THE ECONOMIC IMPACT OF EURO 2016. METHODOLOGICAL ASPECTS

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ABSTRACT: *Assessing the economic impact of major sporting events has always been the subject of numerous expert disputes and it has also triggered heated debates of public opinion on the legitimacy or not for countries or cities to host such events. Euro 2016 gave us the opportunity to illustrate all these questions concerning the methodological problems posed by calculating its impact on the French economy, upon which rests the very issue of the scientific nature of the economy and the quality of the economic expertise. We therefore propose a summary of our study on the economic impact of Euro 2016 in four stages: we first revisit all the methodological issues posed by this calculation; secondly, we present the different stages of the calculation, from collecting the information necessary for the final result in order to show, in a transparent way, how we sought to overcome the previous methodological difficulties; thirdly, we discuss the main results obtained; and fourthly, we discuss possible extensions of the method.*

Keywords: *Macroeconomic impact – Mega-Sporting Events – Keynesian Model – Multiplier – Substitution Effect – Crowding-out Effect.*

JEL: L83; E22; R15.

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1.   Introduction

Assessing the economic impact of major sporting events has always been the subject of numerous expert disputes and it has also triggered heated debates of public opinion on the legitimacy or not for countries or cities to host such events[1]. Euro 2016 gave us the opportunity to illustrate all these questions concerning the methodological problems posed by calculating its impact on the French economy, upon which rests the very issue of the scientific nature of the economy and the quality of the economic expertise.

Economics is increasingly accused of lacking realism. Economists are increasingly doing advanced modelling exercises, which make them reason as if they were on another planet. They are constantly faced with a formidable dilemma: to be scientific at the cost of being unrealistic or to return to reality, but at the cost of abandoning scientificity.

Ever since the first "method dispute" in the late 19th century, mainstream economics has favoured scientificity. Faced with criticism that is made nowadays about living in imaginary worlds and telling tales about "what would happen if", some of the profession of academic economists suggest that it is absolutely essential to open the discipline to more applied economics – which, again, poses many questions.

Responding to concrete questions in economics does not mean that a theoretical framework can be done away with. In fact, if one wants to go beyond the stage of a simple description of reality or a monograph, it is necessary to create an explanatory model, which means making a certain number of assumptions. These assumptions will determine the scope of the theory, which will have to be constantly referred to in order to avoid making the model say something which it cannot. While most researchers are aware of the limits of their instruments, the same cannot be said for commentators in the politico-media sphere.

Calculating the economic impact of Euro 2016 can be seen in such a turbulent context regarding the scientificity of economic expertise. First of all, we have to correctly define the initial question about the very idea of economic impact, as it is the subject of much confusion and many approximations. Subsequently, it is necessary to choose an explanatory model that reflects the fact that economists use different paradigms i.e. radically differing visions of Man and Society.

We therefore propose a summary of our study on the economic impact of Euro 2016 in four stages: we first revisit all the methodological issues posed by this calculation; secondly, we present the different stages of the calculation, from collecting the information necessary for the final result in order to show, in a transparent way, how we sought to overcome the previous methodological

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[1] This question of the opportunity to host a mega sporting event appears in economic literature under the name of "winner's curse". See W.Andreff : *The Cost of Hosting International Sports Events, in* U.Wagner, R.Storm, K.Nielsen (eds.), *When sport meets business. Capabilities, Challenges, Critiques*, Sage, 219-235.

difficulties; thirdly, we discuss the main results obtained; and fourthly, we discuss possible extensions of the method.

2.   *Conditions for the validity of the impact calculation*

The French authorities commissioned a short-term economic impact of Euro 2016. The study, therefore, excludes any measurement of the social, environmental or long-term legacies of the event. In the same way, the impact assessment was only carried out at a national level, for no estimate was requested for any host city. This very strict definition is a good opportunity to stress the development of a rigorous methodology and thus avoid overestimating this type of impact, which is too often written by market researchers. There are two issues to be discussed: the definition of the economic impact and the choice of a theoretical model.

2.1   *Definition of the impact*

Many economic impact studies of major sporting events are characterised by an approximate definition of this concept. They talk readily of "economic spin-offs" and often lead to a significant overestimation of the real impact. A correct definition of what is meant by economic impact should therefore be given first.[2] Two elements have to be taken into account:
-       It is necessary to reason in relative terms, with reference to the economy in which the event would not have taken place.
-       It is necessary to reason in net profits and avoid confusion with the economic weight, such as is measured, for example, by turnover.

2.2   *A counterfactual exercise*

The impact of a sporting event measures the net amount of what the event has brought in to the host area, compared to the hypothetical situation where this event would not have taken place. Of course, such a counterfactual exercise is very risky. How can what would have happened in the absence of the event be quantified? Certain assumptions have to be made in order to create one or more scenarios; these include:
-       The responsibility attributed to the sporting event in implementing a certain number of actions. The cost of any infrastructure whose basic design was decided before the event was held, does not have to be included in calculating the impact. Such information is readily available for sports facilities directly allocated to the event. On the other hand, it may be much more difficult to

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[2] E. MAURENCE, Consultants pour le Ministère de l'Economie, de l'Industrie et du Numérique, DGE, *Evaluation. La mesure de l'impact économique d'un événement touristique.* Guide méthodologique. Réédition 2014. www.entrprises.gouv.fr.

-       decide in the case of non-sporting facilities (transport routes and urban renewal projects, etc.).[3]
-       Foreign tourists arriving in France, which are not necessarily linked to holding the event. Again, it will be necessary to put forward certain assumptions to assess, for example, how many foreigners would have come if the event had not taken place and how much they would have spent and then compare them with the real situation.

        These two examples show that there is always a risk of overestimating the impact of a sporting event by attributing to it economic returns for which it is not responsible. The general principle, therefore, is to exclude from the calculation all investment and consumption expenditure that has already been planned by the actors involved, even in the absence of the event. And that has to be established in a completely transparent manner.[4]

2.3   Net increase in value

Most errors committed in calculating the impact of sporting events come from using incorrect data. The impact must always be measured in terms of added value and not in terms of turnover. There are two significant examples:
-       Not taking into account any national capital outflows (imports, payments to external service providers from outside the reference territory, repatriation of profits or dividends by external owners, etc.). Forgetting such outflows is a very common mistake in many studies and is the cause of significant overestimation of the real impact.
-       Not excluding expenditure that does not benefit in whole or in part from external funding. In the case of national funding, if these funds had not been invested in the sporting event, they would anyway have been invested in other sectors of the economy. This is, therefore, merely a redistribution of national money which does not add anything to the economy. Counting it in the impact calculation is once again an over-assessment.

        To sum up, many errors are commonly made as a result of an incorrect definition of the concept of economic impact. Whether it is the assessment of the situation of the economy without the event or that of thinking in net proceeds, these errors systematically lead to a significant over-assessment of the actual impact of sporting events.

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[3] Using News Shocks Analysis is another way to measure such a macroeconomic impact. M. BRUCKNER, E. PAPPA, *News Shocks in the data. Olympic Games and their Macroeconomic Effects*, J. of Mon., Cr. and Bank., Vol 47, Issue 7, October 2015, 1339-1367. V. LANGER, W. MAENNIG, F. RICHTER, *The Olympic Games as a News Shock: Macroeconomic Implications*, in J. of Sp. Ec.. Forthcoming (Posted 17 may 2017).
[4] E. BARGET, J.J. GOUGUET, *De l'évaluation des grands événements sportifs. La coupe du monde de rugby 2007 en France*. Pulim. Limoges. 2010. E. BARGET, J.J. GOUGUET, *Evénements sportifs: impacts économique et social*. De Boeck. Bruxelles. 2010.

3.   *Choice of theoretical model*

There are three types of model that are generally used to underpin calculating the economic impact of major sporting events: the input/output model; the computable general equilibrium model; and the Keynesian model. These three models belong to different paradigms and so choosing one of them is not a neutral act. Beyond the doctrine inherent to each model, such a choice is also guided by the availability of information.

3.1   *Models that are operational only with difficulty*

3.1.1   *The input/output model*

The input/output model has been used for many years in the Anglo-Saxon world and is now attracting certain consultancy firms in France in order to assess the secondary impact of major sporting events. Nevertheless, this model has been the subject of much criticism in academic circles insofar as, by its very nature, it tends to significantly overestimate the economic impact of an external source of revenue in a given territory.[5]

- Input/output models impose no constraints in terms of the availability of production factors. It is always assumed that an increase in the vector of final demand can be satisfied by the local production system. If this is not the case, an increase in final demand can result in inflation and/or resorting to external service providers. In all cases, the multiplier will be lower.
- These models only consider the positive effects, but are unable to mobilise most of the negative impacts, hence the overassessment. This is partly due to the fact that input/output models do not take into account variables such as prices, wages or exports from other sectors. Yet price increases can lead to crowding-out effects and the attraction of external visitors can benefit one sector, but not benefit others. In both cases, this will result in lower multiplier effects.
- Most of the time, the technical coefficients that are used are fixed, which does not necessarily give a truthful view of the real state of the economy, which is dynamic.
- Breaking down the national economy into sectors of activity is often very crude. These sectors are therefore not adapted to project the effects of an increase in the demand for goods and services specific to Euro 2016.

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[5] A. ZIMBALIST, *Circus Maximus.* Brookings Institution Press. Wash DC. 2015. R. BAADE, V. MATHESON, *Going for the gold: the economics of the Olympics,* in J. of Ec. Persp., 2016, Vol. 30 n° 2. V. MATHESON, *Mega Events: the effects* of *the world's biggest sporting sporting events on local, regional and national economies*, Working Paper n° 06-10. College of the Holly Cross. Worcester, Massachussetts. 2006. A. BLAKE, *The economic Impact of the London 2012 Olympics.* Notthingham University Business School. 2005.

### 3.1.2   *The computable general equilibrium models*

Computable general equilibrium models are often accused of attaching more importance to theory than to data. They can often be attractive from an intellectual point of view in order to overcome the inadequacies of the input/output models, especially as they impose constraints on:

- The availability of production factors. In particular, they take into account the elasticity between factors and prices rather than assuming their total availability.

- Income and expenses of agents. These additional constraints significantly complicate the overall modelling, because it is necessary to consider price and wage changes and their consequences on real variables, such as the volume of production or the demand for labour in a given sector.

    Under these conditions, computable general equilibrium models are more satisfactory from a theoretical point of view, but the information needed to make them run properly is not always available. A dilemma then arises: is it necessary to use a model that is theoretically satisfying but which requires information that is very difficult to obtain and which requires concessions in relation to the perfect model? Would it not be better to settle for less sophisticated models which allow quality information to be used? It is this latter option that we have adopted. We prefer less theory, but more quality information which allowed us to arrive at reliable results.

3.2   *The Keynesian model*

We have used the open-economy Keynesian model to calculate the impact of Euro 2016 on the French economy. It can be simplified in the following way:[6]

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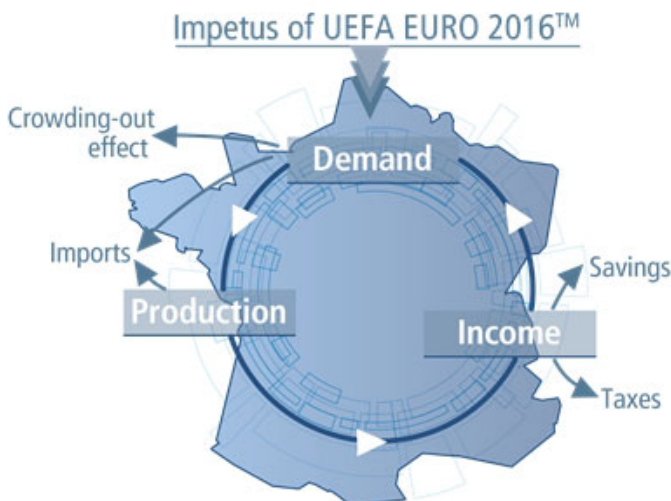
[6] According to H. Preuss, *Economics of the Olympic Games. Hosting the Games 1972-2000.* University of New South Wales, Wallaz Walla Press, 2000.

An external injection of revenues from Euro 2016 causes an increase in demand which leads to an increase in production and a distribution of revenue once again shutting out an increase in demand. Outflows of funds occur with savings, taxes, imports and even crowding-out effects. These three stages of computation present specific difficulties in using information, but assessing the primary impact (net injection) is certainly the key step. It measures the external shock of demand in relation to the situation of the French economy without the event. It is at this level of calculation that it is necessary to be as accurate as possible, because any error in assessing the primary impact is then amplified using the multiplier, which enables the secondary impact to be calculated (indirect effects and induced affects). The value of this multiplier must remain within the limits of academic studies that have already been carried out. In order to satisfy all these requirements, we were able to benefit from quality information resulting from collaboration with UEFA and Euro 2016 SAS, which made available to us all the data concerning the organisation; and from our field studies and online questionnaire about spectator spending (see below).

4. Methods of calculation

Implementing the impact assessment of Euro 2016 poses two types of difficulty. On the one hand, it is necessary to confront the counterfactual exercise mentioned previously and which consists of continuously asking what would have happened if the event had not taken place. On the other hand, we must reason in terms of the increase in net value, which requires information that is not always readily available.

4.1 Counterfactual exercise

4.1.1 Substitution effect

This concerns the consumption and investment expenditure related to the event which does not add any value to the territory, compared to the state of the economy in the absence of the sporting event. If this event had not taken place, the actors involved would have spent their income or would have invested in other sectors of activity. There is a simple spending substitution that does not create additional wealth in the economy. Four forms of expenditure are concerned and must be excluded from the calculation:
- Those of the actors involved belonging to the territory hosting the event. In the absence of the latter, they would have, in any case, incurred other expenses, e.g. rather than buy tickets to the stadium, they would have bought concert tickets.
- Those that benefit from internal funding of the territory, e.g. expenditure on renovating a stadium funded by the municipality of the host city should be

excluded. If the event had not taken place, the city would have spent these funds on other structures, the stadium renovation being no longer necessary.

- Those of occasional visitors who attend the event, but whose journey was already planned for other reasons. All the expenses related to the event cannot be considered, since in any case they would have come and consumed other types of goods than the sporting spectacle.

- Those of the visitors who changed the date of their journey in order to enjoy the event, but would have come anyway. Here again, a large part of their expenditure must be excluded.

In all these cases, there is a simple substitution of expenses and not a net increase. The incorrect estimation of such an effect is the reason for the overassessment of the real impact of the sporting event.

4.1.2   Crowding-out effect

As far as consumption is concerned, foreign visitors could have been dissuaded from coming to the host region, or local consumers encouraged to leave the area, because of the sporting event: fear of the area being saturated, of price increases or of various nuisances/difficulties. The question arises as to whether the spending of these possibly dissuaded spectators is of the same nature and of the same magnitude as that of actual spectators. Conversely, there may be avoided outflows, i.e. local spectators who would have gone to spend elsewhere, there where the event had been organised. The event therefore "retains" local spectators within its borders. The challenge is to know what the net result is between the crowding-out effect and the retention effect. In their studies, economists in Canada consider that these two effects offset each other.[7] This is not our position; on the contrary, we believe that the crowding-out effect is always more important during major sporting events and that the retention effect is too random in its counterfactual dimension to be seriously assessed, except to carry out very costly opinion polls.

Calculating the crowding-out effect is not easy.[8] It is very difficult to know directly with accuracy the number of tourists who decided to cancel their stay due to the holding of Euro 2016. We have, therefore, developed a method of assessment which consists of comparing foreign tourist visits during a hypothetical period in June 2016 without the Euro with the actual number of visits:

- In each host region, we calculated a theoretical year of reference by taking the average of overnight stays over the last three years (2013, 2014 and 2015).

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[7] Guide méthodologique pour la réalisation des études d'impact économique des grands festivals et événements, 2016: www.tourisme.gouv.qc.ca/publications/media/document/autres/guide-methodologique.pdf.

[8] H. PREUSS, *A method for calculating the crowding-out effect in sport mega-event impact studies : the 2010 FIFA World Cup*. Quarterly Journal, 28 (3), 367-385.

- We then estimated a trend by comparing the number of overnight stays actually counted in April, May, July and August with the same months in the theoretical year of reference.
- We applied this trend to the month of June to obtain the number of overnight stays without Euro 2016.

We obtained the following results:

Actual number of overnight stays in June 2016: 5 770 000
Actual number of overnight stays directly linked to the Euro: 2 135 000
Hypothetical number of overnight stays without the Euro: 5 170 000
Crowding-out effect: 5 170 000 - (5 770 000 - 2 135 000) = 1 535 000 overnight stays.

4.2 Net increase

4.2.1 Offstream outflows

Out-of-territory capital outflows are the flows of money out of the territory into the hands of external agents. The main national offstream outflows concern:

- Paying service providers: in order to organise a sporting event of the scale of the Euro, UEFA had to call on service providers in other European countries or from other continents.
- Payment of imports.
- The return on profits or dividends from foreign shareholders. If hotels fill up, it is nonetheless necessary to know what share of the takings is going to be re-spent on the spot. If we imagine a large, multinational hotel chain, then the profits could go abroad to the head office without any benefit for the national economy from the knock-on effects.

The treatment of outflows depends on the ability to mobilise information about them. Two options are possible: either incorporating them partly into the calculation of the primary impact; or incorporating them partly into the calculation of the multiplier.

4.2.2 Multiplier

Estimating the multiplier has always been the subject of controversy between academic experts.[9] In order to retain a reliable value, we entrusted INSEE (Institut National de la Statistique et des Etudes Economiques) with the task of assessing a multiplier based on simulations of an exogenous shock of expenditure using the

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[9] M. CATIN, V. NICOLINI, *Les effets multiplicateurs des dépenses militaires de la DCN Toulon sur l'économie varoise*, in Rev. d'Ec. Rég. et Urb., n° 4, 2005, 451-480. P. BOUVET, *Les retombées des événements sportifs sont-elles celles que l'on croit?* Revue de la régulation, 2013, mis en ligne le 25 juin 2013, consulté le 11 septembre 2017.

Mésange macroeconomic model (Modèle Econométrique de Simulation et d'Analyse Générale de l'Economie).

      The results obtained were consistent with those found in academic reference literature.[10] As a result of the analysis by INSEE,[11] the following comments and proposals can be made:

- The short-term multiplier peaked at a level slightly higher than the ceiling value often accepted in academic literature (1.5 as opposed to 1.3).
- In the longer term, the intertemporal multiplier converges to 1.25, which therefore corresponds to a levelling-off that is independent of the time horizon.
- We propose that this last value be our reference. In fact, given the uncertainty in measuring a certain number of factors that impact the value of the multiplier (the nature of the goods and services comprising the injection, the substitution effects, the crowding-out effects and the temporal displacements of expenses and outflows), it would seem preferable to keep this convergence value, which reflects a certain neutrality regarding all the assumptions that have to be made in order to take into account all these unknowns.

      By taking 0.5 as a margin of error, a confidence interval (1.20 – 1.30) around the central value of 1.25 for our multiplier can be obtained.

5. *Main results*

We will not here go in detail about the calculation methods nor into the detail of the breakdown of the economic impact and we will just give the main results of the study carried out on behalf of the Ministry of Sport.[12] It is worth pointing out three points: the economic value assessed in cash terms, i.e. the net added value generated by hosting Euro 2016; assessing activity (in the sense of human resources) generated by the competition; and lastly assessing additional tax revenues collected by the different public actors (the State and local authorities).

5.1 *Economic impact*

The total economic impact of Euro 2016 was obtained after having identified the net injection (or primary impact), in a highly accurate way, of income within the national economy and having applied the Keynesian multiplier determined in collaboration with INSEE (see above).

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[10] A. Zimbalist, 2015, op.cit. R. Baade, V. Matheson, 2016, op.cit.

[11] CH. M. Chevalier, *Note sur l'impact économique de l'Euro 2016 et le multiplicateur macroéconomique.* INSEE. Direction Générale. 30 septembre 2016.

[12] Anyone interested in the details of the calculations can consult the study free on www.cdes.fr.

5.1.1 Primary economic impact

The commission from the government concerned a short-term, national economic impact of the Euro 2016. Subsequently, our study:

- Does not include any calculation of the impact at the territorial level: no assessment was carried out across the ten host territories of the competition (Bordeaux, Lens, Lille, Lyon, Marseille, Nice, Paris, Saint-Denis, Saint-Etienne and Toulouse). It is regrettable that the commission was not extended to the host cities where the effects were most certainly concentrated (see below).
- Concentrates on a limited part of the life cycle of such an event, namely the operational phase of the organisation. Therefore, it excludes the preparation phase (during which the expenditure needed for the construction or renovation of sporting or non-sporting infrastructure is concentrated), as well as the legacy (long-term effects).

In the end, our work focused on determining the impact in relation to the organisation of the final phase of the competition, which took place between 10th June and 10th July 2016; and on the impact of the influx of foreign tourists coming specially to France to watch the Euro matches.

5.1.1.1 Organisational impact

According to experts in the sector, organising an event such as Euro 2016 is the world's third biggest sporting event and necessarily has significant repercussions for the national economy. In order to better assess them, we considered a relatively broad approach to the organisation. In calculating the impact, we have therefore included: expenditure concerning the operational organisation of the event (i.e. that necessary for the organisation of the fifty-one matches of the competition); the expenses incurred by the delegates of the teams that took part in the final phase; expenditure in respect of donations and the legacy programme negotiated by the host cities; the expenses of accredited people, i.e. those having taken part in organising the event or having stayed in France because of the event, not reimbursed by the organisers themselves; the activation expenses incurred in France by the international sponsors of the event (French sponsors were excluded under the substitution effect).

Thanks to the collaboration and full transparency of UEFA, we had access to high-quality information which meant that our analysis was very highly-accurate. After taking care to retain only the expenses funded by external revenues (funding from French actors involved, whether public or private, were excluded), we assessed the organisational impact at Euro476.8m.

5.1.1.2 Tourism impact

The Euro 2016 brought a very substantial number of "sports" tourists to France to either support their teams or take part in the event. In line with the methodology described above, we assessed the surplus of tourist spending generated by the competition in the most accurate way possible.

That, therefore, meant that we excluded from the calculation:

- All French supporters under the substitution effect. Our approach could have been different, insofar as we know that local supporters would have gone abroad if the Euro had not taken place in France. But we favoured a conservative approach faced with the difficulty of accurately assessing this retention affect.
- Occasional visitors, i.e. those who came to France for other reasons than the Euro 2016 (professional reasons, family visits or a stay planned without the event), but who took advantage of their presence to go to matches in the stadium or in one of the official fan zones set up in the host cities.

The assessment of the tourist impact was carried out through face-to-face field surveys (30 days of questioning around the stadia and within the fan zones) and an online questionnaire. Once again, the close collaboration with UEFA made it possible to conduct an extremely robust survey, as more than 133 000 people were questioned. The results presented here are based on 16 921 responses. After removing the crowding-out effect, according to the method previously presented and assessed at Euro165m, the tourist impact was assessed as Euro500.6m.

In the end and before applying the multiplier, the primary economic impact – i.e. the net injection of revenues into the national economy – amounted to Euro977.4m.
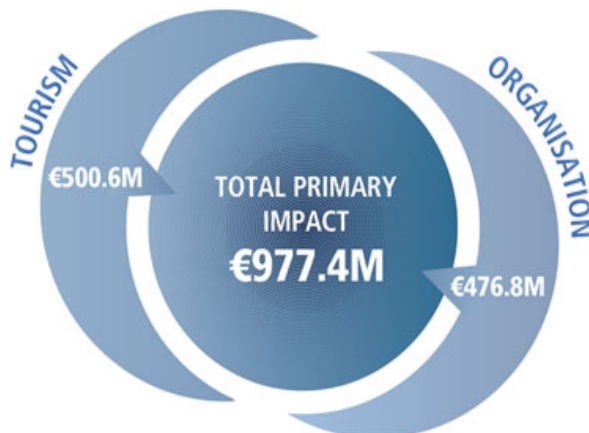
5.1.2   *Total economic impact*

The total economic impact of the Euro 2016 was obtained by applying the Keynesian multiplier to the primary impact. In total, we assessed it at Euro1 221.8m, with Euro596m coming from organising the event and Euro625.8m from the influx of foreign tourists. Based on this total impact, we therefore assessed the secondary impact at Euro244.4m. These are the indirect and induced effects produced by the initial injection of revenues into the national economy. The diagram below graphically illustrates the distribution of the economic impact produced by Euro 2016.

TOTAL
PRIMARY IMPACT
€977.4M
X
COEFFICIENT 1,25 MULTIPLIER

TOTAL IMPACT
€1.221bn

5.2   *Employment*

Beyond the estimate of the added value created by hosting Euro 2016, our study also made it possible to assess the volume of activity generated. Rather than trying to quantify the volume of employment in a precise manner, we instead assessed the activity generated in the equivalents of months worked. By including all of the activity for the preparation of the event during 2016, that required for the operational delivery of the event and that of the areas solicited as a result of the influx of foreign visitors (catering, accommodation, hotels, transport and shops, etc.) and by taking the crowding-out effect into account, we came to a total of

117 150 months worked during the competition. Taken over a full year, this represents 9 762 equivalent full-time jobs.

	Equivalent months worked during the event
Organisation	400
Media	700
Service providers / security	30 000
Hotels	22 100
Catering	27 300
Transport	17 400
Shops	3 000
Leisure / tourism	2 100
TOTAL	**103 000**
	Equivalent months worked before the event
Organisation	3 000
Service providers (excl. security)	11 150
TOTAL GENERAL	**117 150**

Of course, these data should be treated with caution. It is unlikely that Euro 2016, like any other sporting or non-sporting event, would result in so many net job creations. Event-driven jobs are inherently ephemeral and therefore most would certainly be fixed-term and/or part-time jobs.

5.3   *Additional tax revenues*

Finally, our study assessed the additional tax revenues generated by Euro 2016. Our approach on this point was rather restricted due to limited access to reliable data, as well as the difficulty in accurately assessing the link between hosting Euro 2016, the extra activity generated for companies or the extra wages received by workers. We also limited ourselves to assessing additional revenues in terms of value added tax (VAT), tourist taxes and airport taxes. Therefore, we did not attempt to assess either the corporation tax[13] or personal income tax surplus.

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[13] Euro 2016 SAS, the UEFA subsidiary responsible for organising the competition, enjoyed a tax exemption provided for by the 2015-910 decree of 23rd July 2015 establishing the list of international sports competitions organised in France benefitting from the tax system provided for in Article

As regards VAT, and in accordance with an approach by the Court of Auditors, we did not take VAT receipts relating to organisational spending into account. Clawback mechanisms in force in France allow taxable companies, under certain conditions, to deduct the VAT paid on their professional purchases. In the end, this payment/clawback mechanism results in a zero-sum game for the State. We, therefore, only took into account the VAT generated by the economic activity of foreign visitors. On the basis of an average VAT rate applied to every kind of expense and taking the crowding-out effect into account, we estimated net VAT receipts at Euro70m.

Regarding tourist taxes, we relied on the number of overnight stays by foreign visitors assessed through our survey of the public. By making assumptions of the average amount (each city freely determines its tourist taxes), differentiated according to the type of accommodation (hotel, private rental, cottage/bed and breakfast, campsite or youth hostel) and taking the crowding-out effect into account, we estimated additional revenue at Euro2.7m.

Lastly, regarding airport taxes, we relied on calculating the number of foreign visitors who arrived in France by plane through our survey of the public. Internal flights were excluded from the calculation. Taking an average assumption of Euro8 per person and subtracting the tax loss relating to the crowding-out effect, we estimated an additional net revenue of Euro2.2m.

In the end, the total of additional tax revenues amounted to Euro73.9m.

gross revenue €90m — crowding-out €20m — VAT €70m — gross revenue €2.6m — Airport taxes €2.2m — crowding-out €0.4m — TOTAL TAXES €73.9m — crowding-out €0.6m — Tourist taxes €2.7m — gross revenue €3.3m — TAX REVENUE

1655 septies of the General Tax Code. It was not the same for French service providers for UEFA which obtained contracts linked to organising the Euro and which might have registered a surplus of activity and therefore, in fine, a Business Tax surplus.

6.   Future prospects for research

6.1   Towards a standard method of calculating impact

It seems to us, at the end of this study, that the method presented to calculate the economic impact of Euro 2016 could be standardised. It would be enough to draw up precise specifications which would include all stages of the calculation with all the difficulties to be resolved (substitution effect, crowding-out effect and capital outflows). It would also be possible, in the specifications, to propose standard questionnaires needed for collecting essential information in order to correctly assess the organisational and visitor impacts. The service provider should also demonstrate the ability to respond specifically to these specifications, particularly with regard to the mobilisation of information.

Such a standardisation would have many advantages:

-       Studies that have serious shortcomings in calculating the impact, and which then detract from the image of the event, could be prevented from being disseminated. To date, too many major errors have been tolerated, which can lead to this type of expertise being rejected by public opinion. Such a rejection can negatively rebound on the sporting movement and event organisers. It is worth remembering, for example, the referenda organised to sound out the social acceptability of the Olympic Games and which have resulted in refusals, as public opinion is no longer content with fantasy figures.

-       Such standardised studies could be the subject of comparisons. It would be possible to compare results obtained using the same methodology. Sporting events could thus be classified in relation to one other. This classification could be useful to public authorities in assessing the profitability of such and such an event.

-       Finally, it would be possible to make valid comparisons of the results obtained from standardised studies, both before and after the event is held. It appears to us particularly desirable to delegitimise the complacent *ex-ante* studies which overestimate the real impact with unrealistic calculation assumptions and to avoid subsequently rejection by public opinion, which often considers itself deceived.

6.2   The need for a territorial approach

Euro 2016 was a multi-site event which took place in ten cities. It is certainly interesting to measure its impact at the national level, but it is equally important to calculate the impact on each host city.[14] It is perfectly feasible to implement the same protocol as at the national level. It would only be necessary to take account

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14 CDES : Impact économique ex-ante et utilité sociale de l'UEFA EURO 2016, étude pour l'UEFA, 2014.

of the specificities of the host territory in order to assess, on the one hand, the primary impact and to assess, on the other, the multiplier. Such a calculation is generally required by the local authorities which host the event. But this calculation could also be used to make comparisons with other host cities. It would be possible to identify the local factors for success and to draw lessons for hosting future events.

Moreover, a fundamental element lies in incorporating hosting the event into an overall project for the development of the area. We have always defended this idea at CDES: above all, the success in hosting an event depends on such integration. Failing that, its impact would necessarily be limited, whereas it could be designed as a real lever for development. We would therefore propose a protocol in three stages. In the first stage, measuring the impact of the event on the host territory is essential, by taking into account the difficulties encountered in its implementation. In the second stage, it is necessary to make a diagnosis of the host territory, with its strengths and its weaknesses. From this point on, it would be possible to assess the quality of the territorial project. In the third stage, it is a question of developing a synergy between the sporting project and the territorial project: how to best include the organisation of the event in the territorial project, so as to maximise the expected short-term impact as well as in the longer term, which raises the whole issue of legacy.

6.3   *The need for a life-cycle approach*

A sporting event cannot be reduced to just the time when it is being held. It is characterised by a real life-cycle, the length of which depends on the events and which consists of three phases: preparation (before); proceedings (during); legacy (after). For an event such as the Olympic Games, it is customary to use a cycle of around 20 years.

Beyond this length of time, the important thing to remember is that the expenses related to the event differ according to the phase of the cycle and that their impact is therefore very different. In the preparation phase, it is mainly infrastructure expenditure (both sporting and non-sporting) which could have a very strong impact on employment; in the proceedings phase, it is organisational expenditure and that of visitors that make up the bulk of the injection; in the legacy phase, there are long-term structure effects that can modify the way the territory develops.

It is therefore essential to provide public authorities with public decision-making tools at each of these stages. During the preparation, it is essential to plan the organisation of the event early enough to avoid, for example, putting in place what could eventually become "white elephants", and to optimize the impact of the event on the territory in the short or long term. The problem of legacy means that it is necessary to ask oneself early enough what trace the event can leave in the territory in the long term. To do this, indicators have to be developed and

included into the overall guidelines relating not only to the economic legacy, but also to the social and environmental legacy of the event.

7.   *Conclusion*

The economic impact of Euro 2016 amounts to Euro1.221bn. The significance of such an amount in relation to the French Gross Domestic Product (which stood at Euro2.181.1bn in 2015) could be discussed at length[1], for example, and so could the results of other major sporting events (the national economic impact of the 2007 Rugby World Cup in France was estimated to be about Euro540). What we hold on to is that the event contributed in a tangible way to an increase in economic activity, both by organisational expenditure and by spending by foreign visitors. In particular, the arrival of nearly 600 000 foreign tourists for the event helped to cushion the tourist decline observed at the national level. Beyond just the quantitative result, the interest of the present study also lies in the lessons that can be drawn from its development, as well as the future possibilities it opens up in the understanding of new impact studies. Based on our experience and bibliographic analysis on the subject, we have clearly identified the pitfalls to avoid in calculating the impact in order to obtain a credible measurement.

That implies, first of all, correctly defining the idea of impact regarding the situation of the economy without the event. The only honest answer is to put forward hypotheses in complete transparency in order to answer the question: what would have happened if the event had not taken place? That applies particularly to assessing the substitution effect, the crowding-out effect, the capital outflows and the multiplier. On this last point, the work of INSEE in calculating the multiplier from the Mésange model is also a guarantee of robustness. Therefore, we carefully presented all these hypotheses to arrive at an accurate calculation of the primary impact. Moreover, a sound impact study is only worth considering if the information is as complete as possible. That requires the full cooperation of the organiser. By providing accurate data on the organisational expenditure and by passing on the survey about all foreign buyers of tickets, UEFA and EURO 2016 SAS provided reliable information and collected nearly 17 000 usable questionnaires

In the end, in view of all the advantages of properly conducted economic impact studies, it is to be hoped that their standardisation and their openness, both territorial and temporal, will be fully incorporated into the public authorities' future specifications. It is also necessary to incorporate the analysis of the legacy of these major sporting events, as much their tangible legacy (long-term economic effects) as their intangible legacy (social, sporting and territorial effects, etc.). In such a way, this would significantly improve public decision-making about hosting major sporting events.

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[15] Source: Insee, National annual accounts - 2010.

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