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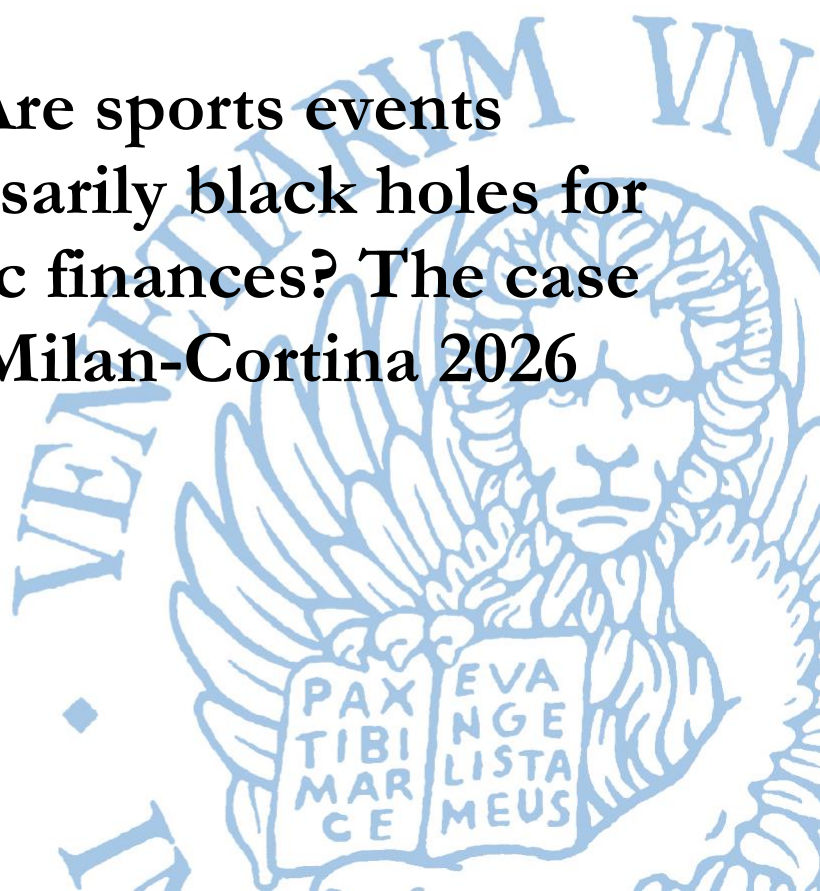
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Are sports events  
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public finances? The case  
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## Are sports events necessarily black holes for public finances? The case of Milan-Cortina 2026

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**Abstract:** The objective of this paper is to explore whether huge public investments in international sports events necessarily turn out to be burdens for regional economies or not. This will be illustrated by estimating the economic and, in particular, the fiscal impact of the forthcoming Milan-Cortina 2026 Olympics on the economies and the public finances of the Veneto Region and on those of the Autonomous Provinces of Trento and Bolzano. To this end, we use an Input-Output (IO) analysis that we suitably modelled in order to measure also the specific impacts of the Olympic event on the national, regional and local tax systems. The paper will argue that in the case of international sports events, when prepared and managed carefully and also when their legacy is rooted in the regional economic systems from the start, the net effects of these events on the economy and on the public finances might be positive. It also tries to provide regional administrations, specifically referring again to the regional governments of the Veneto and Trentino-Alto Adige in particular, with a number of essential elements for a correct assessment of the socio-economic impact of this event and some suggestions on how the above-mentioned policies before, during and after the event, can help regional administrations to safeguard the collective interest through the hosting of international sports events.

**Keywords:** Big Event, Milan-Cortina 2026 Olympics, IO analysis, economic impact, regional development, public finance

**JEL Codes:** L83, O18, R58

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## 1. INTRODUCTION<sup>1</sup>

The objective of this paper is to raise the question whether, by estimating the economic and fiscal impact of the Milan-Cortina 2026 Olympics on the Veneto economic system and on the autonomous provinces of Trento and Bolzano, international sport events are damaging the public finances of the territories that host the event. It thereto aims at providing the regional administrations involved, in particular the Trentino-Alto Adige and the Veneto, with a number of essential elements for an assessment of the socio-economic impact of this event and some suggestions that derive from this assessment for the policies that the above-mentioned institutions will want to take before, during and after the event to safeguard the collective interest.

The motive for organising these mega-events is almost always the fact that these events create an enormous momentum, both economically and socially as well as in terms of tourism, and leave a considerable physical and immaterial legacy (see, for example, Getz, 2013; Sant and Mason, 2015; Van den Berg, Braun and Otgaar, 2017) that would not be easy to create under normal conditions. The physical legacy of the event concerns various types of infrastructure that will serve the territory that hosts the event for years to come (for example, additional housing, a modernized transport network; new cultural facilities; updated sports facilities; and so forth). The immaterial legacy might for instance be a boost for the regional brand, an increase in the visibility that the territory receives during the event, and, as some authors suggest (see, for example, Misener and Mason, 2006; Bell and Gallimore, 2015), an important impulse for the quality of the human and social capital that the territory possesses. Examples of Olympic Games that seem to belong to this specific category are those held in Barcelona and in Sydney.

However, especially in recent years, there has been a rapidly increasing number of regional economists who are far from enthusiastic about the net impact these mega-events have on the regional economies that invest in them. They not only argue that the benefits are often deliberately overestimated (see for example Massiani, 2018), but also that, even if events may indeed be relevant (obviously when these events are planned and managed adequately), the balance between collective costs and collective benefits is frequently negative (as argued by O'Brien and Gardiner, 2006). They therefore sustain that the taxpayers' money spent to enhance regional development can be used much better than on mega events (Zimbalist, 2015). In short, hosting international sports events is likely to damage local and regional finances significantly. The Olympic Games hosted by Athens and by Rio are supposed to have contributed to the awkward financial situation of not only the cities that hosted them, but to Greece and Brazil as well.

The research that is presented in this paper does not in any way intend to give a complete answer to the very complex discussion of whether mega-events are effective instruments in pursuing regional development, since it does not look into all the possible benefits an event is supposed to generate. It focuses on the economic and fiscal effects, and does not deal with all the costs that are generated by mega-events, more precisely the environmental and social costs.

In short, this papers pursues the objective of quantifying the impact in the national and regional economy induced by the interventions necessary for the organization and management of the Milan-

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Cortina 2026 Olympics, paying particular attention to the growth generated in the regional production system and the related effects on the added value, employment and income.

The ultimate goal is to lay the foundations for an assessment of the economic feasibility of the decision, by any local government, to engage in the realization and management of an Olympic event, a condition that is not always easy to guarantee in the light of some past editions of the Olympics (the Athens Olympics in 2004 are probably the best example of this). In particular, we will advance the idea that the tax revenues created by the different types of expenditure related to the event can play a key role in ensuring the budget balance in local public finances, *ceteris paribus* and without increasing taxes, but rather through a renewed cooperation strategy between local and national government bodies.

The results reported below also return a quantification of the effects in terms of tourist flow, distinguishing between own visitors and the specific "Olympic family", as well as tax at national, regional and local levels. But before presenting the results of the economic analysis, the paper will place the 2026 Olympic Games in the proper context.

## **2. THE MILANO-CORTINA 2026 OLYMPIC GAMES**

After a number of different local and regional authorities in Italy launched their candidature for hosting the Winter Olympics of 2026, two proposals were considered complementary enough to go for a merger: that of the City of Milan and the Region of Lombardy, and that of the Veneto region with Cortina D'Ampezzo (or just Cortina) as its barycentre. The combined Italian proposal was awarded by the IOC and in June 2019 became the winning bid for the Winter Games of 2026.

Nevertheless, the reasoning behind both the original candidatures was very different. The City of Milan and the Region of Lombardy very much intended to capitalize on Expo 2015 that was organised in Milan and had generated quite a lot of positive energy for the wider Milan area. Milan 2015 focussed very much on urban revitalization (an important motive for organising mega-events, as suggested by, for example, Smith, 2012) and on the branding of Italy as the world's leader in the food industry and the enogastronomic sector. This sector included also tourism, the second most important motive, just after its culture richness, for international tourists to holiday in Italy. The Veneto Region has seen the competitiveness of the mountain destinations, even though the Dolomites became a UNESCO world heritage site, diminish rapidly in recent decades, principally because of an increasing obsolescence of its infrastructure with respect to its direct competitors, in particular the ski resorts in Tirol, the Swiss Alps, Trentino-Alto Adige and even Slovenia. Since the regional economy of the mountains of the Veneto Region in particular is still very dependent on winter tourism because of its high added value, the economic, social and tourist energy that is generated through this event is not only thought to consolidate the existing activities present in the territory but may also help to accelerate the conversion process to enhance tourism in the summer season, less sensitive to climate change, and requalify winter tourism.

Indeed, given the multitude of objectives and of the local and regional administrations involved, the Milan-Cortina 2026 Olympics program covers a very large geographical area that includes three regions: Veneto, Trentino-Alto Adige and Lombardy. Five clusters were identified for the development and organization of the Games including the area of Cortina, Val di Fiemme, Verona, Milan and Valtellina. The first three clusters are essential for the forecast of the later economic and fiscal impact. According to the blueprint of the event that was prepared for the local organising committee, the disciplines that will take place in Cortina are women's alpine skiing, curling, bobsleighbing, sledding and skeleton. The disciplines envisaged in Val di Fiemme are cross-country

skiing, ski jumping, Nordic combined and speed skating, while biathlon will take place in Anterselva. Finally, the closing ceremony of the Games is scheduled in the Arena in Verona.

Obviously, the territorial distribution of the events very much determines the way investments in the necessary infrastructure, the operational expenses that are required to organise the winter Games, the tourism expenditure, and the fiscal impact are distributed over the regions.

A detailed description of the specific investments that have been foreseen is contained in the Milan-Cortina 2026 Candidature Dossier, together with an exhaustive explanation of their distribution among the regions of Northern Italy (see Figure 1).

**Figure 1. Locations of the 2026 Olympics investment and activities in northern Italy**



The dossier also contains a description of the organizational and management activities that are expected to be carried out before and during the event, with a detail of the expected costs and revenues (Table 1).

**Table 1: Revenue and costs of the activities planned for Milano-Cortina 2026**

<i>Revenues</i>		<i>Costs</i>	
<i>Description</i>	<i>Thousands of Euros</i>	<i>Description</i>	<i>Thousands of Euros</i>
IOC Contribution	348,948	Venue Infrastructure	242,915
Top Programme	142,402	Sport, Games Service & Operations	238,922
Domestic Sponsorship	416,590	Technology	189,621
Licensing & Merchandising	233,949	People Management	231,180
Government Contribution	55,000	Ceremonies & Culture	65,824
Lotteries	25,000	Communications, Promotion, Look and Marketing	59,872
Other Revenues	80,616	Corporate Administration and Legacy	109,590

		Other Expenses	100,889
		Contingency	123,882
Total	1,362,742	Total	1,362,705

According to this budget, the amount that will be paid directly by the IOC is estimated in 348,948,000 Euros but the co-financing share that the local governments will have to pay is still undetermined, except for the contribution requested for the specific Paralympic Games. Even a projection on local and national tax revenues is still not considered. This information, together with that on the further economic impacts of the planned activities, is indeed necessary for the purpose of a broader assessment of the economic sustainability of hosting the event from the specific angle of local governments.

### **3. METHODOLOGY ADOPTED TO FORECAST THE ECONOMIC AND FISCAL IMPACT**

As already mentioned, the effects of the event are twofold: on the one hand we have to consider all the expenditures for the set-up: structures, infrastructures, management of events and people attending the events; on the other hand the impact of an additional flow of touristic demand. The former can be analyzed as a typical exogenous shock on demand. The latter, i.e. the strong interrelation of tourism with other branches and sector of the economy, is well documented in the relevant literature (see, as an example, Banerjee et al. 2015).

Both the effects can be quantitatively computed at the macro level with different approaches: with descriptive analyses, such as detailed national accounts or satellite account models (for example, in the case of tourism, the Touristic Satellite Account, TSA); with a statistical analysis, via regressions, statistical causal analysis or complex econometric models; with general macroeconomic models, such as the Computable General Equilibrium Model (CGE) family; with industry and detail sector based models, such as the Input-Output (or I-O) model or the Social Account Matrix (SAM) models.

For the purposes of this study, we have decided to adopt the I-O model for a number of reasons. It is a model based on simple and verified macro-economic causality, from demand to supply; unlike other macro-econometric models or CGE, it does not rely on delicate assumptions about behavioral patterns. It is, on the contrary, based on technology and supply chain constraints; it is well documented and sufficiently stable over time. Moreover, the I-O model is not dependent on estimates of supply schedules or technological frontier estimations. It simply considers the linkages, the interdependence and the propagation through the entire economy, still maintaining a level of detail, at both the sector and geographical level.

Using a SAM matrix approach, on the other hand, would have required a massive investment in detailing sectoral and social group consumption patterns, a requirement far from our available resources and not crucial for our analysis, which focusses on the territorial impact of the Olympic event.

The I-O model, developed by economist Wassily Leontief, is still today among the most popular tools for analyzing economic impact and is also applied in the context of the evaluation of so-called big events, including those of a sports nature. The model contains a distinct Keynesian dimension to take care of the induced effects generated by the regional economic injection the event creates. Despite the algebraic simplicity of the model (see APPENDIX 1), this tool nevertheless requires an effort in

terms of the amount of data necessary for its implementation, assuming a detailed collection of costs and of revenues that regard all possible branches of an economy.

It is also true that the I-O model implementation requires a great effort in term of data collection and verification. We were fortunate to have received from Unioncamere Veneto sufficiently updated regional intersectoral tables of the Veneto Region. Furthermore, the I-O model was linked with a satellite approach concerning the fiscal impact.

First of all, the I-O model was used to assess the economic impact that the event of the Olympics may have on production, income and employment. Through the I-O model, which describes the relationships between the sectors of an economic system, we obtained the estimates of the impacts that can be divided into three different effects of the investment:

- *The direct effects*, or the effects on the economic system deriving from the purchases made for the realization of the investment, its management and management of the works carried out, as well as the expenses incurred during the event for tenders and by visitors;
- *The indirect effects*, or the effects on the economic system deriving from the presence of sectoral interdependencies and the relative multiplicative effect of the initial expenditure / investment;
- *The induced effects*, or the impacts related to the increase in demand for final consumption generated by the higher disposable income, as well as by investments and expected expenses (wages, business income and self-employment) with further multiplicative effects.

Faced with these objectives and operational needs, and following the works of, for example Li, Blake and Thomas (2013), for the effective use of the chosen analysis tools, the research was structured into three fundamental and interrelated phases:

- a) Recognition of the expenses generated for the entire implementation of the Olympic Games on the basis of the blueprint prepared for the local organising committee;
- b) Estimation of the direct, indirect and induced economic effects;
- c) Estimation of the tax impact of the event.

## **Figure 2. Economic and Fiscal Impacts Associated with the Event**

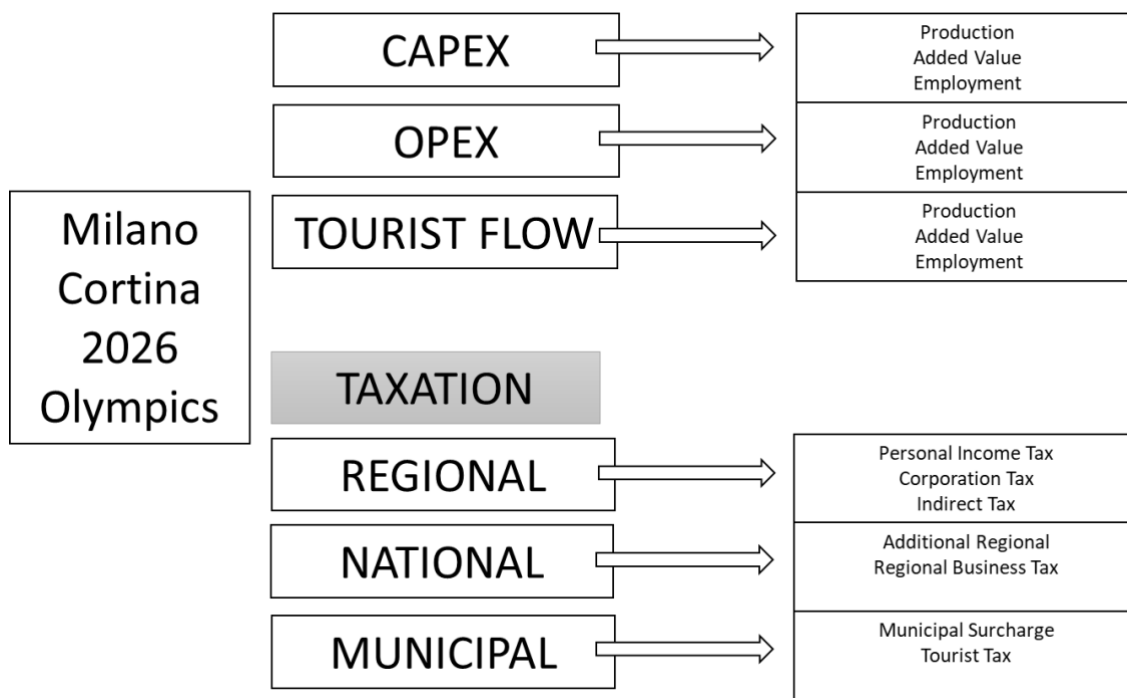


Figure 2 above contains a flow chart in which the different stages in the estimation process are illustrated.

#### 4. THE EXPENSES GENERATED BY THE WINTER OLYMPICS

The first part of the study focused on identifying all the expenses generated for the entire preparation and realization of the Olympic Games by dividing them into three categories:

1. Capital expenditure (CAPEX), which refers to the expenses for the construction of the facilities necessary for the performance of the Olympic Games and the upgrading of the existing facilities;
2. Operating or management costs (OPEX), relating to the organization and conduct of the Winter Olympics;
3. Expenses linked to the flow of visitors, which include the expenses generated by the visitors to the different events and, to a lesser extent, by the "Olympic family" (athletes, escorts and other professionals).

Capital expenditures and operating expenses were estimated on the basis of the evidence provided by the dossier for the candidacy of the Milano-Cortina 2026 Olympics (Table 2). As far as capital investments are concerned, given the list of estimated costs for each system connected to the Games reported in the same dossier, it was possible to obtain a distinction of the expenses incurred in Veneto and Trentino-Alto Adige. Lacking the same territorial detail for operational and management costs, after consulting with the consultancy company responsible for the dossier, it was decided to allocate these expenses 60% to Veneto and 40% to Lombardy. This division was confirmed by the team of Bocconi University Milan that prepared the impact assessment for Milan and the Lombardy Region.

In the estimation of the tourist flow, visitors attracted by the Olympic Games together with all the people who will be gravitating around this event, such as athletes, escorts, marketing partners, the press and international federations, have been considered.



**Table 2. The Costs and Tourist Expenditure of the Olympics for Veneto and the Autonomous Provinces of Trento and Bolzano**

<i>Expenditures</i>	<i>Costs (in thousands of Euros)</i>
Capital expenditure (CAPEX)	164,672
Operating and management expenses (OPEX)	657,056
Expenditure of the flow of people activated by the Olympic Games	301,908

With respect to the Olympic family, an estimate was obtained thanks to the data provided by the blueprint of the event prepared by the consultancy company that helped prepare the dossier. For the tourist flow, the reference data were the forecasts of the tickets that will be sold. Assuming that each visitor will attend on average two sporting events, it was possible to obtain an estimate of the visitors who will attend the competitions by dividing them according to the place of origin according to the assessments provided by the same dossier.

An estimate was also provided of tourists attracted to the Olympics but who will not attend any sporting event. The calculation was made assuming that each night on average is accompanied by 1.2 persons. In addition, the number of visitors who will attend the Paralympics was taken into account. Finally, through the flow generated by the Games it was possible to estimate the amount of expenditure activated by visitors and the Olympic family. This all is set out in Table 3.

**Table 3. Estimation of the Tourist Flow and of the "Olympic family" for Veneto and the Autonomous Provinces of Trento and Bolzano**

	<i>Number of persons attending the events/Tickets sold for the events</i>
Athletes	1,481
Escorts	1,250
Host	6,187
Marketing Partners	3,610
Media and Press	9,652
International Federations	759
Workforce	18,750
Estimated tickets sold Olympics	1,015,980
Number of unique spectators (tourists) of which:	507,990
40% hikers from Veneto and A-A Trento	203,196
15% overnights from the rest of Italy	76,199
45% overnight stays from abroad	228,595
Estimated tickets sold Paralympics of which:	160,000
40% hikers	64,000
60% overnight stays	96,000
Additional Tourists attracted to the Olympics	365,753

Table 4 shows the average expense of each stakeholder and the average number of nights spent. The average visitor expenditure is higher than the tourist data in Veneto and Trentino-Alto Adige, but it

is assumed that the profile of the tourist who will attend the races has a greater propensity to consume than the average. The average stay was instead assumed distinguishing between those who will participate in the management of the event as workers, whose permanence will depend on the specific work activities for which they will be employed, and those who will attend the event for leisure, such as tourists and hikers.

**Table 4. Estimated Average Spending and Average Stay by the Different Groups of Visitors**

	<i>Daily expenditure (in Euros)</i>	<i>Average stay (in days)</i>
Athletes	50	12.5
Escorts	50	12.5
Host and Olympic Family	150	2
Marketing Partners	150	2
Media and Press	250	12.5
Spectators hikers	75	0
International Federations	150	12.5
Overnight tourists from other regions of Italy, Austria and Switzerland	220	1.5
Overnight tourists outside Europe/World	220	2

Given the complex nature of the event and the profound diversity of the costs considered, the impacts were estimated separately in order to observe the effects produced by each expense in detail.

## 5. IMPACT OF CAPITAL EXPENDITURE FOR MILANO-CORTINA 2026

The total amount for the construction and redevelopment of the facilities necessary for the Games to be held amounts to 164,672,299 Euros.

This expenditure will involve a specific set of sectors according to the breakdown shown in Table 5. In accordance with the execution plan of the dossier for the candidacy of the Milan-Cortina 2026 Olympics, it will be mainly destined for refurbishing and modernizing existing structures and sports facilities and only marginally to the construction of new infrastructures, with, however, a massive involvement of the branch dedicated to manufacturing and processing of metals, supplies of technical equipment and logistics services.

**Table 5. Sectoral Breakdown of Capital Expenditure**

<i>Branches Code ESA95 NACE rev, 2</i>	<i>Expenditure (in thousands of Euros)</i>
Construction F	48,587
Manufacture of basic metals and manufacture of metal products CH	47,008
Transport and storage H	17,395
Manufacture of machinery and equipment n, c, a, CK	15,719
Manufacture of electrical appliances CJ	13,045

Financial and insurance assets K	8,544
Wholesale and retail trade G	8,210
Legal activities, Accounting, Management consultancy MA	6.164
Total	164,672

Capital expenditure through the multipliers of the I-O model generates a production of 208,598,015 Euros, an added value of 86.760.461 Euros and an indirect tax revenue equal to 14,111,935 Euros. The multiplier given by the production-to-expenditure ratio is 1.27 while the GDP multiplier is equal to 0.61.

Table 6 reports the specific contribution to the generation of the overall production of each sector, highlighting the importance of the construction sector, the use and processing of raw metal materials, but also of complementary trade and logistic services.

**Table 6. Production Generated by Capital Expenditure: List of the Sectors Most Affected**

<i>Branches Code ESA95 NACE Rev, 2</i>	<i>Expenditure (in thousands of Euros)</i>
Construction F	61,587
Manufacture of basic metals and processing of metal products CH	30,505
Wholesale and retail trade G	20,001
Transport and storage H	15,739
Legal activities, accounting, management consultancy MA	10,794
Financial and insurance assets K	10,428
Real estate activities L	9,869
Manufacture of machinery and equipment n, c, a, CK	9,015
Manufacture of electrical appliances CJ	7,298
Accommodation and catering services	5.029

## **6. IMPACT OF OPERATING AND MANAGEMENT EXPENSES DURING THE EVENT**

Expected operating and management costs for the Veneto and the autonomous provinces of Trento and Bolzano amount to 657,056,113 Euros. Moreover, and in accordance with the execution plan of the dossier for the candidacy, it has been possible to recreate a breakdown of the expenditure for each sector as shown in Table 6. The branches MC-N (NACE Rev 2) appears to be among the sectors that will benefit most from this particular type of expenditure, which will include any other professional, administrative, scientific and technical activities useful for the implementation of operational and management activities.

**Table 7. Sectoral Breakdown of Operational and Management Expenditure**

<i>Branches Code ESA95 NACE rev, 2</i>	<i>Expenditure (in thousands of Euros)</i>
Other service activities MC- N	148,829
Scientific research and development MB	96,091

IT services and other information services JC	83,539
Other service activities S - T – U	77,521
Financial and insurance assets K	71,891
Accommodation and catering services I	71,079
Transport and storage H	50,423
Telecommunications JB	26,530
Food and Beverage and Tobacco Industries CA	13,980
Artistic, entertainment and amusement activities R	10,827
Healthcare and social assistance Q	4,448
Wholesale and retail trade G	1,899
Total	657,056

The multipliers of the Input-Output intersectoral matrix estimate a production of 810,263,324 Euros, an added value of 426,494,565 euros and a revenue obtained from indirect taxes of 49,011,707 Euros. The production multiplier is equal to 1.23 while that of GDP is 0.72.

Table 8 shows the breakdown of production by sector, involving those sectors that are most affected.

**Table 8. Production Generated by Operating Expenses: List of the Sectors that are Most Affected**

<i>Branches Code ESA95 NACE rev, 2</i>	<i>Expenditure (in thousands of Euros)</i>
Other service activities MC_N	116,631
Accommodation and catering services I	87,052
Other service activities S-T-U	80,079
Scientific research and development MB	79,848
Financial and insurance assets K	69,436
IT services and other information services JC	59,876
Wholesale and retail trade G	58,412
Transport and storage H	50,725
Real estate assets L	50,378
Legal activities, accounting, management consultancy and studies MA	30,114

## 7. IMPACT OF THE EXPENSES GENERATED BY VISITORS AND TOURISTS

The total amount for expenses that is supposed to be made by visitors and the Olympic family amounts to 301,907,953 Euros. The breakdown of this expenditure by sector can be reconstructed using the Tourism Satellite Accounts that are produced by ISTAT and is shown in Table 9.

**Table 9. Sectoral Breakdown of Expenditure Generated by the Tourist Flow**

<i>Branches Code ESA95 NACE rev, 2</i>	<i>Expenditure (in thousands of Euros)</i>
Accommodation and catering services I	203,426
Transport and storage H	60,186
Wholesale and retail trade G	19,741
Other service activities MC – N	11,299
Artistic, entertainment and amusement activities R	7.256
Total	301,908

The impact of tourists is to be considered additional to what has already been estimated in accordance with Table 9, resulting in an increase in the potential demand induced by the Olympic event for leisure purposes. This increase in spending will also reverberate in terms of production as shown in Table 10 below.

The expenses of the tourist flow and of the individuals connected to the Games through the multipliers of the I-O model generate a production of 442,164,283 Euros, an added value of 225,181,671 euros and an indirect tax revenue of 37,525,671 Euros. The production multiplier is equal to 1.46, while the GDP multiplier is 0.87.

**Table 10. Production Generated by the Tourist Flow: List of the Sectors that are Affected Most**

<i>Branches Code ESA95 NACE rev, 2</i>	<i>Expenditure (in thousands of Euros)</i>
Accommodation and catering services I	195,839
Transport and storage H	47,590
Wholesale and retail trade G	47,084
Real estate activities L	33,065
Other service activities MC_N	16,856
Food and Beverage and Tobacco Industries CA	16,013
Financial and insurance assets K	10,595
Legal activities, accounting, management consultancy MA	10,123
Artistic, entertainment and amusement activities R	8,006
Electricity, gas, steam and air conditioning supply D	7,551

## 8. THE OVERALL IMPACT OF THE OLYMPIC GAMES

Overall, the expenses and investments activated by the Milan-Cortina 2026 Olympic Games event amounted to 1,123,636,365 Euros for the Veneto region and the autonomous provinces of Trento and Bolzano (Table 11).

**Table 11. Breakdown of Costs and Investments for the 2026 Winter Games**

<i>Expenditures</i>	<i>Costs (in thousands of Euros)</i>
Capital expenditure (CAPEX)	164,672
Operating and management expenses (OPEX)	657,056
Expenditure of the flow of people activated by the Olympic Games	301,908
<b>Total</b>	<b>1,123,636</b>

The value of production is equal to 1,461,025,622 Euros (with a multiplier of 1.30) and GDP 839,086,009 Euros (with a multiplier of 0.75). The employment generated by the event is 13,800 full time equivalents for the Veneto and Trentino-Alto Adige region.

**Table 12. Impacts of the Event per Category of Expenditure**

<i>Expenditures</i>	<i>Production (in thousands of Euros)</i>	<i>GDP (in thousands of Euros)</i>	<i>Indirect taxes (in thousands of Euros)</i>	<i>Added value (in thousands of Euros)</i>	<i>Employment (in FTEs)</i>
CAPEX	208,598	100,872	14,111	86,760	1,357
OPEX	810,263	475,506	49,012	426,495	8,399
Tourist flow	442,164	262,707	37,526	225,182	4,044
<b>Total</b>	<b>1,461,026</b>	<b>839,086</b>	<b>100,649</b>	<b>738,437</b>	<b>13,800</b>

Tables 13 and 14 show the production values and added value divided by direct, indirect and induced effect respectively.

**Table 13. Production Activated by the 2026 Winter Games by Type of Effect (in thousands of Euros)**

	Direct	Indirect	Induced	Total
CAPEX	152,219	22,919	33,460	208,598
OPEX	588,556	57,225	164,482	810,263
Tourist flow	323,859	31,462	86,843	442,164
<b>Total</b>	<b>1,064,634</b>	<b>111,607</b>	<b>284,785</b>	<b>1,461,026</b>

**Table 14. Added value activated by the 2026 Winter Games by Type of Effect (in thousands of Euros)**

	Direct	Indirect	Induced	Total
CAPEX	58,208	10,012	18,541	86,760
OPEX	308,412	26,938	91,144	426,494
Tourist flow	162,713	14,346	48,123	225,182
<b>Total</b>	<b>529,332</b>	<b>51,296</b>	<b>157,808</b>	<b>738,437</b>

With this information, we have gathered all the elements to answer the central question posed in the introduction, namely what the presumed tax income generated by the Winter Olympics 2026 will be.

## 9. IMPACT ON NATIONAL, REGIONAL AND LOCAL TAXES

In order to evaluate the impact of the Olympic event on the tax system, we proceeded to elaborate a further extension further extension of the I-O model aimed at:

1. systematically linking what has been calculated on the economic impacts of the Olympic Games to the tax system of the regions and cities hosting the event;
2. inserting a specific satellite account for local, regional and national taxes, overcoming certain limits of the current models for estimating tax impacts.

We consider the sum of the value added generated by the event as the sum of the  $n$  individual branches of economic activities activated ( $av$ ):

$$AV^M = \sum_{i=1}^n av_i \quad (1)$$

Using the national accounts data on value added and tax revenues, we can also calculate the effective average rate of each tax. Indeed, it can be set as:

$$\tau_j = \frac{Tax_j^{NA}}{AV^{NA}} \quad (2)$$

where  $\tau_j$  is the average tax rate of  $j$ -th tax,  $Tax_j^{NA}$  is the tax revenue of  $j$ -th tax and  $AV^{NA}$  is the value added.

Accordingly, the regional effective average rates can be understood as the ratio between tax revenues and value added attributable to the Veneto and Trentino Alto Adige regions, for example. A comprehensive calculation of the effective average rate  $\tau_j$  of each tax considered in our model is shown in Table 15 below.

**Table 15. Description of main taxes considered for the estimation of the fiscal impact and national accounts data to compute the effective average tax rates**

Tax	Description	Added Value (in thousands of Euros)	Tax revenue (in thousands of Euros)	effective average tax rates $\tau$ (%)
Personal Income tax (PIT)	PIT is an individual income tax called IRPEF, tax rates vary from 23% to 43% depending on the declared income of each taxpayer	1,517,651,000	180,004,000	11.86%
Indirect taxes	Direct taxes are non-transferable taxes paid by the taxpayer to the government and indirect taxes are transferable taxes where the liability to pay can be shifted to others. The most important indirect tax is Value Added Tax (VAT)			

Corporation tax	National tax on productive activities (IRES)	1,517,651,000	35,251,000	2.32%
Regional additional	A regional tax in addition to direct taxation (IRPEF)	141,648,500	838,998	0.59%
Regional Business Tax	Additional regional tax on productive activities (IRAP)	141,648,500	2,317,300	0.32%
Municipal surcharge	A municipal tax in addition to direct taxation (IRPEF)	141,648,500	455,897	1.64%

By resuming (1) and (2) it is now possible to obtain the total revenue activated by the Olympic Games as:

$$TR = \sum_{j=1}^{n1} AV^M \tau_i + VAT^M + TT \quad (3)$$

where  $TR$  is the amount of tax revenues,  $VAT^M$  is the value added tax estimated by the I-O model and  $TT$  is the tourist tax.

The estimate of the tax impact of the event is therefore solved as the product between the average rate and the value added outcoming from the I/O model, except for the indirect taxes (including VAT and already estimated in the I-O model) and the tourist tax.

Table 16 provides an overview of the revenues deriving from the main taxes generated by the Winter Olympics (in thousands of Euros). The average tourist tax per overnight stay in the Cortina and Verona cluster is 2 Euros, while for the Val di Fiemme and Anterselva cluster it has been estimated at 1.3 Euros according to their local administrative regulations.

**Table 16. Revenue from the main taxes generated by the Winter Olympics (in thousands of Euros)**

	<i>Average effective rate</i>	<i>CAPEX</i>	<i>OPEX</i>	<i>Tourist flow</i>	<i>Total</i>
<i>National Taxes</i>					205,385
PIT	11.86%	10,290	50,585	26,708	87,584
<i>Indirect Taxes</i>					100,649
Corporation Tax	2.32%	2,015	9,906	5,230	17,151
<i>Regional Taxes</i>					16,454
Regional additional	0.59%	514	2,526	1,334	4,374
Regional Business Tax	1.64%	1,419	6,977	3,684	12,080
<i>Municipal Taxes</i>					4,223
Municipal surcharge	0.32%	279	1,372	725	2,377
Tourist tax					1,846
<b>Total</b>					<b>226.062</b>

## 10. CONCLUSIONS, POLICY IMPLICATIONS AND SOME SUGGESTIONS FOR FURTHER RESEARCH

In the literature there is much discussion about the contribution of mega-events, such as the Olympic Games, on the economy of regions and on public budgets. Many authors deem that although especially the macroeconomic effects tend to be quite positive, in terms of GDP (Demir et. al 2015),



general welfare and exports (Rose and Spiegel, 2011), the answer to the question whether a mega-event is truly value for the taxpayers' money remains tends to remain unanswered.

In fact, today it is essential to link the concept of sustainability to a great sporting event. Planning an event is the most important phase because it is then that the main choices that will determine its success are made, as well as the negative and positive impacts. In fact, for the organizational committees of each sporting discipline, the role of sustainability plays a fundamental aspect in the assignment of the Games.

The true ex-post impact of the Olympics will be determined by the way in which different aspects are managed and, hence, on the design and construction of the infrastructures, on the quality of the management of the event, on the use of the financial resources generated, and on the ability of the economic system to activate new initiatives and new business models starting from the event.

The overall collective effects tend to be positive when: a) the design of the structures and infrastructures refers to a horizon that goes beyond the event and looks at medium-long term development perspective; b) the minimization of negative externalities (environment, traffic and congestion, real estate prices) and maximization of positive ones (reputation of the destination and local resources) are considered; c) the tax resources generated are used selectively and effectively in favor of the local economic systems; d) local development paths are fostered starting from the event, opening up new markets (leisure-time activities, unconventional tourism, new services and products, local innovation).

If, on the contrary, these components are dealt with in an episodic and erratic manner, the risk is that the net impact of the event could be turned into a negative sign: the costs could outweigh the benefits.

It should also be borne in mind that any positive effect is cumulative: it will derive from impacts that occur in the years following the Olympic event. Increase in GDP, exports and employment occur in the years to come.

What contribution are we bringing to the discussion? We touch only on a fraction of the debate. In fact, the adopted methodology analyzes the impacts deriving from the expenditure pattern linked to the realization of the event, essentially considering the backward linkages and neglecting the forward linkages. The Leontevian multiplier model is coupled with the Keynesian multiplier: spending generates a response of the supply and the multiplicative effect of the expense-production-income circuit is amplified by the inter-sectoral propagation of the additional demand.

With this approach, we do not consider the further positive effects on the potential creation of new business, nor do we look at the negative effects of any displacement of existing activities or of negative eventual impacts on the quality of life of the local population due to an excessive tourist load. These two issues deserve further research.

However, this work illustrates something important: the possibility that the resources used for the event will refer to an economic sustainable framework. The financial resources could be valued and co-financed by the subsequent positive impacts.

Of course, for the final judgment on the net impact, it will be necessary to consider the effectiveness of the project cycle management mentioned above. But our work shows that what is spent by the government, equal to the direct expenditure related to infrastructure and management (labelled CAPEX and OPEX above) for an amount of about 822 million Euros, will be translated into:

- an induced expenditure by the flow of people of 302 million Euros (36.7% of the money spent);
- a significant impact in terms of income: 840 million Euros in term of GDP (of the money spent 100.02 %) and 738 million Euros in term of Value Added (89.7% of the money spent);

- a significant impact in terms of tax revenues: 226 million Euros (12.2% of the money spent)
- a significant impact in terms of additional production: 1.461 million Euros (177.6% of the money spent)
- a significant additional employment, equal to 13,800 FTEs.

According to these figures, there seems to be sufficient evidence that the Olympic Winter Games 2026 are supposed to be sustainable from the perspective of the public finances. This is an important conclusion in times where budget constraints for policy makers are increasingly consequential.

It is also important to note that these results are contextualized in relation to the specific geographical and economic areas to which they refer. Ours is not an approach using a general model: the database is specific and local, distinguishing expenditure and effects related to the precise locations where the Olympic Games events will take place.

We therefore conclude that the pre-requisites for a positive contribution of the Olympic event to the economic perspectives of the hosting regions do exist: the final outcome will then depend on the managerial and political ability to maximize the benefits and mitigate the negative effects.

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## ANNEX

The intersectoral table used in the model is made up of 37 sectors. The table shows all the sectors and the related NACE code.

Branches	ESA Code NACE rev.2
Agriculture. Forestry	AA
Fishing	AB
Mining activity	B
Food, Beverage and Tobacco Industries	CA
Textile, clothing, leather and accessories industries	CB
Timber industry	CCA
Paper Press and registration	CCB
Manufacture of coke and refined petroleum products	CD
Manufacture of chemicals and substances	EC
Production of pharmaceutical, chemical-medicinal and botanical articles	CF
Manufacture of rubber and plastic articles	22.00
Other non-metallic mineral products	23.00
Base metal fabrication and metal product processing	CH
Manufacture of computers, electronic and optical devices	CI
Manufacture of electrical appliances	CJ
Manufacture of machinery and equipment n.e.c.	CK
Manufacture of vehicles	CL
Other manufacturing, repair and installation activities of machines	CM
Electricity, gas, steam and air conditioning supply	D
Water supply; sewerage systems	E
Construction	F
Wholesale and retail trade	G
Transport and storage	H
Accommodation and catering services	I
Publishing, audiovisual and radio and television activities	JA
Telecommunications	JB
IT services and other information services	JC
Financial and insurance activities	K
Real estate activities	L
Legal activities, accounting, management consultancy	MA
Scientific research and development	MB
Other service activities	MC-N
Public administration and defence; compulsory social insurance	O
Education	P
Health and social care	Q
Artistic, entertainment and fun activities	R
Other service activities	S-T-U