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HOW TO MANAGE PUBLIC ARTWORKS? A MARKET ALTERNATIVE TO DEACCESSIONING

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How to Manage Public Artworks? A Market Alternative to Deaccessioning*

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Abstract

The case of Italy—that is representative of a global trend—highlights how a large part of movable cultural heritage is hidden in public museums' warehouses and not even properly recorded. The legal framework, especially in Civil law countries, limits the scope for privatization as part of the optimal management of cultural assets. We propose a tradable long-term concession on movable artworks to enhance the incentives of selected private operators to invest in artworks' extraction from public museums' warehouses (i.e., inventory, exploitation, etc.). For fiscally constrained countries, the social and monetary values that derive from public cultural heritage increase compared to traditional exploitation schemes.

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

JEL Classification: H44, H82, Z11, Z18.

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 social 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 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

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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 the 193 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 lack of responses to the survey from relevant Member States may be explained by a structural difficulty in managing collections' warehouses, which lowers the probability that artworks will be visible in the future.

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. The strict regulations of the property transfer of cultural goods owned by government is explained by their peculiar features. Cultural goods have been widely recognized in the literature as multi-dimensional goods (Mazzanti, 2002; Bertacchini et al., 2016; Muriel-Ramirez, 2017), as they pertain to the ideal categories of merit, public and mixed goods. Given the externalities that are generated by cultural goods and their meritoriousness, public intervention is justified.

Italy is a good case study for the development of our model. Given its large and growing cultural heritage, overcoming the problem of hidden artworks would bring to a sizable improvement for this country that faces very tight fiscal constraints. Our work takes Italy

[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 two 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).

as an example to develop a model which could be replicated in other countries with similar characteristics and, particularly, to emerging countries endowed with important cultural heritage.

The 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)—motivates and supports our proposal of a market solution for hidden artworks. In existing markets, collectors are increasingly treating art as a component of their total wealth.[3] 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.[4]

Most of the literature dealing with the issue of the enhancement of museums' collections focuses 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 improve the management of movable cultural heritage, involving private operators. Compared to *traditional exploitation* schemes which operate within the network of public cultural institutions (e.g., exhibitions, exchanges between public museums, merchandising), in this paper we suggest a different approach that relies on the creation of new, *tradable long-term concession* on a single public artwork which may give rise to a regulated market for private and public exploitation of public artworks, while keeping the ownership of considered cultural goods in the public domain.

Building on Xiang (2018)—who proposes a rental market of (private) artworks owned by art investment funds—we argue that the tradable long-term concession scheme may expand the supply of artworks worldwide, thus enhancing the role that art investment vehicles

[3] 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.

[4] 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.

may play. In turn, the interest of private operators in (public) artworks exploitation would enhance the capacity of public museums to extract the monetary value of their cultural property. Though investments in inventory are public goods—similar to exploration of natural resources, a field in which the exploration phase requires substantial investments with highly uncertain results—and, at least in early stages of development, the public sector is likely to be endowed with skills and human resources that are essential inputs of this process, private intervention may foster the capacity of governments to pursue value creation from extracted public artworks. Also, such public-private partnerships may relax technological (e.g., space in museums' warehouses) and financial constraints that determine the hidden artworks dilemma of public museums.

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 public property, several legal and financial mechanisms may warrant the prominent role of government in the protection of the considered goods.[5] In turn, the described market of long-term concessions on public artworks would enhance the asset management of public cultural heritage, as compared to traditional exploitation schemes.

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 discusses our results and concludes.

2 Related literature

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

[5] The 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. 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.

public museums. The authors measure museums' efficiency, among other indicators, by the extent of exhibited collections. This aspect suggests that private business models may enhance the efficiency of the (public) management of cultural heritage.

Probably the most controversial tool that museums may use to face the issue of hidden artworks is *deaccessioning*, which consists in selling—or disposing in other ways—an item belonging to a museum, thus making it unavailable to its audience. Many references to deaccessioning can be found in the literature. Wijsmuller (2017) reviewed the practice of deaccessioning in the European framework, highlighting benefits and challenges in its uptake, and, a few years later, Imperiale and Vecco (2017) compared it to capitalization regulations as means towards greater market orientation in countries within and outside Europe. Di Gaetano and Mazza (2017) studied, in a sequential game, the consequences of deaccessioning on donations. Vecco et al. (2017) analysed how visitors' attitudes towards deaccessioning are influenced by different factors. As highlighted by Vecco and Piazzai (2015), deaccessioning implies a clear trade off. On one side, if it provides new resources, 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's asset management. 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.

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 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).[6]

Another tool which can be deployed to address the issue of hidden artworks, that has

[6] An indirect evidence of this principal-agent problem—the agent being museum managers, typically endowed with better information on collections with respect to their principals, i.e., government representatives or citizens—are restrictions that were enforced to prevent the "unethical" use of its proceeds as a source of short-term revenues in the UK and the Netherlands—e.g., the 2014 UK's Financially Motivated Disposal Toolkit and or the 2016 restrictions on the Dutch disposal guidelines (Wijsmuller, 2017).

particularly developed in the last twenty years, is to foster collection mobility between museums through *lending and borrowing agreements* (Pettersson et al., 2010). In Europe, a first milestone 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 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 considered museum institutions 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—e.g., 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 phenomenon has probably contributed to restrict 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 restrictions to 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) 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 described 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. As a solution to these issues, Xiang (2018) suggests an art rental market for the pieces owned by art funds. The latter would allow investors to benefit from both the investment and aesthetic value of artworks, generating revenues from rentals and reducing maintenance (e.g., storage) costs. Moreover, such a rental market would provide useful data to assess the market value of artworks.

Of course, renting high-value artworks involves a risk of damages and depreciation.[7] To mitigate these risks, the artworks' rental market should be properly 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.[8] Building on the proposal by Xiang (2018)—which focuses on artworks owned by

[7] Potential damages include also any threat to the artist's moral rights.

[8] 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).

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.

3 The Italian case in the European perspective

Italy is endowed with a considerable share of the world cultural heritage. 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.[9] 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 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.

[9] 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 (460) were not (were) owned by the central government.

Despite the provision of the 2004 "Urbani Code"[10] that the Ministry of Culture[11], alongside Regions and other local entities, ought to ensure and oversee the cataloguing of cultural goods, empirical evidence still points to incomplete inventory activities. The lack of inventory is likely to hinder the proper management of cultural heritage goods. For instance, a 2017 directive of the Italian Ministry of Culture[12], that specifically refers to the case of archaeological goods, explicitly prohibits the mobilization of uncatalogued goods. This further limits collection mobility among cultural institutions. 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.[13] 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. Therefore, the most exploited form of exchange of cultural goods between Italian cultural institutions consists of borrowing pieces or collections to be put on display, which however is still far from being a common practice among respondents.

The shortcomings of cultural goods management highlighted by data may be driven by the legal framework. 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 widespread public intervention. Second, cultural heritage is commonly

[10]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.

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

[12]See the "Clarifications on the Circular of The Ministry DG-MU n. 42/2017" (in Italian: "Chiarimenti in merito alla Circolare DG-MU n. 42/2017").

[13]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.

conceived as a strategic asset for the Italian cultural and touristic development. Such features translate into the taxonomy found in the Italian legislation. Particularly, assets belonging to the cultural heritage which are part of State (i.e., central government) property cannot be alienated, prescribed or expropriated.[14] However, 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.[15]

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).[16] 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 (e.g., wardrobe, cafes, bookshop, ticket office, guardianship, etc.) (Bodo and Bodo, 2016; Bertacchini and Nogare, 2014). The Italian government declared that the rationale for this

[14] The article 54 of the "Urbani Code" identifies among such assets—the so called "demanio"—all immovable heritage of historical, archaeological and artistic interest, and the collections of public museums, galleries, archives and libraries.

[15] Article 55 of the "Urbani Code".

[16] 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.

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 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 may indirectly dwarf incentives to invest in 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. On the one hand, Italy has a large known cultural heritage, that grows at an annual rate between 1% and 2% (Vecco and Piazzai, 2015; Vecco et al., 2017). On the other hand, Italy's cultural sector seems to be largely under-funded, partly as a result of public expenditure cuts starting from the 2000s (Bodo and Bodo, 2016).[17] 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.[18] The latter is also the motivation for the decentralization

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

[18] Such an approach is supported by two studies showing that, in Italy, the performance of public museums with financial autonomy or public museums with outsourced administration is higher than private museums (Bertacchini et al., 2018; Cellini et al., 2020). This result may be biased by the fact that most of Italian private museums are owned by the Catholic Church.

to local government of competences over funding and managing cultural heritage (Guccio et al., 2020). Moreover, following the lead of France[19], 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.[20] 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).[21]

4 A model of public artworks' "extraction"

We consider a country in which a sizable amount of hidden artworks lies in warehouses of government-owned museums. Hidden artworks are characterized by two features. First, an expected investment cost (e.g., research, digital cataloguing, conservation, etc.), $c(n) \geq 0$, has to be borne to "extract" n of such goods from museums' warehouses and to make them known and available to different uses—where $c'(n) > 0$ and $c''(n) > 0$. Second, the social benefit of extracting an item of the movable cultural heritage from museums' warehouses is ex ante unknown, ex post publicly observable, and with expected value $V > c'(1)$.[22]

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[23], and $s \in [0, 1]$ is the size of the (global) market that can actually have access to

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

[20] 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.

[21] 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.

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

[23] We can interpret α as the abstract coefficient associated with the monetization of the cultural asset, net of storage and insurance costs. It reflects the physical (or technological) features of the good and preferences of potential users that are influenced by cultural movements.

the extracted item. For example, in the case of artworks that remain in warehouses after being extracted (e.g., properly catalogued), s is quite low. On the contrary, s is quite large if the extracted public artwork is available for use by several possible art operators (e.g., other museums, art exchange funds).

Therefore, we assume that: $s_g \in (0, 1)$ if the extracted artwork is available only for *traditional exploitation* schemes (e.g., by the network of public museums or through existing lending-borrowing agreements); and $s_c = 1$ 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) may rent them from public museums and, possibly, transfer the concession right among them on a secondary market which is regulated by the government. As s represents the market size for (admissible uses of) the cultural good, the assumption that $s_c > s_g$ is quite reasonable. In other words, though the value of s may vary across countries, the mere opening of a wider market through tradable long-term concessions allows all the uses that are admissible by traditional exploitation (e.g., within the network of national and international public museums), but enhances exploitation thanks to enlargement of the (national and/or international) community of (regulated) operators that can exploit the extracted artwork.

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 4.1). 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 4.2.1) and considering the financial relief implied by such exploitation (Section 4.2.2). Finally, we analyze the case in which the government creates a 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).

4.1 First-best public artworks' extraction

In first best, the government maximizes the net social value that is derived by public artworks' extraction, without any second-best marginal cost of public funds:

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

From the first order condition, we get:

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

It is worth noting that, because of the assumptions $V > c'(1)$, it always socially optimal to extract (at least some) artworks from public museums' warehouses—i.e., $n^{FB} > 0$.[24]

4.2 Public artworks' extraction under traditional exploitation

In the real world, governments face second-best resource constraints since they typically rely on taxpayers' money—that involves efficiency losses—to finance public policies, including the cultural policy. In this section, we analyze optimal second-best policies, taking into account fiscal constraints and alternative mechanisms to finance artworks' extraction.

4.2.1 Government investments without market exploitation

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

$$B \geq c(n), \tag{2}$$

where $B \geq 0$ is earmarked budget for investments in expanding the (movable) cultural heritage. The second-best optimization condition is:

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

[24] In our analysis, we abstract from the problem that the optimal n should be an integer.

where $\mu \geq 0$ is the *marginal cost of public funds*—i.e., the additional (monetary) loss that the government faces when it uses public revenues.[25]

It is easy to check that the larger is μ, the lower is the second-best optimal number of extracted artworks n^B. Therefore, $n^{FB} > n^B$ 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 situation of governments that face severe fiscal restraints (e.g., in Italy or emerging countries).

4.2.2 Government investments with market exploitation

In all countries, government investments in the expansion of the movable cultural heritage also generate monetary (or market) 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:

$$B + \alpha s_g V n \geq c(n). \tag{3}$$

Maximizing the net social benefit function (1) under the budget constraint (3), the optimization condition becomes:

$$\frac{1 + \mu \alpha s_g}{1 + \mu} V = c'(n^G). \tag{4}$$

We obtain two results. First, given that $\alpha s_g \in (0, 1)$, $1 > \frac{1+\mu\alpha s_g}{1+\mu} > \frac{1}{1+\mu}$, hence $n^{FB} > n^G > n^B$. The intuition is that the commercial exploitation of public artworks—that takes place also under traditional exploitation schemes—relaxes the government's 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_g and, hence $\frac{1+\mu\alpha s_g}{1+\mu}$ are larger—n^G grows.[26]

[25] Equivalently, μ is the social benefit of an additional unit of public revenues. Technically, it is the Lagrangian multiplier associated to the budget constraint (2), 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.

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

$$\frac{dn^G}{d(\alpha s_g)} = \frac{\mu}{1 + \mu} \frac{V}{c''(n^G)} > 0.$$

4.3 Public artworks' extraction under long-term concessions

The results of the last section highlight the intuitive motivation of a market of long-term concessions for public artworks. If the government is able to design a scheme that expands market exploitation of public artworks—without giving up ownership—it can afford a larger investment capacity to further expand cultural heritage. As argued in the introduction of this Section, issuing tradable long-term concession would expand the capacity of the government to widen the market value of extracted artworks—i.e., $s_c = 1 > s_g$. However, such a scheme "decentralizes" to market operators the choice of the dimension of the investment in public artworks' extraction.

Therefore, the objective function (of market makers) includes only the share of social benefits that corresponds to the monetary value, hence:

$$\max_{n \geq 0} \alpha V n - c(n), \tag{5}$$

where we used the assumption that $s_c = 1$. By the first order condition of (5), we obtain the optimization condition

$$V\alpha = c'(n^M). \tag{6}$$

Two considerations emerge from the analysis. First, a higher expected market exploitability α foster a larger "demand" for investments in artworks' extraction from market makers—i.e., n^M. Second, if the commercial exploitation under traditional schemes is very limited—i.e., s_g is low—and/or the government faces severe fiscal constraints—i.e., μ is large, it is likely that the market of long-term concessions on public artworks would determine a larger investment in extraction compared to traditional exploitation schemes—i.e., $n^G < n^M$. Under the described conditions which characterize small, emerging countries but also high-debt developed countries, the tradable long-term concessions on public artworks are likely to bring significant welfare improvements.

5 Discussion and conclusions

Exploiting the reference case of Italy, in this paper we show how the growth of cultural heritage, together with severe fiscal constraints to public expenditure in cultural policy fosters a widespread problem of hidden public artworks—i.e., items belonging to movable cultural heritage that are stored in public museums' warehouses without a proper inventory. Investments in exploration, inventory and exploitation are essential inputs to let (formerly hidden) public artworks produce any social (or private) benefit.

With a simple theoretical model of public artworks' extraction, we show that market exploitation may play a key role in affording needed investments in extraction from museums' warehouses. However, the traditional schemes—that heavily rely on non-market relationships within a restricted network of mainly public institutions—may determine limited market exploitation. Building on existing proposals of secutirization of (private) cultural goods (Xiang, 2018), we suggest the creation of a tradable long-term concession on newly extracted public artworks as a mechanism to promote private interest in the exploration, inventory and exploitation of items belonging to movable cultural heritage. In turn, the market of long-term concessions on public artworks may relax financial (and technological) constraints that limit the capacity of government to expand cultural heritage. Particularly, we highlight how the securitization process underlying our proposal leaves the ownership of extracted artworks in government's hands.

The proposed solution clearly derives from the experience of financial markets and services. Looking at such experience we highlight the potential benefits for the artwork sector. First, it can create a competitive market boosting incentives of specialized private operators in channeling financial and technical resources to improve the management of cultural heritage. Second, a regulated secondary market of long-term concessions on public artworks may provide needed liquidity to expand investments in art markets, thus improving overall market efficiency. Third, securitization affords risk management techniques which enhance the reliability of private investments in the expansion of public cultural heritage.

Our solution presents some critical issues. First, the uncertainty that characterizes warehouses' features—both in terms of quantity and quality of hidden artworks—may hinder market activation or lead to markets with low competition levels (e.g., high uncertainty can be borne only by few investors, high expected revenues are required) and requires a careful design of the phasing-in process. Moreover, if the government has better information about the average quality of museums' warehouses than private operators, adverse selection may undermine private involvement in the proposed public-private scheme. However, the latter is not likely to be a relevant risk for the "hidden" artworks we are considering in this paper, given the high costs for extraction activities and the fiscal constraints faced by governments. Also, conservation and assessment standards are key tools to control problems arising from adverse selection and moral hazard in the concession contract between the government and the private operators.

Referring to literature on cultural goods, another critical issue is the very peculiar nature of the object of long-term concessions. The availability to the general public is a key argument against deaccessioning of cultural goods. However, tradable long-term concessions differ from deaccessioning in several ways. First, under the long-term concession government retains ownership of artworks. Second, if the government's objective is public fruition, the condition of hidden artwork should be considered worse than temporary concession for private uses. In other words, the tradable long-term concession scheme affords the creation of, at least some, aesthetic enjoyment.[27] Moreover, while deterioration risk, that characterizes both the case in which collections are mobilized or in which they remain hidden in warehouses of public museums without proper enhancement, is not considered in our theoretical model, it is of the foremost importance to stress the entity of the societal loss imputable to hidden heritage that cannot be enjoyed or exploited by any visitor.

The mentioned arguments bring to another critical point. Because of previous considerations and of the specific legal framework of the cultural sector (particularly, in Civil law countries), governments may want to retain the power to exclude from the proposed schemes highly valuable artworks that would emerge from the extraction process. Such clauses could be part of the contractual arrangements between the government and the market makers. Again this implies a risk transfer, from the public to the private sector,

[27] *Aesthetic enjoyment* is one of the dimensions of *cultural capital* as defined by Throsby (2003). When artworks remain in museums' warehouses—without proper cataloguing and evaluation—aesthetic enjoyment can be considered close to zero.

which—if over-stretched—may dwarf the development of the market of long-term concessions on public artworks.

To conclude, the intuition behind our work is that, when properly accounting for all the possible criticalities, a carefully designed concession scheme would improve the government's capacity to extract value from currently underexploited works of art, improving cultural heritage management, with greater societal and individual benefits with respect to traditional schemes.

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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