

The socio-economic contribution of built heritage to domestic production in Hungary

The project "Revealing the Socio-Economic Impacts of Cultural Heritage" (REVEAL) financed by the Norway Grants is implemented between 2014 and 2016 by the Gyula Forster National Centre for Cultural Heritage Management in Hungary. The focus of the project is the multi-level assessment of the socio-economic impacts of cultural heritage, more precisely of built heritage. This study presents the impacts resulting from national level assessments and research conducted within the frame of this project.

Cultural heritage is regarded by the European Union as of strategic importance, contributing to gross domestic production and job creation¹. According to the Hungarian National Act on Cultural Heritage, cultural heritage consists of tangible heritage, including built heritage (eg. monuments) and other forms of physical heritage that played a role in the formation of the traditions and culture of a given community or nation (eg. works of art)². In everyday sense cultural heritage also refers to intangible heritage, such as the customs and traditions of a community, unique language, etc. The REVEAL project deals with tangible heritage, and within that, built heritage. In Hungary nationally listed and locally listed buildings and structures constitute the built or architectural heritage, which is also in the focus of the present study. It is nonetheless important to note that besides buildings under legal protection, non-listed old historic buildings may also have historic, aesthetic, social, scientific, economic or artistic values. From our research point of view, i.e. that cultural heritage generates socio-economic benefits, it is also worth considering built heritage in this broader sense. *Built heritage* or *heritage building* will be understood hereinafter as this wider circle of buildings representing heritage values, and listed buildings will be specifically considered where possible.

Built heritage – in addition to producing visitor numbers according to its functions (e.g. museums) or generating other forms of income in the tourism sector – has so-called spill-over effects in different economic sectors³. These spill-over effects however, cannot be directly deduced from domestic

¹ EU Cultural and Creative Industries in Europe. The Economy of Culture in Europe. Commissioned by DG Culture, October 2006. KEA with the support of University of Turku and Deutsche Wirtschafts Institute. Communication from the Commission, A renewed EU Tourism Policy: Towards a stronger partnership for European Tourism. (Com (2006) 134 final, Brussels 17.03.2006. Report of the Tourism Sustainability Group (TSG), European Commission in 2004.

²Act LXIV of 2001 on the Protection of Cultural Heritage.

³European Commission (2014): Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions towards an Integrated

economy accounts; therefore they should be determined from data of related sectors. In this study, an attempt is made to show the contribution of built heritage to domestic economy in Hungary, quantifying the added value of built heritage to national production and to employment. According to international literature there are four main areas in which built heritage can generate direct or indirect turnover and income:

- tourism
- construction industry
- cultural and creative industries
- real estate

The above sectors are all related to built heritage either directly or indirectly. The turnover and thus part of the job creation capacity of these industries are attributable to built heritage. For example, one part of the tourism sector, such as visits to castles and historic city centres are directly linked to built heritage. Similarly, the maintenance and renovation of monuments generate income and jobs in the construction sector. Part of the production of the cultural and creative industry is related to built heritage, just like real estate transactions.

Our methodology largely builds on Terje Nypan's "A Proposal for a Design to Develop European Statistics on the Socio-Economic Contributions of the Physical Cultural Heritage"⁴ and is based on data derived from central statistics without additional questionnaires or other type of surveys. Calculations in the study have been made for the year 2012, as most data for all the above-mentioned sectors are available for this year. The applied methodology helps to quantify the role of built heritage in the domestic economy by calculating the turnover and job creation capacity of these sectors through a specific ratio that is applied to show the proportion attributable to built heritage in the production of each sector. This ratio can be calculated differently in each specific sector. The following part presents the relationship between the given sectors and built heritage.

Concerning jobs, in each sector the full time equivalent was used for calculating the number of employees where it was applicable.

Approach to Cultural Heritage for Europe. http://ec.europa.eu/culture/library/publications/2014-heritage-communication_en.pdf

⁴ Nypan (2015): *A proposal for a design to develop European statistics on the socioeconomic contributions of the physical cultural heritage.*

Tourism

Tourism is one of the sectors on which built heritage has direct impact. Who would deny that a large number of trips are due to travellers' desire to visit historic sites? The payment of an entry ticket or any other expenditures related to the visit of a heritage building generate a turnover directly related to built heritage, which thus becomes the cause of spending. In the course of such travels money is also spent on other services, such as transport, accommodation, catering etc. that can be attributable to the historic buildings, the main cause of the travel.

In order to make calculations based on the methodology presented in the introductory part data are needed on tourism turnover, the number of employed in the tourism sector, and the ratio specifying the proportion of tourism turnover generated by built heritage. The Hungarian Central Statistical Office (KSH) has a long record on tourism turnover that was used for our calculations. Tourism turnover is determined on the basis of the so-called tourism satellite accounts, calculated and published by KSH retrospectively. Satellite accounts show the contribution of a given sector to the domestic economy and also provide the number of employees in the sector. Tourism-related activities according to the satellite accounts are accommodation and catering services, railway, motorway, waterway and air traffic services, car rental, travel agencies, tour operators and other reservation activities, cultural services, sport and recreation activities, and other tourism related sectors, such as spa tourism and transport support services⁵.

The ratio that shows the proportion of tourism turnover attributable to built heritage can be calculated in various ways. Travels with the designated aim of visiting historic buildings would belong here, counting not only entry tickets but the travel's entire spending, including catering services in the proximity of the heritage sites. It is a challenging task to filter out expenditures directly attributable to built heritage and thus determine the value added of built heritage to the tourism industry, since statistical surveys do not include historic buildings (or a category similar) as an option to choose. Tracing the motivations behind travel, however, can help in deducing the proportion of travels attributable to or linked to built heritage. Table 1 gives a summary of data and their sources necessary for the calculation. It can be seen from the table that the latest satellite accounts are from 2012, thus travel motivations should be regarded for this year as well.

Data	Source	Latest publication
Number of domestic tourists, a breakdown by motivation (person)	KSH survey	2014
Number of international tourists, a breakdown by motivation (person)	KSH survey	2014
The role of tourism in the economy	Tourism satellite account	2012
Number of employees (full time equivalent) in the tourism sector	Tourism satellite account	2012

Table 1. Data used to determine the value added of built heritage to the tourism sector

According to a research of the Hungarian National Tourist Office (MT Zrt.) conducted among domestic tourists "the most frequent activities of culturally inclined travels were visits to

⁵ KSH (2015): Tourism satellite accounts, 2012.

monuments, castles, manor houses, churches and other church monuments, that is primarily to built heritage” (MT Zrt. 2008:3)⁶. Another questionnaire survey conducted among foreign tourists to Budapest shows that the main motivation of travel are sightseeing and culture; 86% of respondents named sightseeing and 56% culture. The main attraction of Budapest, according to 86% of the respondents is the presence of cultural and world heritage, while for 40% of them it is built heritage⁷. Research and survey examples from the REVEAL project also show the percentage of travels attributable to built heritage in a given country or town. These results are summed up in Table 2.

Destination	Proportion of built heritage-related travels	Source
EU	27%	European Comission (2014)
Norway	30%	Terje Nypan (2015) ⁸ , (2009) ⁹
Budapest	40%	Erika Nyúl and Ágnes Ördög (2008) ¹⁰
Balatonfüred	31%	Forster Centre, own survey

Table 2. Proportion of built heritage-related travels

We are thus seeking culturally motivated travels and sightseeing trips indirectly linked to built heritage. The closest grouping can be found in the KSH survey on overnight travels. Table 3 shows the different categories, according to the main motivations of travel.

Entertainment, recreation, holiday, sport
Visiting relatives, friends
Health promotion, health tourism
Hobby-like work
School study trip, school holiday camp
Nature tourism
Sightseeing, tour trip
Cultural and sport events
Business trip, exhibition service provision, fair
Conference, congress
Non-touristic motivation

Table 3. Motivation of travels according to the survey of KSH

⁶Hungarian National Tourist Office (2008): Knowledge, attitudes and travelling habits of the Hungarian population in connection with cultural tourism. Based on the survey of M.Á.S.T. Market and Public Opinion Research Society Tourism bulletin, volume XII, number 3

⁷Erika Nyúl and Ágnes Ördög(2008): Budapest - from the angle of cultural tourism - study of the Budapest Cultural Working Group. Tourism bulletin, volume XII, number 2

⁸Terje Nypan. (2015): A Design for Developing Global European Statistics on the Socio-Economic Contributions of the Cultural Heritage to Europe. “Cultural Heritage Counts for Europe: Towards a European Index for Cultural Heritage”. International conference on the economic, social, environmental and cultural impact of immovable heritage. Leuven, Belgium. February 3-6.

⁹Terje Nypan. (2009): ‘Cultural Heritage Monuments and Historic buildings as value generators in a postindustrial economy. With emphasis on exploring the role of the sector as economic driver’ (updated paper). <http://www.riksantikvaren.no/?module=Files;action=File.getFile;ID=5818>

¹⁰Erika Nyúl and Ágnes Ördög (2008): Budapest - from the angle of cultural tourism - study of the Budapest Cultural Working Group. Tourism bulletin, volume XII, number 2

The calculation may be distorted by the exclusion of one-day travels,¹¹ however, most of these are not driven by touristic motivation but are rather due to transit or shopping and as such can be disregarded. Among the listed motivation factors, *sightseeing* was primarily regarded as built heritage-related, just as *cultural and sport events*. It is highly probable that built heritage motivated travels can be found in the category *entertainment, recreation, holiday, sport* as well, but entirely including this category would distort the results. Cultural events belonging to the category *cultural and sport events* are often related to built heritage, as heritage sites try to attract visitors by offering cultural programs. Travels motivated by visiting sport events are not explicitly related to built heritage, but they cannot be filtered out of this category. The motivation behind school study trips, school holiday camps and class excursions is also often the visit to a built heritage site, such as a castle or museum, but also often related to natural heritage. Therefore this category was also excluded from built heritage-related travels. The remaining categories were not considered as related to built heritage.

Domestic and foreign travels, i.e. travels of Hungarians within the country and travels of foreign visitors to Hungary are differentiated in the KSH surveys. Table 4 and 5 shows the number of domestic and foreign travels by motivation breakdown, where built heritage-related travels are highlighted in grey.

Motivations of overnight domestic travels	# of persons (thousand)	distribution
Entertainment, recreation, holiday, sport	5987	34.97%
Visiting relatives, friends	8409	49.12%
Health promotion	537	3.14%
Hobby-like work	684	4.00%
School study trip, school holiday camp	121	0.70%
Nature tourism	154	0.90%
Sightseeing, tour trip	252	1.47%
Cultural and sport events	209	1.22%
Business trip, exhibition service provision, fair	132	0.77%
Conference, congress	68	0.40%
Non-touristic motivation	542	3.17%
Total	17,119	100.00%

Table 4. Domestic travels by motivation, 2012. Source: KSH (2015); MT Zrt.(2012)

Motivations of overnight foreign travels	# of persons (thousand)	distribution
Entertainment, recreation, holiday, sport	1673	16.16%
Visiting relatives, friends	2581	24.93%
Health promotion, health tourism	1053	10.17%
Cultural and sport events	305	2.95%
Business trip, exhibition service provision, fair	943	9.11%
Conference, congress	108	1.05%

¹¹Distribution of domestic travels broken down by motivation is available for overnight travels, while there is no available information on the motivations of one-day trips.

Sightseeing, tour trip	1838	17.76%
Other tourism	108	1.05%
Shopping	36	0.35%
Transit	1035	10.00%
Other non-touristic motivation	682	6.59%
Total	10,353	100.00%

Table 5. Foreign travels by motivation, 2012. Source: KSH (2015); MT Zrt. (2012)

It can be seen that 2.7% of domestic travels and more than 20% of foreign travels are related to built heritage in the given categories. According to our calculations in total among the 27,472 visitors 2,604 were motivated by heritage which is 10.5% of the total number of visitors. However, there is a significant difference between the spending of domestic visitors and the international ones in addition to the difference in the proportion of heritage related visits. Therefore we have to weigh the expenditures according to the ratio of heritage related travels. Based on the proportion of heritage related domestic and international visitors we can calculate the proportion of the expenditure of heritage related visits separately for domestic and international visits. According to the tourism satellite accounts in 2012 domestic travellers spent 580 billion HUF, and foreigners visiting Hungary spent 841 billion HUF. Since 2.7% of the expenditures of domestic visits and 20.7% of international expenditure can be attributed to heritage, in sum 189.7 billion HUF of the total spendings in tourism can be attributed to heritage (table 6). This means that 13.35% of the total touristic consumption can be related to heritage.

This estimate is rather low, compared to the numbers of other existing international and national surveys. A probable reason for this is that we have not considered travels in the category *entertainment, recreation, holiday* as built heritage-related travels, although visits to historic buildings are probably a driving force behind these travel types as well. Nevertheless, we did not consider this category, since there are no surveys or estimates at our disposal to prove this.

Indicator	2012	Contribution of built heritage to consumption	Proportion of built heritage-related visitors
Foreign spending on tourism in Hungary (billions HUF)	841	174.1	20.70%
Domestic spending on tourism in Hungary (billion HUF)	580	15.59	2.69%
Total spending (consumption) in tourism (billion HUF)	1,421	189.69	

Table 6. Contribution of built heritage to touristic consumption. Source: KSH (2012), own calculations

Assuming that the consumption defines the production of a given sector we can calculate the contribution of heritage to tourism based on the proportion of heritage related consumption (13.35%). Carrying forth the 13.35% ratio, based on the Hungarian tourism satellite accounts Table 7 shows that the value added of built heritage to the domestic economy in Hungary within the tourism sector is 186.36 billion HUF (approx. 600 million EUR) and 45,120 full-time jobs are attributable to built heritage in 2012.

Indicator	2012	Contribution of built heritage	Proportion of built heritage-related travels
Total added value ¹²of tourism industries (billion HUF)	1,396	186.36	13.35%
Employment in tourism industries (# of persons, thousand)	338	45.12	13.35%

Table 7. Contribution of heritage to tourism in Hungary Source: KSH (2015): own calculation

Construction Industry

Construction industry is one of the most productive sectors of the economy. It is connected to built heritage through renovation works. Furthermore, buildings need continuous maintenance, also contributing to the production of the construction industry. Consequently, it is worthwhile to regard renovation and maintenance works as output, production and employment potential rather than expenditure, for the domestic economy. According to the European Commission 27.5% of total EU construction output is attributable to renovation works. This means 333 billion EUR out of the total output of 1,211 billion EUR¹³. The contribution of built heritage to the construction industry and thus to the economy in Hungary can be estimated similarly to the tourism industry.

To find the share of built heritage to construction industry we have to find the ratio of heritage related works in construction industry. There are several options to calculate this ratio, table 8 shows some of the required data.

Data	Source	Latest publication
Total building stock	KSH, National Building Energy Strategy	2013
Historic monument building stock	Forster Centre	2015
Stock of locally listed buildings	Lechner Knowledge Centre	2008
Buildings erected before 1946	KSH, National Building Energy Strategy	2013
Gross value added of construction industry related to historic buildings	KSH	2012
Gross value added of construction industry	KSH	2012
Number of persons employed in the construction industry	KSH	2014

¹² The added value is the difference between the total expenditure (3,167 billion HUF) and the value of products and services used (1,771 billion HUF). (KSH, 2012)

¹³ European Construction Industry Federation (FIEC) (2014): Key Figures 2015 – activity 2015.
<http://www.fiec.eu/en/library-619/key-figures.aspx>

Table 8. Types of data used for estimating the contribution of built heritage to the construction industry

The most precise way is to calculate the proportion of heritage related production in construction industry. The available data on construction industry differentiates the production according to building-types. The KSH, based on its sectorial survey differentiates residential and non-residential buildings (in addition to other, civil engineering works). Among non-residential buildings we can find historic or protected buildings which refer to built heritage. Table 9 presents the data related to the total production and to the heritage related production in construction industry.

Buildings	Own construction activity¹⁴ (million HUF)
Total buildings	1,097,521
Historic or protected monuments	8,699

Table 9. Production of construction industry in 2012. Source: KSH (2016)

Based on these data 0,8% of the production of construction industry can be attributed to built heritage. Probably this number is even higher as many of the residential buildings can also be protected, and other categories may also cover protected buildings (e.g. hotels, public buildings, schools, etc). However, in the statistics historic and protected monuments appear as one of these categories.

Based on Nypan's proposal, built heritage construction works can also be calculated as the heritage building/total building stock ratio applying the broader meaning of heritage, including all historic buildings. In this way we can calculate the share of heritage buildings based on the share of historic buildings constructed before a set date in the past. In the statistics we can find data about the Hungarian building stock according to the year of their construction. The data related to the year of the construction of the Hungarian building stock is presented in table 10.

Year of construction	Buildings erected before 1946	Number of residential buildings erected in 1946 or after	Total
Number of buildings	556,473	2,145,710	2,702,183
Distribution	20.59%	79.41%	100.00%

Table 10. Distribution of domestic building stock by year of construction Source: Own calculation on the basis of the National Building Energy Strategy.

We can see that the proportion of buildings constructed before 1946 (which is the oldest date in the database) is 20.6% of the total building stock.

¹⁴ „Value of construction activities done by own staff or contract labour, and own or rented equipment. Its value can be calculated as the sum of value of contractual construction activity and the value of works done by the enterprise as subcontractor, decreased by the value work of subcontractors” (KSH, 2016).

In fact, both approaches distort the results, as these ratios do not include the extent of the renovation works. Several researches have shown for instance, that the renovation and restoration of historic buildings require much more labour intensive work than that of less ornamental, modern buildings¹⁵. The Chamber of Hungarian Architects for example, recommends a 1.4 multiplier for the fees in the architectural and engineering design phase in case of historic monuments.¹⁶ A distinction is also made in calculating costs for listed versus non-listed buildings in the call for tenders of the National Castle and Fortress Program allocated to touristic developments. In the call 400 thousand HUF/square metre (1300 EUR/m²) maximum cost is earmarked for restoration and alteration works in the case of historic monuments and 220 thousand Ft/square metre (730 EUR/m²) in case of non-listed buildings. This means that the design and implementation of restoration or alteration works of historic monuments can be 1.82 times higher than that of other buildings. According to professionals of monument restoration, this extra cost is the consequence of the meticulous, often complex work of research, conservation and restoration, requiring more skilled workers and more working hours. It is important to note that in those cases where conservation works are not required the costs of restoration are around 300 thousand HUF/square metres or less (1000 EUR/m²).

Applying the calculated distribution of protected buildings and built heritage related production in construction industry we can calculate the added value of heritage to construction industry – both to production and employment. As figures in the tourism sector were calculated for the year 2012, it seems rational to calculate with the same year in the case of the construction industry. Concerning the number of employees in construction industry, data refers to the employees who are obliged to work at least 60 hours per month.

Construction industry	2012	Value added of heritage buildings (20.6%)	Value added of listed buildings (1.94%)
Gross value added, billion HUF	935	192.6	7.4
Number of employees (persons, thousand)	112.5	23.2	0.9

Table 11. Contribution of built heritage to the construction industry Source KSH, own calculation

Table 11 shows that the **value added of built heritage in the broader sense within the construction sector is 192 billion HUF (640 million EUR), also contributing to employment in this sector by nearly 23.2 thousand people. Considering listed buildings only, the value added in the construction industry is 7.4 billion HUF (24.6 million EUR) and nearly 900 jobs.**

¹⁵ Eltinga Kft (2015): Impacts of cultural heritage on the real estate market.

¹⁶ The Chamber of Hungarian Architect (2011) Recommended fee for architectural-engineering works and services. Budapest

Cultural and Creative Industry

The topic of Cultural and Creative Industries (CCI) is less well defined and researched not only in Hungary but also internationally. The European Commission defines cultural industry as the sum of all industries that convey culture or create products or services embodying culture, regardless of the commercial value of these products and services. Apart from the conventional art sectors (fine arts, performing arts, cultural heritage, etc.) film and broadcasting (television and radio), video games, media, music and the book industry are all part of CCI¹⁷. In addition, creative industry covers all industries that use culture and creative elements as a resource or input and create business and cultural value at the same time. These include architecture, design, graphics, product design, fashion design and media.^{18,19} Cultural and creative industries are the sum of these two sectors. The contribution of CCI to production and employment is gaining more importance in fostering regional development, social cohesion and sustainable development.

The link between CCI and built heritage lies in culture. Built heritage itself is part of our culture, contributing through its historic and aesthetic value to the formation of a community's traditions and identity.²⁰ Built heritage by its physical presence or often by its function boosts the nurturing of cultural values, for instance through its role in education (e.g. museums, theatre, etc.) and also enhances creativity.^{21,22}

The question remains the same for CCI as for the previous sectors: to what extent does built heritage contribute to the economic and employment share of CCI? Table 12 shows data used for this calculation.

Data	Source	Latest publication
Economic role of cultural and creative industry	Hétfa Research Centre/Design Terminal	2014
Number of employed in the cultural and creative industry	Hétfa Research Centre/Design Terminal	2014
The role of built heritage in CCI	Nypan	2015

Table 12. Data for estimating the contribution of built heritage to the cultural and creative industry

Although no systematic data collection has taken place in Hungary on CCI production; Hétfa Research Institute commissioned by Design Terminal conducted a research in 2014 on the role of CCI in Hungary. The research revealed the contribution of CCI to national production and employment in 2012. Data are shown in Table 13.

Contribution of the cultural and	2012
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¹⁷ European Commission (2012): *How can cultural and creative industries contribute to economic transformation through smart specialisation?* In European Union Open Method of Consultation. Expert group on Cultural and Creative Industries. European Agenda for Culture Work Plan for Culture 2011-2014. Working Group of EU Member States Experts (Open Method Of Coordination) on Cultural and Creative Industries.

¹⁸European Commission (2012):

¹⁹Hétfa Research institute (2014): *Creative Industry as A Resource*. Major outputs.

²⁰ Cultural Heritage Counts for Europe (2015): Full Report.

²¹ Throsby, D.(2001): *Economics and Culture*. Cambridge: Cambridge University Press.

²² Matarasso, F. (1997): *Use or ornament? The social impact of participation in the arts*, Stroud: Comedia.

creative industry	
to national production (based on the basis of GDP, billion HUF)	889.41
to employment (persons, thousand)	117.77

Table 13. Contribution of the cultural and creative industry to production and employment. Source: Hétfa Research institute (2014)

The extent to which these may be contributed to built heritage has not yet been researched in Hungary. Nypan (2015) estimates the contribution of built heritage to the CCI to 10%. However, CCI by definition includes architecture as a sector of creative industry. Architecture at the same time is also calculated in construction industry, which double counting with regards to the value added of built heritage should be avoided. According to Nypan, the 10% is low enough not to be an overestimation.²³ Calculating with this 10% **the contribution of built heritage to CCI production is 89 billion HUF (270 million EUR) and 11.77 thousand jobs.**

Real Estate Transactions

Real estate transactions include the sale and purchase of real estate – including heritage buildings – and the revenues from these transactions. Production and employment related to real estate transactions are published by KSH. As heritage buildings are also sold and purchased, built heritage certainly contributes to the production of the sector. The proportion of sale and purchase transactions attributable to historic buildings can be calculated in two ways. Firstly, international and domestic research shows that historic or listed buildings have a price premium. However, this price premium varies widely from case to case. In Denmark, for instance listed family houses sell at a 30% higher price. In our research in Hungary we found a 40% price premium in the Buda Castle, while 20% for real estate under local territorial protection in Budapest, but also 2% in case of monuments under national individual protection, and even negative price effects in some cases.²⁴ Table 14 summarizes some major results.

Price premium	
Buda Castle	40%
Monuments under local individual protection in Hungary	2%
Buildings under local territorial protection in Budapest ²⁵	20%

Table 14. Price premium of protected buildings in Hungary. Source: Eltinga (2015)

Another approach is to calculate the built heritage-related real estate transactions in the proportion of historic buildings to non-historic buildings, which is in 20.6 % (see above, Chapter on Construction Industry). We may calculate with this ratio in the broader sense of built heritage. Taking into account the price premium of built heritage from our research the near 20% ratio seems acceptable.

²³ Attention should be drawn that these are estimates lacking empirical research.

²⁴ Eltinga (2015): Impacts of cultural heritage on the real estate market.

²⁵ Contiguous zone and area of historic property

Focusing on listed buildings only, real estate transactions can be calculated as the proportion of the total sales and purchase transactions to that of protected buildings. Eltinga Ltd. conducted a research on residential buildings ordered by Forster Centre, which showed that between 2000 and 2007 out of 760,000 sales and purchase transactions there were 17,000 transactions related to listed buildings.²⁶ This means that 2.24% of the total number of residential building transactions is related to listed buildings. This is obviously not an exact ratio as public buildings and some other types of buildings are not represented, but can serve as a fair estimate. Table 15 contains data on real estate transactions and the ratio of transactions related to built heritage and listed buildings. The number of employees refers to the same as in construction industry.

Real Estate transactions	2012	Contribution of built heritage (20%)	Contribution of listed buildings (2.24%)
GDP, (billion HUF)	2,039	407.81	45.68
number of employees (000)	27.1	5.42	0.61

Table 15. Real estate transactions and the contribution of built heritage to production and employment

Calculations in the above table show that **considering built heritage in the broader sense, approximately 408 billion HUF (1.35 billion EUR) and 5,420 employees are the value added of built heritage arising from heritage building sales transactions. Calculating on the basis of the narrower interpretation, 45 billion HUF (150 million EUR) and 610 employees are the contribution of listed built heritage to the real estate sector.**

²⁶ Eltinga (2015): Impacts of cultural heritage on the real estate market.

Summary

The value added of built heritage for the time being can only be calculated based on a number of estimates and hypotheses. Calculations in this study have however been made with reasonable precaution to avoid an overestimation of the role of built heritage in the economy. In addition, historic buildings may contribute to other sectors as well, which are outside of the scope of this study. The results therefore may be regarded as an approach or an orientation indicating the importance of built heritage for the Hungarian economy.

Summarizing the calculations we end up with the following results: the value added of built heritage in 2012 was 875.73 billion HUF (2.91 billion EUR) providing a job for 85.51 thousand people. **This means that in total built heritage has contributed to the GDP by 3.64% and to employment by 2.23% in 2012 in Hungary.**

	Contribution of built heritage		
Sectors	Proportion	Production (billion HUF)	Employment (persons, thousand)
Tourism	13.35%	186.36	45.12
Construction industry	20.60%	192.62	23.20
Cultural and creative industry	10%	88.94	11.77
Real estate market	20%	407.81	5.42
Total		875,73	85,51

Table 16. Contribution of built heritage to the domestic economy in sectorial distribution

Table 17 shows the value added of listed buildings to the production and employment. It can be seen that in this case listed buildings contributed to production in 2012 by 328.38 billion HUF (0.97 billion EUR) and to employment by 58.38 thousand jobs. Regarding GDP, **nationally listed and locally listed buildings have contributed to production by 1.37% and to employment by 1.53% in 2012 in Hungary.**

	Contribution of listed buildings		
Sectors	Proportion	Production (billion HUF)	Employment (persons, thousand)
Tourism	13.35%	186.36	45.12
Construction industry	0.79%	7.40	0.89
Cultural and creative industry	10%	88.94	11.77
Real estate market	2.24%	45.67	0.61
Total		328,38	58,38

Table 17. The added value of listed buildings to production and employment