further increases competition and properly meets the diversity of solid waste generation and the different needs for street cleaning among the districts.
  - 5 Private production of solid waste collection covers 56.3% of the population in Spain, and 91.1% in Catalonia. All data on private production and market shares are for 2003, and are taken from Bel (2006a).
  - 6 The survey asks citizens to express their level of satisfaction with service delivery, on a scale 0 (very bad) to 10 (very good). The survey sample is usually 4,000 people, and each one of the 10 districts in the city receives 400 interviews. The 2006 survey (<http://w3.bcn.es/fixters/ajuntament/barometreoctubre2006.481.306.pdf>, accessed October 20, 2008) showed an improvement in citizens' opinions of the street cleaning service (5.7/10), reversing the downward trend shown in 2004 and 2005 (5.4/10 each year), when citizens' perceptions had worsened with respect to previous years. Street cleaning (+0.3 points), together with solid waste collection (+0.4) and parks (+0.3), were the services with the highest increase in citizens' satisfaction in 2006. Overall, citizen satisfaction increased in half of the 22 services measured.
  - 7 All data were directly obtained or calculated from the Annual Reports of the Municipality of Barcelona, and from the Government of Catalonia.
  - 8 Another factor that helps explain the growth in costs is that municipal investment in infrastructure related to these services increased from 15.0 million euro in 2000 to 58.05 million Euros in 2005. Bel (2006b) and Bel and Costas (2006) show that scale economies are exhausted for municipalities with population over 20,000 inhabitants. Therefore, we can disregard the increase in costs due to loss of scale economies from splitting the delivery market.

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