How to Manage Public Artworks?
A Market Alternative to Deaccessioning

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(preliminary and incomplete version)

Abstract

The large and growing size of cultural heritage poses formidable fiscal and management challenges to governments in several countries. In turn, a large part of movable cultural heritage is hidden, since it lies in warehouses of public museums and, in many cases, is not even properly recorded. Deaccessioning of public artworks and public-private partnerships have often been considered possible solutions to enhance governments efforts to increase, protect, display and manage cultural heritage. Established legal frameworks severely limit the scope for privatization of public artworks and, thus, the optimal asset management of cultural property. To overcome such a limitation, we propose a "tradable" long-term concession on movable public artworks which may enhance the incentive of "selected" private operators (e.g., art investment vehicles) to invest in costly activities, such as "digging" in warehouses and providing a high-quality digital inventory of artworks, which in turn would raise both the social and the monetary values that can be extracted by public artworks exploitation.

Keywords: Movable cultural heritage; Asset management; Public-private partnerships; Art market.

JEL Classification: Z10 Z11 H41.

1 Introduction

There are many more public artworks in museums than visitors can see: most of them are stored in museums' warehouses, not properly archived and registered in inventories. The problem of the poor enhancement of museum warehouses is widely recognized (Carmignani et al., 2012). Hidden artworks generate no benefits, as their fruition is impeded to the public. The presence of huge unavailable collections might turn from a social value to a cost for public

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museums, which need to host them, occupying space and taking the risk of deterioration. As highlighted by UNESCO (2015), one of the most important aspects of collection management lies in the establishment and maintenance of "an inventory and regular control of collections". Inventories are an essential instrument for a number of tasks in the cultural heritage management cycle – e.g., control of illicit trafficking, improvement of collections' mobility. The UNESCO recommendations also take a step forward by prompting Member States to promote the use of international standards in the compilation of inventories, with an eye to the deployment of digitized collections which are complementary to conservation activities. Despite the importance attributed to a good inventory management system by UNESCO, there is still a lot of room for improvements in this area. From a survey carried out in 2019 by UNESCO, it turned out that only 56 of all Member States answered.[1] Regrettably, the majority of the Member States endowed with a particularly dense network of museums did not submit any answer. Among the non-responding countries we find, for instance, France, Germany, Italy, and the United Kingdom.[2] The absence of responses to the survey from relevant Member States may hide a structural difficulty in managing collections' warehouses: this aspect lowers the probability to make the artworks visible.

In this work, we suggest a possible market solution to extract social and monetary value from artworks that are currently "hidden" in museums' warehouses, without recurring to deaccessioning. The latter aspect is crucial insofar as, particularly in civil law countries, it is generally not allowed to transfer the property of public artworks. Legal enforcements on the property transfer of cultural goods owned by the State relate to their peculiar features. Cultural goods, in fact, have been widely recognised in the literature (Mazzanti, 2002; Bertacchini et al., 2016; Muriel-Ramirez, 2017) as multi-dimensional goods, as they pertain to the ideal categories of merit, public and mixed goods. In particular, the merit good dimension drives public action and policy making to enhance the collective value of generated

[1]Most respondents considered their national legislative framework to be fully compliant with the 2015 UNESCO recommendations, with only four acknowledging a poor compliance, and three admitting that such recommendations were not yet adopted by national legislation.

[2]According to data gathered by the European Group on Museum Statistics (2019) relative to its members, Germany and the United Kingdom rank as the first twos in terms of number of total museums, with 6,741 and 1,732 units, respectively. France ranks as the fourth and Italy as the twelfth – but would have ranked as second, if privately owned museums were also included. Moreover, considering the number of cultural sites included in the UNESCO World Heritage Sites, as of 2021, Italy ranks as the first country, with 50 sites, followed by Germany (43 sites), Spain (42 sites), France (39 sites), and the UK (27 sites).

externalities, whereas the mixed good features justify public support. Given the externalities and the meritoriousness linked to cultural goods, public action is justified. Italy is a good case study for the development of our model: overcoming the problem of hidden artworks would be a huge improvement for this country, given its large and growing cultural heritage, facing very tight fiscal constraints. Our work takes Italy as an example to develop a model which could be replicated in other countries with similar characteristics.

The scope for our proposal to exploit a market solution for "hidden" artworks' trading is supported by a growing interest in art markets, which reached a global worth around US$ 64.1 billions in 2019, with auction sales totaling US$ 2.9 billions in the first half of 2020 (Credit Suisse, 2020). In this market, collectors are increasingly treating art as a component of their total wealth. According to the Art & Finance Report by Deloitte (2019), in 2019, 81% percent of collectors reported they ask wealth managers to include art and collectibles in their service offering, up from 66% in 2017 and the highest record since the first year the survey was carried out in 2011. Art can, indeed, be characterized as a value-preserving asset class rather than a mere investment vehicle, given its greater correlation with gold with respect to other asset classes. An emerging trend in the art market is the increasingly financially motivated audience for art trading, which adds to more traditional drivers for art investments, i.e., collecting purposes and emotional attachment to the artwork. The Deloitte (2019) survey data seem to confirm this double-ended motives for art investments. On the one hand, the percentage of collectors who reported that portfolio diversification was an important driver for buying art went from 36% in 2017 to 52% in 2019, the highest number recorded since 2011. On the other hand, 81% of art professionals in 2019 stated that their clients bought art for the main purpose of enriching their collections, though mindful about the investment perspective (the share was 86% in 2017). Lastly, while 33% of the surveyed collectors reported only collecting purposes for buying art, 65% reported both emotional and financial purposes, making a case for an art market audience valuing both the aesthetic and the financial characteristics of traded works of art.

The article is structured as follows. In section 2 we review the literature on the available forms of financial exploitation of artworks which are currently in use worldwide. Section 3 focuses on the Italian context as an explanatory case study. In Section 4, we suggest a model to address the issue of hidden artworks, analyzing different scenarios. Section 5 concludes.

2 Related literature

In the vast majority of the literature dealing with the enhancement of museums' collections, the main focus is on conservation risks posed by artworks mobility (Lucchi, 2018). In this work, we take for granted the existence of this (technological) problem, and we go further to suggest a way to enhance the management of movable cultural heritage, involving private operators.

Displaying artworks is an important target for museums, as it measures the efficiency of the museum activity itself. Guccio et al. (2020) analysed data collected by the Italian National Statistical Office (ISTAT), showing that Italian private museums are more efficient than public museums: to evaluate efficiency, the extent of exhibited collections was one of the parameters taken into account. This aspect suggests that private business models may enhance the efficiency of the (public) management of cultural heritage.

One of the most widely debated tools that museums may use to face the issue of hidden artworks is *deaccessioning* (Vecco and Piazzai, 2015; Di Gaetano and Mazza, 2017; Imperiale and Vecco, 2017; Vecco et al., 2017; Wijsmuller, 2017), which consists in selling or disposing in other ways an item belonging to a museum, thus making it unavailable to its audience. Deaccessioning implies a clear trade off. On one side, it is instrumental to the exhibition and preservation of items which were previously never displayed, possibly after new investments in inventory building, thus fostering the optimization of museum resources and management (Vecco and Piazzai, 2015). On the other side, deaccessioning faces important legal hurdles. It is generally not allowed in "Napoleonic" legal tradition (or Civil law) countries and also in some Anglo-Saxon legal tradition (or Common law) countries.[3]

Information asymmetries between museum managers and citizens or government representatives often occur in the context of deaccessioning practices, and may lead the former to opportunistic behavior. Museum managers may, for example, rely on deaccessioning to meet

[3]Some restrictions have been enforced to prevent the "unethical" use of its proceeds as a source of short-term revenue – e.g., the 2014 UK's Financially Motivated Disposal Toolkit; or the 2016 restrictions on the Dutch disposal guidelines (Wijsmuller, 2017).

current expenditures, rather than collection improvement; or they may oppose systematic economic evaluation of their collections – which, in many cases, is also particularly difficult because of the absence of a market assessment – possibly leading to asset mis-management (Vecco and Piazzai, 2015).[4]

Another tool which can be deployed to address the issue of "hidden artworks", that has particularly developed in the last twenty years, is to foster collection mobility between museums through lending and borrowing agreements (Pettersson et al., 2010). A first milestone at the European level was the establishment of guidelines about lending and borrowing practices between museums, dealing particularly with insurance, mutual trust and immunity from seizure (Lending to Europe, 2005). Then, the *Action Plan for the EU Promotion of Museum Collections' Mobility and Loan Standards* was published in order "to facilitate the access to Europe's cultural heritage, make it available for all citizens and find new ways to improve co-operation, trust and good practice for lending between museums" (Finnish Ministry of Education, 2005).

Nevertheless, different legislative frameworks have prevented international standardization of loan agreement schemes. An important contribution in this direction was the establishment in 2007 of NEMO (Network of European Museum Organizations) Standard Loan Agreement, which is applicable to all kinds of museums and aims at encouraging lending and borrowing of artworks throughout Europe, and beyond. The NEMO Standard "complies with national and international standards of ethics including the ICOM Code of Ethics and the UNESCO Convention on the Means of Prohibiting and Preventing Illicit Import, Export and Transfer of Cultural Property" (Network of European Museum Organizations, 2008). The NEMO Standard has provided practical support to the implementation of lending and borrowing policies of museums worldwide.

Comparing the loans policy of three important museums established in Common law countries, namely the Natural History Museum (2019) in London, the Metropolitan Museum of Art (2020) in New York, and the Western Australian Museum (2015) in Perth, some commonalities emerge. First, the examined institutions all consider lending practices to be

[4] This is an example of principal-agent problem, with the agent being museum managers, possibly endowed with greater information on collections with respect to their principals, i.e., government representatives or citizens.

in line with their educational and scholarly mission, as they either enable their collections to be enjoyed by wider audiences, or temporarily enrich their collections. Lending activities should follow careful considerations regarding the interests of students and visitors of the Museum, the physical condition and degree of rarity of the exchanged object, and any risk the mobilization could expose it to. A due diligence check, aimed at verifying the legal ownership of the loaned objects, must also be conducted prior to mobilization.

Another important provision regards loans which are not directed towards other museums or cultural institutions. The three museum institutions analysed address this kind of lending practices in their loan policies. Commercially managed loans, such as loans for commercial, promotional and charitable purposes, are formally recognised by all the considered institutions, and subject to the authorization by competent authorities. All such uses of mobilized pieces of art must always acknowledge the borrowing institution and fees may be charged for the use of the objects. Moreover, the Metropolitan Museum of Art and the Western Australian Museum recognize that loans to private individuals can be made under special circumstances, although such requests are to be considered on a case-by-case basis.

In Civil law countries, such as Italy, while lending practices between institutions are permitted, they are still limited to exhibitions open to the general public, as it can be noted by looking at the lending policy of the Pinacoteca di Brera (2020). Moreover, the process is subject to the preventive authorization by the Ministry of Culture or its subsidiaries (Axa ART, 2018). Furthermore, the practice of paying a fee, that was initially introduced to compensate for the lack of reciprocity in lending relations between museums and private organizers of exhibitions who do not own collections, has been extended to lending relationships between museums. This factor further restricts the use of lending between museums (ICOM Italia, 2018).

It is therefore clear that neither collection mobilization through lending practices between museum institutions, nor through deaccessioning alone have been able to solve the issue of hidden artworks. Though deaccessioning is an appropriate tool of the asset management strategy of cultural heritage, the merit and mixed good features of cultural goods imply, in many countries, legal and sometimes constitutional impositions restricting its use. For this reason, in this paper we suggest a different approach which is based on the creation of new *long-term concession* schemes on single public artworks which may foster a new market for private and public exploitation of public artworks, while keeping their ownership in the public domain. Xiang (2018) proposed a similar rationale to build a robust art rental market for pieces owned by (private and public) art investment vehicles. Art investment vehicles represent an opportunity for investors who wish to gain the financial rewards of art, without individually owning the underlying artworks. Xiang (2018), in particular, reviewed two forms of investment vehicles, namely art investment funds and art exchange funds. While the business model of art investment funds is based on trading artworks owned by the fund on the secondary market, art exchange funds rely basically on the stock exchange mechanism, enabling investors to buy and sell shares in art management companies, which specialize in buying, selling and managing artworks. The latter, according to Xiang (2018) is more promising in fostering investments in the art sector, as they enable less wealthy individuals to invest, since they do not require minimum capital contributions, and do not lock in investors for long periods of time, given the presence of a robust secondary market for their shares. Despite the advantages, typical issues connected with the nature of art investment vehicles still arise, such as the illiquidity of assets (i.e., artworks are not fungible, have very high resale price, and their value is very difficult to estimate), the long-term investment perspective (given that the primary market typically excludes investors who purchase with the intent to immediately resell at an higher price), and legislative constraints, which are particularly strong in the case of art exchanges in the U.S. and Europe. In order to solve these issues, Xiang's proposal is to create an art rental market for the pieces owned by art funds: this would allow investors to benefit not only from their investment value, but also from their aesthetic value, generating revenues from rentals and reducing maintenance costs (e.g., storage costs). As a by-product, such rental market would provide useful information to assess the market value of artworks. Renting high-value artworks, however, involves a risk of damage and depreciation. Moreover, any potential damage to the artworks would pose a threat to the artist's moral rights. To mitigate these risks, the artworks' rental market should be regulated: only selected operators can offer or demand services on this market; standard procedures should warrant risk mitigation; residual risks have to be insured. These considerations are particularly important in the light of the most recent innovations of the art investment industry, including new financial technologies such as fractional art ownership and tokenized art models.[5]

Starting from the same issue highlighted by Xiang (2018) for artworks owned by art investment funds, our contribution shifts the attention to the introduction of a new tradable concession on public artworks which may expand the supply in the market for rental of artworks, hence the potential role played by art investment vehicles. Particularly, we suggest to rely on the enhanced interest of private operators in (public) artworks exploitation as a channel to enhance the capacity of public museums to extract the monetary value of their cultural property. In turn, this may relax the financial constraint to solve the hidden artworks dilemma of public museums, thus freeing up warehouse capacity without losing public ownership rights.

3 The Italian case in the European perspective

As already highlighted, Italy is one of the countries with the most significant cultural heritage in the world. However, poor management, particularly as regards inventory, could hamper the proper protection and promotion of collections and museums advocated by UNESCO. The 2018 "ISTAT survey on museums and similar institutions" portrays a scenario characterized by poor exploitation.[6] Out of the total 4,908 surveyed units, 4,445 submitted their answers. Detailed information on questionnaire answers can be found in Table 1. Particularly, when asked whether they kept collections or goods in storage, almost half of the respondents (48%) answered affirmatively, a quarter answered they did not (25%), while 13% stated that they did not even own a deposit or a warehouse and 13% did not provide an answer to the question. When it came to inventory management, it emerged that almost two

[5] Drawing inspiration from blockchain, fractional art ownership and tokenized art models offer a wide range of benefits in terms of investment diversification and of providing access to art investment to lower net-worth individuals who are usually excluded from it. Fractional ownership can also represent a tool for investors to have a smaller investment exposure to an artwork, and for living artists to retain part of the equity even in case of secondary sales of their works. These models rely on token contracts, which are tools for rights management that can regard any digital or physical art asset or an access right to assets not directly owned (Deloitte, 2019; Whitaker and Kräussl, 2020).

[6] An online questionnaire was submitted to all the cultural institutions of the country which were open to the public in 2018. The survey covered 3,882 museums, galleries or collections, 327 archaeological sites, 630 monuments and monumental complexes, and 69 eco-museums. Of these, 4,448 were not state-owned and 460 were state-owned.

thirds of the interviewed institutions (63%) kept a paper inventory, while the corresponding figure for digital inventories was less than a half (40%). The data also show that 75,1% of the units which reported no paper inventory do not have a digital inventory either, leading to 16,9% of the surveyed institutions reporting a lack of an inventory system whatsoever. The evidence of an inefficient management of inventories becomes even more striking when considering scientific digital catalogues, with only 11% of the surveyed institutions reporting to have them, 89% of which had also reported to have a digital inventory. Moreover, when asked how many items were actually recorded in the digital catalogue, only 37% of the institutions stated that it covered all of their items, while for the remainder it was either a half (35%) or less than a half (28%), with 2 institutions not providing an answer to the question.

Despite the provision of the 2004 "Urbani Code"[7] that the Ministry of Culture[8], alongside Regions and other local entities, should ensure and oversee the cataloguing of cultural goods, empirical evidence still points to incomplete inventory activities, that may also hinder the proper management of cultural heritage goods. For instance, a 2017 directive of the Italian Ministry of Culture[9], that specifically refers to the case of archaeological goods, explicitly prohibits the mobilization of uncatalogued goods. This further limits collection mobility among cultural institutions. Indeed, the same 2018 ISTAT survey pointed out that only 17,5% of the institutions which responded to these specific questions had received goods or collections on consignment from other institutions, while 13,8% had received goods or collections on loan for use from other institutions, and 29,1% received borrowed goods or collections for display.[10] Likewise, the percentage of interviewed institutions reporting that they had given to other institutions goods or collections, either on consignment or on loan for use, was an even lower 6% of those answering the question, while the 31,3% of respondents had granted to other institutions borrowed goods to put on display.

[7]Often referred to as the Heritage and Landscape Codex, it corresponds to the delegated decree 42/2004 and was named after the then Minister of Culture.

[8]In Italian, "Ministero per i Beni e le Attività Culturali e per il Turismo".

[9]The reference is to the "Clarifications on the Circular of The Ministry DG-MU n. 42/2017", namely "Chiarimenti in merito alla Circolare DG-MU n. 42/2017".

[10]When goods or collections are granted on consignment, they are to be maintained in the storage units of the receiving institution. The loan for use contract, on the contrary, grants the goods or collection for a specified use by the receiving institution. Lastly, granting goods or collections for display implies their use for exhibition purposes.

It appears that the most exploited form of exchange of cultural goods between cultural institutions in Italy consists of borrowing pieces or collections to be put on display, which however is still far from being a common practice among respondents.

Table 1 – Italian Cultural Institution survey data (Source: ISTAT, 2019)

Question	Yes	No	Other	No answer	Sum
The museum/institution, in 2018, had goods or collections stored in deposits	2139	1115	No deposit: 597	594	4445
The museum/institution, in 2018, had a paper inventory	2785	1003	NA	657	4445
The museum/institution, in 2018, had a digital inventory	1784 Of which: 1483 also had a paper inventory, 245 did not, and 56 did not answer the previous question	1915 Of which: 1152 also had a paper inventory, 753 did not, and 10 did not answer the previous question	NA	746 Of which: 150 also had a paper inventory, 5 did not, and 591 did not answer the previous question	4445
The museum/institution, in 2018, had a scientific digital catalogue	469 Of which: 416 also had a digital inventory	3127	NA	849	4445
As of 2018, how many museum/institution goods have been catalogued in digital	All their goods: 174	A half: 163	Less than a half: 130	2	469
The museum/institution had goods or collections on consignment from other institutions	663	3124	NA	658	4445
The museum/institution had received borrowed goods or collections for display from other institutions	1101	2684	NA	660 Of which: 581 were also missing answers from the two previous questions	4445
The museum/institution had given goods or collections on consignment/loan for use to other institutions	227	3555	NA	663	4445
The museum/institution had granted borrowed goods or collections for display to other institutions	1202	2645	NA	598 Of which: 573 were also missing answers from the previous question	4445

The Italian legal framework lays the foundation for the shortcomings on cultural goods management evidenced in the data. The legislation of the Italian cultural system is based on the Article 9 of the Italian Constitution that seals the prominent role of the Republic in the promotion and protection of cultural heritage. The main authority is, therefore, the Ministry of Culture. The fundamental importance of government is motivated by the intrinsic characteristics of cultural heritage. First, the movable and immovable assets belonging to the Italian cultural heritage display the characteristics of merit, public and mixed goods and generate externalities on the society, justifying public action and support. Second, cultural heritage is commonly conceived as a strategic asset for the Italian cultural and touristic development. Such features translate into the taxonomy found in the Italian legislation: assets belonging to the cultural heritage which are part of State property (the so-called "demanio") cannot be (freely) alienated, prescribed or expropriated. The article 54 of the "Urbani Code" identifies among such assets all immovable heritage of historical, archaeological and artistic interest, and the collections of public museums, galleries, archives and libraries. Conditional on the authorization by the Ministry of Culture, that is granted only under compliance of the duties of cultural goods conservation and public fruition, assets belonging to State property may be alienated (article 55 of the "Urbani Code").

The merit good nature of cultural heritage goods has historical roots in the Italian legal tradition. The status of cultural heritage as "community goods" was first established by the Latin law. In the Middle Age and the Renaissance, the same principle was enshrined in Florentine, Venetian, Tuscan and Vatican legislations. Similarly to ancient public and religious monuments of the Roman era, and following particularly the beginning of the 17^{th} century legislation in Florence, in the modern law of Napoleonic derivation museums represent the sovereign depository of cultural heritage assets, free from any claim and alienability, with protectionism against the export of local renown artists' works. After the Italian Unification, notwithstanding the tendency towards the liberalization of the Italian cultural heritage and the strong interest of many European collectors in the *resurgence* of the Italian culture, the Italian law reaffirmed the role of government in the protection and promotion of cultural heritage (Bodo and Bodo, 2016). Inalienability and other public-interest constraints were extended also to privately-owned masterpieces, except for few, rare, exceptions. The growth of the national cultural heritage was pursued by favoring cultural property transfers to the State. In this perspective, the Urbani Code represented an important reform since it introduced a faster procedure to privatize cultural assets (Benedikter, 2004).[11] Furthermore, the Urbani Code also extended the possibility to sell immovable goods and lend movable goods and the scope for temporary concession of ancillary services of museum activities (i.e., wardrobe, cafes, bookshop, ticket office, guardianship, etc.) (Bodo and Bodo, 2016; Bertacchini and Nogare, 2014). The Italian government declared that the rationale for this reform was to increase revenues and enhance conservation and management of cultural heritage.

The reforms implemented in the last quarter of century did not affect the fundamental principles of the Italian legislation in the field of cultural heritage management. The latter still belongs to the Civil Law legal tradition, as opposed to the Common Law tradition (Vecco and Piazzai, 2015; Wijsmuller, 2017). The legislation of the North-western European countries tends to belong to the latter. In particular, these countries adopt a more visitor-oriented approach, where deaccessioning is formally considered a proper tool of cultural heritage management. On the contrary, Southern European countries belong to the former tradition that, as argued, awards to the government a prominent role in conservation and protection of cultural heritage, particularly through an extensive power to restrict deaccessioning (Vecco and Piazzai, 2015). However, such legal principles pose considerable problems in terms of management of cultural heritage and, particularly, of cataloguing activities.

Italy is an interesting case study in this perspective, considering the natural trade-off which arises from the two relevant features of the country. First, a large known cultural heritage, that grows at an annual rate between 1% and 2% (Vecco and Piazzai, 2015; Vecco et al., 2017). Second, a largely unfunded cultural sector, which is imputable, for the most part, to cuts in the italian public cultural expenditure starting from the 2000s (Bodo and Bodo,

[11] Particularly, privatization is based on the mechanism of "silence-assent", whereby the local subsidiaries of the Ministry of Culture have only 120 days to provide evidence of the historical and cultural relevance of the assets and goods which are going to be privatized.

2016).[12] The mentioned trade-off explains the growing appeal of public-private partnerships in the Italian cultural sector (e.g., fiscal incentives to private liberal grants or patronage, sponsorships, commercial exploitation of public artworks, and the aforementioned private management of services offered in national museums). The underlying idea is that private involvement in the management of cultural heritage is not a move towards deaccessioning and privatization, rather a quest for innovation and efficiency in governmental cultural policy.[13] The latter is also the motivation for the decentralization to local government of competences over funding and managing cultural heritage (Guccio et al., 2020). Moreover, following the lead of France[14], with the 2007 and 2014 reforms, the administrative autonomy of State museums was enhanced (Cellini et al., 2020). Particularly, the directors of museums have more competences over conservation and valorization of museum's collections.[15] Lastly, a very important obstacle to the optimal management of the Italian cultural heritage is the lack of a comprehensive cataloguing system for all artworks in museums, be them displayed or not (Carmignani et al., 2012).[16]

4 A Model of Public-Private Partnerships

4.1 Theoretical Framework

We assume that a sizable amount of *hidden* artworks lies in warehouses of government-owned museums. Hidden artworks are characterized by two features. First, an expected investment

[12] According to (Angei, 2020), public funds allocated to the missions "Tourism and Cultural heritage protection" still represent 0,15% of the GDP (to be compared to an average of other EU countries for "Cultural Activities" around 0,40% of GDP) and 0,30% of general government primary expenses.

[13] Such an approach is supported by two studies showing that, in Italy, the performance of public financially autonomous museums or public museums with outsourced administration is higher compared to private museums (Bertacchini et al., 2018; Cellini et al., 2020). This result is probably biased by the fact that most of Italian private museums are owned by the Catholic Church.

[14] In France, the most important national museums are "établissements publics", which implies administrative autonomy.

[15] However, only the most important museums (e.g., Galleria degli Uffizi) have actual autonomy, while most public museums still depend on regional subsidiaries of the Ministry of Culture (namely, "Direzioni Regionali Musei") which retain fundamental functions such as new acquisitions, the organization of temporary exhibitions, the promotion of cataloguing, valorization, communication and restoration activities.

[16] The 2018 Ministry for Culture's decree no. 113 instructed museums with a series of *uniform levels of quality* in the conservation and sorting of artworks, including those which are not on display (Salvi, 2019). At international level, ICCROM (the International Centre for the Study of the Preservation and Restoration of Cultural Property) established a methodology to reorganize museums' deposits (called RE-ORG), which is currently at least partially implemented in 145 museums from 30 countries.

cost, $c(n) + C$, has to be borne to "extract" n of such goods from museums' warehouses and to make them available to the public (e.g., research, digital cataloguing, conservation, marketing, etc.), where the variable cost is increasing and convex – i.e., $c'(n) > 0$ and $c''(n) > 0$ – and the fixed cost to implement such extraction activity is $C > 0$. Second, the social net value of extracting an item of the movable cultural heritage from museums' warehouses is ex ante unknown, while it is ex post publicly observable.[17] We assume that the expectation of such a value is, on average, V.

A share αs of the social value V can be monetized, where $\alpha \in (0, 1)$ corresponds to the maximum expected market value of admissible uses of the extracted item (e.g., tickets paid by visitors of museums or expositions in any part of the world, any sort of merchandising, commercial uses, etc.) and largely depends on the intrinsic features of the considered artwork[18], and $s \in [0, 1]$ is the size of the (global) market that can actually have access to the extracted item. For example, in the case of an artwork that remains in warehouses after being extracted (e.g., properly catalogued), s is quite low. On the contrary, it is rather natural to assume that, if the extracted public artwork is available for use by several possible art operators (e.g., other museums, art exchange funds, etc.), s increases. For the sake of simplicity, we assume that: $s \in (0, 1)$ if the extracted artwork is *exploited* only by the government (e.g., by the network of public museums or through existing lending-borrowing schemes); and $s = 1$ if the government issues *tradable long-term concessions* on individual artworks belonging to public cultural heritage, whereby *selected* art operators (e.g., public and private museums, art investment vehicles, private collectors, etc.) may rent them from public museums and, possibly, transfer the concession right among them on a secondary market which is regulated by the government.

The described scheme replicates the typical functioning of primary and secondary markets of government securities of many developed and emerging countries, including Italy. Besides keeping the property of movable cultural heritage, several legal and financial mechanisms may warrant the role of the State in the protection of the considered goods. Moreover, the

[17]For the sake of simplicity, in this model we do not consider agency problems which may be involved in artworks' extraction.

[18]The physical (or technological) features of the good and preferences of potential users, which are influenced by cultural movements.

scheme may allow public museums to directly issue long-term concessions on the primary market of public cultural heritage and, then, operate as market makers (i.e., renters) on the secondary market.[19] In turn, the described market of long-term concessions on public artworks will enhance the asset management of public cultural heritage, as compared to the lending-borrowing agreements which currently regulate the cooperation among cultural institutions within as well as across countries.

In the following sections, we analyze four different frameworks. The benchmark of our analyses is the first best choice of the government who maximizes the net social benefits derived from movable cultural heritage (Section 4.2). Then, we consider the situation in which the government maximizes the social welfare subject to a (second-best) fiscal constraint without any possible market exploitation of extracted artworks (Section 4.3.1) or considering the financial relief implied by such exploitation (Section 4.3.2). Finally, we analyze the case in which the government opens the new market of long-term concessions on extracted artworks and delegates to market makers the decision about the number of artworks to be extracted from warehouses (Section 4.3.3).

4.2 First best benchmark

We define the first best investment in artworks' extractions, considering the optimization of the government that maximizes the net social benefits:

$$\max_{n \geq 0} Vn - c(n) - C. \tag{1}$$

From the first order condition, we get:

$$V = c'(n^{fb}).$$

[19] It is beyond the scope of this paper to analyze the implications of alternative models of the (financial) microstructure of the considered primary and secondary markets, as well as the potential of financial innovation (e.g., securitization, tokenization) which may follow the creation of the secondary market of long-term concessions on public artworks.

It is worth noting that the extraction of artworks from public museums' warehouses is not always socially optimal. If the condition

$$Vn^{fb} - c(n^{fb}) - C > 0 \tag{2}$$

is violated, it is inefficient, from the collective point of view, to invest in expanding the (known) cultural heritage, i.e., $n^{fb} > 0$. In the following, we assume that the condition (2) is satisfied.

4.3 Second best investments in artworks extraction

In the real world, governments face (second-best) resource constraints since they typically have to use taxpayers money (which involve efficiency losses) to finance public policies, including the cultural policy. In this section, we analyze alternative second best policies, taking into account fiscal constraints and alternative mechanism to finance artworks' extraction.

4.3.1 Government investment without commercial exploitation of artworks

First, we analyze the case in which the government wants to maximize the net social benefit function (1) under the following budget constraint:

$$B \geq c(n) + C, \tag{3}$$

where $B \geq 0$ is the budget available for investments in expanding the (movable) cultural heritage.

In this case, the optimal condition we get is:

$$V = (1 + \mu)c'(n^B),$$

where $\mu \geq 0$ is the *marginal cost of public funds.*[20] This is the additional (monetary) loss that the government faces when it uses public revenues or, equivalently, the social benefit of

[20] Technically, μ is the Lagrangian multiplier associated to the budget constraint (3), which is equal to zero when, at the optimum, the constraint is slack; and it is strictly positive when, at the optimum, the constraint is binding.

an additional unit of public revenues.

It is easy to check that the larger is μ, the lower is the number of hidden artworks exploitable, n^B. Therefore, $n^B < n^{fb}$ whenever the budget constraint of cultural policies is binding, i.e., $\mu > 0$. Particularly, for a sufficiently large marginal cost of public funds $n^B = 0$. The latter is the case of countries, like Italy, that are exposed to severe fiscal restraints.

4.3.2 Government investment with commercial exploitation of artworks

In all countries, government investments in the expansion of the movable cultural heritage also generate monetary revenues (e.g., tickets for museums visits). Considering that government can exploit (part of) the market value of extracted artworks, the budget constraint characterizing the second best optimization problem becomes:

$$B + \alpha s V n \geq c(n) + C, \tag{4}$$

where as argued above $0 < s < 1$.

Maximizing the net social benefit function (1) under the budget constraint (4), the optimization condition becomes:

$$V = \frac{1+\mu}{1+\mu\alpha s} c'(n^g). \tag{5}$$

We obtain two results. First, given that $\alpha s > 0$, $\frac{1+\mu}{1+\mu\alpha s} < 1 + \mu$, hence $n^g > n^B$. The intuition is that the commercial exploitation of public artworks relaxes government budget constraint and, given the budget B, fosters government's capacity to invest in the expansion of cultural heritage. Second, if the potential of commercial exploitation grows – i.e., αs increases, hence $\frac{1+\mu}{1+\mu\alpha s}$ decreases – n^g grows.[21]

[21] By the comparative statics of the first order condition of the government's optimization problem:

$$\frac{dn^g}{d(\alpha s)} = \frac{\mu}{1+\mu\alpha s} \frac{c'(n^g)}{c''(n^g)} > 0. \tag{6}$$

4.3.3 The market of long-term concessions on artworks

Building on the last result we obtained in the last section, if the government can design a scheme such that the potential for commercial exploitation increases it may afford a larger investment capacity in the expansion of the cultural heritage. As argued in the introduction of the theoretical framework, issuing tradable long-term concession would very intuitively expand the capacity of the government to widen the market value of extracted artworks. To some extent, such a scheme would "decentralize" to the market of art operators the choice of the dimension of the investment in artworks' extraction.

In this case, the objective function (of market makers) includes only the social benefits that can yield a monetary value, hence:

$$\max_{n \geq 0} Vn\alpha - c(n) - C, \tag{7}$$

where, as discussed in the presentation of the theoretical framework, we consider the maximum market size, i.e., $s = 1$.

By the first order of (7),

$$V\alpha = c'(n^m). \tag{8}$$

Two considerations emerge from the analysis. First, the higher is the expected market exploitability α, the higher is the number of artworks that the market makers would "demand" to be extracted from warehouses of public museums, n^p. Second, if the government capacity of commercial exploitation, i.e., $s < 1$, is low enough, it is possible that the full decentralization of the investment choice leads to a larger investment with respect to what government could do, i.e., $n^g < n^p$. In the latter case, there is a clear incentive to redesign the exploitation of public artworks allowing selected art operators.

5 Conclusion and policy implications

In this work we suggest a way for the development of a secondary artwork market and the related securitization process. This solution clearly derives from the financial market, but it might also have similar benefits in the artwork sector. First, this framework can create a competitive and complete market boosting incentives to engage private sector in channeling financial resources to foster the optimal management of cultural heritage. Second, a secondary market and the related securities can ensure the required liquidity to increase investments and the overall market efficiency. Third, securitization in particular operates a risk transfer and a risk redistribution that can more easily induce the private sector involvement.

One relevant aspect of this solution is the uncertainty that characterized warehouses' features, both in terms of quantity and quality of the artworks not displayed. As discussed in the introduction of this work, inventories are often absent or insufficient to provide proper information for organizing the exposition of the artworks stored in the warehouses. This could represent a problem for market activation, as high uncertainty can be borne only by few investors, and only in presence of potential high revenues. One possible obstacle to the creation of a credible market is that the public owner is expected to have more information on the artworks retained in its warehouses, and it could act strategically to keep the most valuable among its privileges, letting only the less valuable for circulation: this behavior reduces the appeal for private actors to be involved in the market, since it is expected to be distorted. This case, however, is less plausible when the artworks' extraction is costly for museums, and this is the case we are discussing in this work. On the opposite side, contractual arrangements between the public owner and the market makers should foresee the exclusion from the secondary market of any highly valuable artwork emerging from the extraction process. As a consequence, it is reasonable to expect that, at least in the short period, public structures will have an advantage in the mining process of warehouses, as partial information is already internally owned. Opening and widening the market, however, this activity could be carried out by private entities gathering funds on the market: as we highlighted in section 1, there is high interest from private investors in the cultural market, and it is reasonable to assume that the market of long term concession would be considered desirable by such investors. One of the most relevant enabling factors to activate this process is to establish conservation standards to avoid adverse selection and moral hazard of the operators, ensuring the conservation of the public artworks. Referring to traditional literature on cultural goods, a possible critique to the presented model is related to their peculiar nature. Indeed, their public good features have been one of the main reasons for the opposition to practices such as deaccessioning. It should be reminded, however, that the tradable concessions scheme proposed in this paper, unlike deaccessioning, has, as one of its distinguishing features, the retention of public ownership of the traded artworks. Moreover, if the purpose of art in its broadest sense is for it to be enjoyed by the largest number of visitors, and given the government fiscal constraints hindering the optimal management and inventory of museums' warehouses, the proposed scheme would increase the benefits' side of the net social benefits allowing for the creation of a certain degree of aesthetic enjoyment.[22] Concluding, the model presented in this work can represent a way to activate investments in the sector also in presence of government budget constraint: the presence of such constraints, actually, enhance the value of our solution, as artworks will otherwise be kept hidden without producing any social value. To safeguard the features of the artworks and protect them, it is essential to base the market on conservation standards and clear rules for the new market and its operators.

[22] Aesthetic enjoyment is one the dimensions of cultural capital as defined by Throsby (2003). In the case of the artworks remaining in museum warehouses without proper cataloguing and evaluation, the aesthetic enjoyment can be considered as close to zero.

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