Evaluating 3 decades of the European Capital of Culture programme

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- Hosting the event is seen as an opportunity for urban regeneration and a catalyst for social, cultural and economic development.

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Question

- What are the economic impacts of hosting the event?

This paper

Methodology:

- Difference-in-differences approach: compare cities that held the event and runner-up cities.
- Similar to Rose and Spiegel (2011) or Mehrotra (2011) that study the effects of hosting the Olympic games.

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Contribution:

- Methodological, most of the literature uses "soft" data or poor comparison groups.
- Provide an encompassing evaluation of the program and assess its long-term effects.

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Main finding:

- Hosting the event raises GDP per capita by 4.5 percent.
- The boost starts 2 years before the event and lasts more than 5 years after the event.

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- The country would nominate one or several cities, which would then be evaluated.

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2006

- A more refined selection process was established:
- A monitoring panel kepts track of the progress;
- Prize upon successful evaluation of the monitoring panel;
- Obligation of the Commission to perform an ex-post evaluation.

Evaluation of the event

- Focus on evaluating individual events: [two major reports: 1985-1995 by Myerscough (1994) and 1995 to 2005 by Palmer (2004)]
- Research based on "soft" data: focus groups, face-to-face interviews, or questionnaires, as well as press review analysis.

  Richards et al. (2002) on Porto and Rotterdam 2001; Hughes et. al. (2003) on Krakow 2000; Boyko (2008) on Bruges 2002; Garcï¿½a (2006, 2010) on Glasgow 1990 and Liverpool 2008.

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A limited branch focuses on "hard data"

- Focus strictly on short run effects with no well-founded evidence of long-term effects
- Focus on particular cities with no systematic evaluation of the program.
- Socio-cultural, political or environmental effects are less predominant.
- [Herrero et al. (2006), of Salamanca 2002 economic impact: estimated the private spending generated by cultural tourism.]

Methodology

- *Phase I*: Announcement (from the year of announcement to 3 years before the event).
- *Phase II*: Pre-event (1-2 years before event).
- *Phase III*: Event (year of event).
- *Phase IV*: Short-run (1-2 years after event).
- *Phase V:* Medium-run (3-5 years after event).
- *Phase VI*: Long-run (more than 5 years after event)

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Dummy for all cities (hosting or not) in phase k ($D^k_{i,t} = 1$).

Dummy for a hosting city in phase k ($D^k_{i,t} \times Host_{i,t} = 1$).

Specification 1

$$Ind_{i,t} = \alpha_i + \eta_t + \sum_{k=I}^{VI} \lambda^k D^k_{i,t} + \sum_{k=I}^{VI} \gamma^k (D^k_{i,t} \times Host_{i,t}) + \beta Ind^c_{i,t} + \mu_{i,t}$$

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Specification 2

$$Ind_{i,t} - Ind_{i,t}^c = \alpha_i + \eta_t + \sum_{k=I}^{VI} \lambda^k D_{i,t}^k + \sum_{k=I}^{VI} \gamma^k (D_{i,t}^k \times Host_{i,t}) + \mu_{i,t}$$

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Assumptions:

- Parallel trends
- Unobserved heterogeneity of the model is fixed and constant over time.

Data - European Capitals of Culture

- **Winners**: public information.
- **Losers**: harder to find.
  - Some information is available on European Commission webpage.
  - Brussels European Commission archive.
  - Contacting the organizing committees of several cities.

Data - European Capitals of Culture

Table A1

Summary of winner and other candidate cities

Year of event	Year of announcement	Winner	Other candidate cities
1985	1984	Athens	
1986	1985	Florence	
1987	1985	Amsterdam	
1988	1985	Berlin	Bonn, Munich
1989	1986	Paris	
1990	1986	Glasgow	Bath, Bristol, Cardiff, Cambridge, Leeds, Liverpool, Swansee, Edinburgh
1991	1989	Dublin	Cork
1992	1988	Madrid	
1993	1988	Antwerp	Liège
1994	1989	Lisbon	
1995	1989	Luxembourg	
1996	1989	Copenhagen	
1997	1992	Thessaloniki	Estambul, Budapest
1998	1993	Stockholm	Prague
1999	1993	Weimar	Nüremberg
2000	1995	Avignon	
2000	1995	Bergen	
2000	1995	Bologna	
2000	1995	Brussels	
2000	1995	Helsinki	
2000	1995	Krakow	
2000	1995	Reykjavik	
2000	1995	Prague	
2000	1995	Santiago de Compostela	
2001	1998	Porto	
2001	1998	Rotterdam	

2002	1998	Bruges	Mons
2002	1998	Salamanca	Granada, Barcelona, Valencia
2003	1998	Graz	
2004	1998	Genoa	
2004	1998	Lille	
2005	2001	Cork	Galway, Limerick, Waterford
2006	2002	Patras	
2007	2004	Luxembourg	
2007	2004	Sibiu	
2008	2004	Liverpool	Birmingham, Bristol, Cardiff, Newcastle, Oxford, Belfast, Bradford, Brighton, Canterbury, Inverness and the Highlands, Norwich
2008	2004	Stavanger	
2009	2005	Linz	
2009	2005	Vilnius	
2010	2006	Essen	Bremen, Görlitz-Zgorzelec
2010	2006	Istanbul	Kiev
2010	2006	Pecs	Budapest, Debrecen, Miskolc, Pécs, Győr, Kaposvár, Kecskemét, Sopron, Székesfehérvár, Veszprém
2011	2007	Turku	Jyväslylä, Lahti, Mänttä, Oulu,Rovaniemi, Tampere
2011	2007	Tallin	Haapsalu, Pärnu, Rakvere, Tallin, Tartu
2012	2008	Maribor	Celje, Koper, Ljubljana
2012	2008	Guimarães	
2013	2008	Marseille	Amiens, Lyon, Saint-Etienne, Strasbourg, Bordeaux, Nice, Toulouse, Marseille
2013	2008	Košice	Bratislava, Nitra, Trencin, Banska Bystrica, Martin, Trnava, Dolny Kubin, Presov
2014	2009	Riga	Cesis, Liepaja, Jurmala
2014	2009	Umea	Gavle,Lund,Uppsala
2015	2010	Mons	
2015	2010	Plzeň	Hradec Králové, Ostrava
2016	2011	San Sebastián	Alcalá de Henares, Burgos, Cáceres, Córdoba, Cuenca, Donostia-San Sebastián, Málaga, Murcia, Oviedo, Las Palmas de Gran Canaria, Pamplona, Santander, Segovia, Tarragona y Zaragoza
2016	2011	Wrocław	Białystok, Bydgoszcz, Gdańsk, Katowice, Lublin, Łódź, Poznań, Szczecin, Toruń, Warszawa, Wrocław
2017	2012	Aarhus	Sønderborg
2017	2012	Paphos	Nicosia, Limassol
2018	2012	Leeuwarden	Eindhoven, Maastricht
2018	2013	Valletta	

Data - Indicators

- Regional data: NUTS3 (match city to the respective NUTS3).
- Source: *Oxford Economics European Cities and Regions database*.
- Yearly data on: winning regions, loosing regions, country.

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- Regional data: NUTS3 (match city to the respective NUTS3).
- Source: *Oxford Economics European Cities and Regions database*.
- Yearly data on: winning regions, loosing regions, country.
- We exclude from the sample:
  - Cities for which no data is available
    (W: Istanbul and Reykjavik, L: Kiev and Las Palmas de Gran Canaria).
  - Luxembourg, Paphos and Valletta because the country size renders the regional analysis ineffective.
  - In the cases where a region includes both the winner and a runner-up city in the same year, we consider it as the winner.

Data - Indicators

Indicators:

- GDP and GDP per capita.
- Employment and value-added of three relevant sub-sectors:
  - i) construction;
  - ii) accommodation and food services;
  - iii) arts, entertainment and recreation.
- Consumer spending in
  - i) Recreational and cultural goods and services;
  - ii) Restaurants and hotels and its sub-components.
- Population, workforce an unemployment rate

Results

Table 1
Impact of hosting the European Capital of Culture on GDP and GDP per capita

	GDP per capita		GDP	
Specification	(1)	(2)	(1)	(2)
Host × Phase I	0.009	0.010	0.009	0.009
	(0.66)	(0.72)	(0.53)	(0.54)
Host × Phase II	0.040	0.039	0.033	0.033
	(2.56)**	(2.54)**	(1.87)*	(1.87)*
Host × Phase III	0.047	0.046	0.039	0.039
	(2.59)**	(2.55)**	(2.04)**	(2.04)**
Host × Phase IV	0.045	0.044	0.034	0.034
	(2.44)**	(2.39)**	(1.70)*	(1.70)*
Host × Phase V	0.037	0.037	0.023	0.023
	(1.98)*	(1.99)**	(0.99)	(1.03)
Host × Phase VI	0.046	0.049	0.029	0.029
	(1.89)*	(2.03)**	(0.95)	(0.97)
Parallel trend test[$]	0.336	0.334	0.584	0.582
Within R-squared	0.93	0.05	0.92	0.02
Between R-squared	0.81	0.05	0.29	0.08
Observations	2608	2608	2891	2891
Cities	145	145	145	145
Hosting cities	52	52	52	52

Results: robustness

Table A4

Impact of hosting the European Capital of Culture, after 2000.

	GDP per capita		GDP	
Specification	(1)	(2)	(1)	(2)
Host × Phase I	0.009	0.009	0.003	0.003
	(0.60)	(0.63)	(0.15)	(0.15)
Host × Phase II	0.038	0.037	0.029	0.029
	(2.31)**	(2.27)**	(1.63)	(1.63)
Host × Phase III	0.042	0.040	0.033	0.033
	(2.16)**	(2.09)**	(1.68)*	(1.68)*
Host × Phase IV	0.046	0.044	0.032	0.032
	(2.19)**	(2.10)**	(1.47)	(1.47)
Host × Phase V	0.046	0.044	0.031	0.031
	(2.01)**	(1.92)*	(1.16)	(1.15)
Host × Phase VI	0.076	0.078	0.089	0.089
	(3.01)**	(3.07)**	(2.47)**	(0.97)**
Within R-squared	0.93	0.04	0.92	0.04
Between R-squared	0.84	0.10	0.38	0.03
Observations	2071	2071	2295	2295
Cities	118	118	118	118
Hosting cities	37	37	37	37

Note: ** and * denotes significance at 5% and 10%. T-statistics are in parenthesis. GDP and GDP per capita are in logs. The standard errors are clustered by city. All regressions include year dummies. In specification (1) the national GDP or GDP per capita is included as an additional regression. In specification (2), its values are subtracted from the regional GDP or GDP per capita prior to the regression.

Results: different components

Table 2

Impact of hosting the European Capital of Culture on value added and employment per sector

	Construction		*Accomodation & Food services*		*Arts, entertainment & recreation*	
	V.A.	Emp.	V.A.	Emp.	V.A.	Emp.
Host × Phase I	-0.055	-0.024	0.005	-0.014	0.009	-0.105
	(-1.62)	(-1.02)	(0.16)	(-0.49)	(0.27)	(-0.65)
Host × Phase II	-0.059	-0.016	0.027	0.012	-0.022	-0.114
	(-1.55)	(-0.52)	(0.93)	(0.4)	(-0.56)	(-0.63)
Host × Phase III	-0.054	-0.011	0.044	0.032	-0.024	-0.126
	(-1.38)	(-0.35)	(1.33)	(1.12)	(-0.57)	(-0.63)
Host × Phase IV	-0.056	-0.009	0.024	0.044	-0.045	-0.069
	(-1.24)	(-0.23)	(0.68)	(1.33)	(-1.05)	(-0.33)
Host × Phase V	-0.016	-0.023	-0.014	-0.005	-0.080	-0.082
	(-0.31)	(-0.49)	(-0.38)	(-0.12)	(-1.77)*	(-0.42)
Host × Phase VI	-0.005	-0.034	0.020	0.023	-0.026	-0.057
	(-0.06)	(-0.54)	(0.48)	(0.5)	(-0.47)	(-0.25)
Within R-squared	0.68	0.69	0.72	0.68	0.77	0.21
Between R-squared	0.31	0.06	0.47	0.20	0.28	0.14
Observations	2891	2901	2891	2900	2891	2900
Cities	145	145	145	145	145	145
Hosting cities	52	52	52	52	52	52

Note: ** and * denotes significance at 5% and 1%. T-statistics are in parenthesis. Variables are in logs. The standard errors are clustered by city. The regressions are based on specification (1) and include year dummies as controls

Results: different components

Table A3
Impact of hosting the European Capital of Culture on other variables

	Expenditure		*Others*		
	Restaurants and hotels	Recreational and cultural goods and services	Population	Workforce	Unemployment rate
Host × Phase I	-0.009	-0.015	-0.012	-0.007	-1.233
	(-0.74)	(-1.43)	(-1.41)	(-0.49)	(-2.17)**
Host × Phase II	0.002	-0.005	-0.011	0.004	-0.732
	(0.12)	(-0.38)	(-1.23)	(0.32)	(-1.43)
Host × Phase III	0.016	0.007	-0.011	0.010	-0.657
	(1.06)	(0.44)	(-0.93)	(0.64)	(-1.09)
Host × Phase IV	0.007	-0.001	-0.015	-0.013	-0.279
	(0.4)	(-0.03)	(-1.12)	(-0.75)	(-0.42)
Host × Phase V	0.011	0.004	-0.027	-0.045	-0.929
	(0.57)	(0.24)	(-1.53)	(-1.75)*	(-1.16)
Host × Phase VI	0.027	0.022	-0.023	-0.046	-2.163
	(1.29)	(1.2)	(-0.8)	(-1.41)	(-1.93)*
Within R-squared	0.94	0.98	0.61	0.65	0.788
Between R-squared	0.45	0.29	0.06	0.05	0.443
Observations	2118	2118	2899	2319	2317
Cities	141	141	145	145	145
Hosting cities	50	50	52	52	52

Note: ** and * denotes significance at 5% and 1%. T-statistics are in parenthesis. Variables are in logs except for unemployment

Conclusions

- Quantify the effects of hosting the European Capital of Culture using a difference-in-differences approach.
- Hosting the events increases GDP per capita by more than 4 percent (before, during and after the event).
- Evidence of long-lasting effects.
- No effect on different sectors.
  - Aggregate economic activity.
  - Measurement error.