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Development Tax in France as a Tool for Land Value Capture and Social Equity: Case Studies on Bordeaux and Strasbourg

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Abstract

In a context of severe pressure on public budgets, aging urban infrastructure, and increasing pressures of urbanization, municipalities, and metropolitan regions on five continents are looking at techniques of land value capture (LVC) in order to complement the fiscal tools of taxation. This paper examines how one such LVC instrument can also provide community benefits measured with a social equity lens. The research focuses on the French case of the Taxe d'Amenagement (TA), or development tax, a one-time assessment imposed on new development. The French TA mixes taxation and LVC purposes. After presenting an overview of the French system of LVC instruments and discussing their ability to provide community benefits, we focus on the TA with an in-depth analysis of two field cases in the metropoles of Bordeaux and Strasbourg where the land market is under pressure, prompting public local authorities to intervene. Local practice will reveal two different modes of capturing value (revenue) with different impact, in terms of social and spatial equity.

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Introduction

Land Value Capture Mechanisms: Promoting Public Benefit

Municipalities and metropolitan regions suffer severe and cumulative pressures from increasing urbanization. The concentration of population and commercial growth in urban areas creates costly effects on land consumption and climate change. The mobility and social needs generated by urbanization intensify demand for public infrastructure investment. Such demands strain public budgets at every level of government and their ability to meet demand for costly capital investment, as well as the recurring budgetary requirements to service such needs. In the meantime, tightened availability of urban land and deteriorating infrastructure increase the social gap between neighborhoods and, thus, call for social equity.

Increasingly, jurisdictions around the world are employing techniques of spending and public finance to complement the fiscal tools of taxation for the creation of community benefits such as affordable housing, infrastructure, transit, renewable energy, and public facilities. Beyond direct taxation, local (and state) governments over the last four decades have pursued a variety of land value capture (LVC) policies to meet the increasing demands of urbanization.

Municipalities increasingly find themselves unable to meet the fiscal requirements of serving an intensified urban community through existing fiscal measures alone, introducing land value capture mechanisms for community benefit.

> Notably, as new subway lines, roads, and other public works raise the value of nearby land and real estate, developers and property owners share that publicly generated windfall to help local governments pay for new bridges, transit, parks, affordable housing and other infrastructure upgrades. Land value capture is based on a simple core premise: public action should generate public benefit. (Lourdes and Ehrich Bernstein 2018)

A variety of land value capture mechanisms have emerged over several decades of practice globally. These mechanisms have been identified and analyzed in literature, at international agencies such as UN Habitat or the World Bank, and by global development, finance, and policy advisors.

LVC mechanisms are generally classified according to the origin of the increases in land value due to contextual economic factors (growth, regulations), identified public investment in an area (Hong and Brubacker 2010,), or zoning (DRA 2019). Alterman (2012) distinguishes between the theoretical purpose to capture unearned increments, such as taxes and fee-based instruments, or to generate revenues for specific public service, such as development-based instruments. She underlines a possible confusion at a local level because “both types harness the same source of wealth – the additional value of real property derived from government land-use”. In practice,

unearned increments result from a public decision, legislation, or a public act, while development-based instruments results from an agreement between a public entity and a private landowner or a developer for a joint development project (Aveline-Dubach and Blandeau 2019). They are called "developer agreements," "impact fees," or "planning obligations," and are well known in France as "participations" (Alterman 2012), and in the U.S. as special assessment districts, development impact fees, development agreements, and other mechanisms. Fainstein (in Ingram and Hong 2012) acknowledges they aim to share costs between landowners or developers and the public entities, but scarcely contribute to collective benefit or provide equity.

A large range of instruments are implemented in different contexts (Ingram and Hong 2012; Alterman 2012; Smolka 2013; Muñoz-Gielen and Cuadrado 2015). Examples abound. Transport infrastructure such as commuter rail, bus rapid transit, subways, and roadway improvements are routinely financed by various land assessments. Financing costly urban public transport like the Great Parisian Express train or London Crossrail project typically include LVC mechanisms (see Aveline-Dubach and Blandeau 2019; Pouillaude 2011).

LVC mechanisms assert public benefit in sharing ("capturing") a portion of real estate values created by public action, rather than private investment. Proceeds, either in the form of revenue collected from landowners or community facilities constructed by the private developers, are used to support public purposes. Public benefit goals are justified in two ways. Some refer to the share of collective costs, based on the principle of unearned increments, referring to the ground rent theory and the undue land price benefit for landowners (following Henry George's theory, see for instance Ingram and Hong 2012). Others consider planning or public works decisions which directly affect land prices (see Hendricks et al. 2017; Hong and Brubaker 2010).

U.S. constitutional case law clearly establishes a direct link for development impact fees. The principle of reasonable relationship, or "nexus," is established when local governments impose one-time fees on new development projects to help defray the cost of meeting needs generated by the new development. Examples include increased demand for water, sewer, transit, schools, affordable housing, and public facilities (see Annex 5). France follows these principles in the case of development taxes and fees.

While the concept of public benefit lies at the core of LVC mechanisms, little attention has been paid to the social equity of such instruments (Fainstein, in Ingram and Hong 2012). By contrast, principles of social equity are routinely applied to taxation schemes and discussed by several economists like Ricardo or Mill. The equity of taxes like the income, property, value-added, or sales tax is regularly evaluated (Youngman 2016). The burden of the tax is generally compared to the contributors' income. A "good" taxation schedule is progressive with regard to personal income (Musgrave 1974; Young 1994). A "bad" taxation schedule is regressive: high income earners pay less relative to their income than low income earners. Following this principle, French President Macron recently decided to abolish the "historical" occupational tax (*taxe d'habitation*[1]), claiming inequity of the tax.

[1] The tax is paid by occupant, be him owner or lender, according to the administratively stated rental value of the home.

Land value capture for community benefit is defined as mechanisms by which government agencies – municipal, state, national – capture a portion of increases in land value caused by, or associated with, public investments in land and public land use regulation. The equity issue follows a similar pattern as discussed for other taxes. In the case of LVC, equity is advanced by "capturing" a (financially feasible) portion of the increase in value of private development made possible by public investment (e.g., infrastructure) and zoning. That "captured" increment of value is in turn invested in a variety of public benefits. Such public benefits include infrastructure, schools, parks, affordable housing and other facilities, thereby offsetting demand created by the private development. When private development results in increased burden for lower income households (e.g., displacement of long-time residents, increases in housing costs), LVC investments contribute directly to social equity. The process, inspired by GDFRR (2018, p. 9), is illustrated as follow:

- Infrastructure improvements (and increased density or changes of use permitted by zoning changes) increase value and development potential of land;

- Landowners, and developers, earn profit from land improvements;

- Part of private developer's profit is captured by the City through LVC instrument;

- Captured value generates funds for public spending and investment; these funds are invested in infrastructure, affordable housing or other public benefits (e.g., schools, parks, libraries, public safety facilities); and

- Such investments in the urban fabric quality derived from LVC mechanisms provide benefits to landowners but also to visitors and lower income residents of the area who are adversely affected by market rate development, or who are financially unable to pay for needed services and facilities.

A wide range of government actions at every level influence the value of privately-owned real estate. Although it is not our purpose to discuss the reality of these effects, we underline the main actions which are generally accepted, while still discussed, by literature and practice. Following Localization Theory (see Fujita and Thisse 2013, for an international summary) they include infrastructure investments in public transport and road improvements, as well as mass transit, renewable energy and information technology networks. They include development works in water, sewer, and electrification made necessary for new settlements. They finally include the development (or the requirement from private developers) of public facilities which contribute to social welfare such as parks, schools, libraries, health clinics, open space, affordable housing, and public safety facilities for police and fire.

Additionally, government control of land use through zoning codes and real estate development entitlement processes may increase residual land value. Through zoning, municipalities increase the residual value of land by granting intensified land uses, greater density, or more valuable uses (for example, shifting from handcrafting to residential building). The power of zoning to create real estate value is especially strong in urbanizing market areas with growing populations and resultant demand for residential, commercial, manufacturing, and office real estate – a direct result of regulation.

Analyzing LCV according to efficiency and equity criteria is a way to go beyond common understanding which focuses on the political issue or the public budget equilibrium (Alterman, 2012; Medda, 2012). Our purpose is to evaluate LVC instruments in that way, looking on one hand at LVC rationale, and on the other hand examining development strategies and practices. Our approach helps informs policy makers about developers' strategies and the possible deleterious impact of private development on low income households, and land policies (LVC) that help redress such inequities.

Applying Principles of Social Equity to the French Taxe d'Amenagement (TA) as an LVC Mechanism

These LVC mechanisms have been used extensively over more than four decades of practice on five continents. The following examples underline the intended community benefit which supports the instrument:

- Special assessment districts (SADs), where property owners within a geographically delineated area of a city pay additional annual property tax assessments to support public improvements such as business improvement districts, transportation and circulation improvements, intensified and modernized infrastructure, increased information technology capacity, and other investments, of direct benefit to those property owners paying the assessment;

- Transfer of development rights (TDR), where municipalities allow developers on noncontiguous sites to transfer development rights for increased density in exchange for monetary payment. Such TDR strategies can steer density to desirable locations, such as those areas near transit and modernized infrastructure, as well as provide revenue for otherwise land-locked parcels unable to benefit from increased zoning densities, such as historic landmarks, religious or educational institutions;

- transit-oriented development (TOD), where municipalities and metropolitan transit agencies collaborate in pooling and zoning land around transit rights of way and transit stations to increase densities and land values and provide opportunity for community benefits such as inclusionary zoning for affordable housing at or near transit stations;

- density bonuses, where jurisdictions grant increased density to private landowners for intensified development, in exchange for a set aside pledge for affordable housing and other community benefits;

- charges for building rights, or "linkage fees" or development impact fees where developers pay the municipality that controls zoning for additional density or development rights. Such charges fund infrastructure and other public improvements intended to meet additional demands generated by such development densities. The French TA program examined in this paper could be classified as one of these instruments.

Considering LVC as an additional instrument of paying for public benefits from private development activity, we propose that measures of social equity should be applied when designing, implementing and evaluating such measures. In line with Fainstein's investigation on "Land Value Capture and Justice" (Ingram and Hong 2012), this paper explores the potential to produce social equity benefits from one specific French LVC instrument implemented in 2010: the Taxe d'Amenagement (TA), a one-time development impact tax for new urban development projects. In France, LVC instruments have been regularly discussed, considering the legitimacy and the financial output, but direct tools have never been implemented. Once again in the last decade, the increasing gap of land for social or affordable housing in large cities addresses the tradition of absolute property rights and the equity role of LVC instruments. In market rate development, the TA could help redistribution between demand for affordable housing, created by real estate development, e.g., a shopping mall, hotels, office buildings, hospitals, including zoning which entitles such real estate development, and the mitigation required to meet that demands. The principle of "nexus" (see US Supreme Court Case in Annex 5) is also tempered by economic feasibility. Does the required offset (provision of affordable units, payment of a fee), render the market rate development economically infeasible? This requires an assessment of the economic impact and feasibility of proposed LVC measures on a given project, or type (prototype) of projects.

Looking at the French TA, our research explores the extent to which TA may be used as a tool to promote social equity. We examine the implementation of TA in two cases—Bordeaux and Strasbourg—to provide insights on the extent to which revenue collected by these two jurisdictions produced community benefits for lower income households and communities.

A first issue is to investigate how the French case can cope with difficulties of defining a fair land value assessment and the boundaries of designed areas for LVC, without considering the perception of equal treatment by property owners. A second issue is to identify situations or conditions of development which could contribute to collective benefit.

The report is structured in five sections. The first section investigates land value capture instruments used in France according to the strategy of public institutions (what, when, how much to capture) and the redistributive effects on citizens (who will pay and who will benefit) in terms of location and income. In the second section, a focus is on one fee-based instrument which has been recently created in order to capture land value increments in new development projects. A national survey gives a general understanding of the tax decisions among municipalities. It introduces the relevance of two case studies which are examined in the following sections. The third and fourth sections examine the empirical field studies in the cities and metropolitan regions ("communes and metropoles") of Bordeaux and Strasbourg and correlate the key issue of the provision of social equity in an urban setting with revenue generated and public improvements funded, through the land development tax. The report concludes with some challenges for LVC implementation, social equity benefits, and the need for additional research and understanding.

Legal Framework for Land Value Capture in France

France has a long history of land value capture through two major instruments: property taxes which are recurring taxes on property values, and urbanization fees – one-time fees in the form of a development tax (typically collected to pay for infrastructure, affordable housing, other community benefits) or development participations (contractual agreement described by Booth in Ingram and Hong 2012). Most LVC instruments are decided by and attributed to local authorities, which are multiple in France: Region, Department, Commune, and Public Establishment for Inter-municipal Co-operation (EPCI), or a Metropole.[2]

France also has an extensive history of inclusionary housing policies. It is essentially a national policy which has been developed in two directions: an incentive support per units to build affordable housing allocated according to an agreed rental or selling price and several individual aids granted per households according to their income. Conditions are nationally and uniformly fixed. Only recently, the Ministry of Housing fixed three different conditions applying to zoning reflecting the territorial level of unsatisfied demand for affordable housing. Since 2000 (Law n° 2000-1208 for Solidarity and Urban Renewal, article 55), municipalities are given some responsibility in housing policy with a requirement to provide 20 percent or more of their total housing as affordable. The law provides both incentives if municipalities achieve their goal in time and penalties if municipalities do not achieve the required goal within a fixed length of time. In 2017, 1,222 municipalities did not reach the goal, and 683 paid penalties totaling 71.9 million euros. Contrary to what exists in the United States, affordable housing obligations cannot be considered an LVC instrument in France as it relies on the public budget and is not spatially targeted. A few projects developed by municipalities on public lands provide some mitigation for affordable housing developments through urban planning.

Annual property taxes were designed long ago in France (the so-called "contribution foncière" was introduced between 1790 and 1798) in line with the theoretical principles disseminated by Henry George and Charles Tiebout that landowners have to pay for the facilities and services provided by public authorities. They are paid by all land and real estate owners without consideration of the origin of the value rise. Actually, property taxes are a major source of revenue for French Local authorities (35-40 percent of general fund annual revenue). They mostly contribute to finance recurrent operating costs (local public services) and account for less than 20 percent (on average in 2017 with a large discrepancy between localities) in capital costs (infrastructure).

Apart from annual property taxes, several additional land value capture methods have been implemented which focus on a specific part of the value increase, or a specific origin. Some of them are decided by the central government (which is also the national government in a sovereign state such as France). Others are voluntarily decided by one or another level of local authorities, according to their entitlements. In the meantime, planning fees were developed under contractual agreements between local authorities and developers, operators, or landowners. In 2010, Law n°

[2] In France, for any kind of taxation, National legislation settles the tax base and the Treasury (national administration) collects the taxes.

2010-1658 reorganized the legal framework under which urbanization tax and fees could be assessed at a local level. The purpose of these trends is twofold: to capture the land value created by public investment and to prompt landowners to build in dense areas or to preserve natural land in the suburbs.

Apart from the consistency and relevance of the tax base, which is on the political agenda, their equity is in question: lower income households would pay a higher percentage of their income in the taxes and fees than higher income households (Conseil des prélèvements obligatoires 2010). It refers to progressivity of taxation as described in academic statements and discussions (Musgrave 1974; Youngman 2016; Bonnet et al. 2015). But the question is scarcely analyzed and documented. The overview of the French system of land and property taxation aims at underlining to which extent the design of the instrument operates some land value capture and additionally to redistributive impacts.

The matrix in Table 1 identifies the main characteristics of instruments. Instruments are classified according to the frequency of the burden: annual taxation or one-shot taxation or fee. There is a discussion about the nature of annual taxes. They generally finance recurring public costs and diverge from the philosophy of such economists who believe LVC instruments refer to increments due to infrastructure/capital costs. Others (following fiscal federalism theory) acknowledge that the land value is also determined by the amount and diversity of public or collective services provided at a local level. The tax is then a counterpart of public services and costs. Looking at one-time taxation or assessment, linked to an event in the property cycle, a second classification is then made according to the nature of the event which increases the land value and initiates the increment captured by the government, e.g., change of zoning or density, transfer of property, change of constituency by new development, or redevelopment.

An inclusionary housing requirement is not included in this table, which focuses on the fiscal system. Development participations are not included as they are negotiated project by project at a local level. Two types of contracts are defined by the law:

- The comprehensive development zone (*Zone d'aménagement concertée* - *ZAC*) is an old contractual model which gives a lot of power to the developer (expropriation rights), under strict public conditions, requirements, and control. The developer is systematically required to finance part of public investment in the area. The public purpose is important (for economic, social, or environment improvements).

- The partnership urban project (*Projet urbain partenarial* - *PUP*) is a recent contract which enables local authorities to charge a private landowner for public infrastructure on a private project. The financial objective has priority over the socio-economic impact.

In both cases, even though negotiations depend on local context, they have to comply with three requirements: (1) a direct link should be made between facilities charges to the developers and the real needs of the new buildings; (2) fees charged to the developers should be proportional to the use made of them by the new buildings; and (3) the charged public infrastructure must be supplied.

The matrix in Table 1 presents the nature of the land value capture instrument, the beneficiaries, the tax base, and the tax rate(s). It focuses on the rationale of each instrument, indicating the potential to capture land value increases. The level of taxation depends on the tax base assessment and the tax rate. In some cases, reductions have a strong distortive impact on the final ability of the tool to recover land value increases, but they are symptomatic of how legislation provides for the public interest in practice.

The matrix opens the discussion on (a) the ability of the instrument to recover land value increases and (b) community interest purpose, without considering the actual effect. This last point will be examined in our case studies in Sections 3 and 4, examining the use of the French Taxe d'Amenagment (TA).

Taxation on Land Properties and Land Value Capture

The purpose is to examine how land value is evaluated in French taxation and to discuss the ability to refer to land prices increments. There is not a unique evaluation of the tax bases for all taxes. Some are fixed by the Central administration according to a standard value, others are evaluated according to the market price.

Taxes Assessed on a Standard Value

The two following taxes, annual Property Taxes and Development Taxes, are assessed on values determined by the Central administration. They are local taxes as long as the tax rate is decided by local authorities and the receipts attributed to them. The tax rate is then a political decision which includes several objectives, one of them being the wish to capture land value increments for public benefit.

- Fiscal bases of annual tax on land and real estate properties are assessed on a "fair value" per meter squared of the "annual rental revenue of the property" (*Valeur locative cadastrale*). The Central administration assesses this value for each kind of land use (residential, industrial, warehouse, et cetera) borough by borough, referring to a standard methodology and taking into account local conditions, discussed with local authorities in joint fiscal committees. These rules lack operational application as standard assessments have been fixed in 1970 but have been revised nationally without revaluating the spatial differences or the type of building differences. A revision is implemented gradually for housing and industrial units since 2017 including a yearly update following changing uses and a general update every three years. Problems stand in the cost of revaluation and the change of the bill for taxpayers. It is to be underlined that the philosophy of the assessment, be it or not operative, is not to take into account the immediate/short term increase of value, but the long-term increase. We can guess that land revaluation due to infrastructure is considered (if the revision is to be effective). Reform is in progress. Concerning taxes on property transactions, fiscal bases are assessed according to market prices (estimated or recorded).

- Fiscal bases of development taxes are also standard values per meter squared, fixed by national legislation for all kind of buildings. But there are only two different values: one for the Parisian region and one for other regions. For these taxes, values are revised every

year according to the building costs index. In 2019, standard value is 854€/m² in the Parisian region and 753€/m² in other regions. The standard value is supposed to reflect construction costs and does not refer to land prices. For example, in France housing construction costs are close to 1500€/m² (land price excluded) for medium standard collective housing (flat) and 1000€/m² for a single-family house. The standard base (753€ or 854€/m²) is then about 50 percent of the real costs in dense areas.

Taxes Assessed According to the Market Price (Estimated or Recorded)

Taxes on property transactions are assessed on the real market prices. A very small part of these taxes benefits local authorities. A distinction should be made between taxes on capital gain and registration taxes.

- The tax on capital gain is based on the difference between the selling price and the purchase costs of the property. It appears as a tool to capture value, even if the tax benefits the central government without consideration of local conditions or public investment in infrastructure. In practice the valuation is influenced by the reduction of the tax rate according to holding period (only applicable for the national tax on real estate capital gain) which is used as an incentive for the owner to sell. It is to be stressed that the rate and holding period are regularly changed according to short-term government interest and so is unclear and counterproductive.

- A tax on the first sale of unbuilt land that has been reclassified as buildable can be decided by local authorities (as an option). The base is similar to the base for tax on capital gain, without any reduction. The philosophy of the tax is typically coherent with land capture value: changing the constructability rules in the master plan generally leads to evolutions of prices.

- Registration taxes (municipal and departmental) are assessed on real transaction price without reduction. They benefit local authorities. In the case of a professional purchase, VAT is applied, and the benefit goes to the central government. The purpose is exclusively financial. For example, it is one very important source of revenue for departments: 17 percent of operational revenues in 2017. The link with value capture is void as department expenses are focused on social supports.

- The wealth tax on real estate is an annual central government tax assessed on estimated market price of residential real estate properties per household. It used to include all properties before 2018 (like industrial properties, boats, arts, bonds, or other financial assets). The Finance Act for 2018 (law n° 2017-1837, art. 31) limited the bases on land and real estate properties over 1.3 million euros, except professional properties and forest and agricultural properties, with a 30 percent reduction for principal residence. Landowners have to declare their properties value to administration. Every year, they have to do the assessment at the current value, and though take into account any land value increment. Evaluation is made by any means, with or without the recourse to a professional. Central administration will only control the assessment. Although tax

revenues vary with land prices, it is designed as an income tax and has no LVC purpose. We will not consider it in our research.

Community Benefit Purpose

Notwithstanding the base assessment, public authorities can choose the level of taxation in order to either capture land value increases or preserve community interest. French legislation offers several possibilities which considerably reduce, or orient, the object of the taxation. It is especially the case with local taxes where the tax rate and reductions are decided by local authorities within a frame identified in the matrix.

For each local tax, local authorities have a large range of rates to choose from, except for the tax on property sales. The local council fixes the rates annually which then apply for all taxpayers without differentiation. The way a rate is fixed by local council is diverse and still unclear, following financial strategy, socio-political strategy, electoral time/cycle, or historical trend. It is the purpose of these case studies to investigate the rate choice for development taxes.

> *A civil servant in a Paris metro area city explains that the city decided to implement an Increased Development Tax with two purposes: the first was to get some additional funds to finance infrastructure; the second (maybe the more important) was to dissuade builders to build in the City (as the City Council would like to preserve an economic diversity of residents and low prices). A survey in Capital Region corroborates the fact that increased tax rate has been implemented in some places in order to orient construction, to limit densification for instance.* (Cocquière and O'hanna 2018)

Local authorities can select reductions or exemptions in a range of legal possibilities offered by the national law (law of finance). A matrix cannot give a proper overview of the range of possibilities as they are complex and vary considerably between taxes. In addition, they often vary each year in order to follow government policy priorities. During the last decade, several reductions are valid for social or affordable housing and for environmental preservation. Reductions or exemptions scarcely concern places (according to the principle of equity among taxpayers).

Development taxes were reformed in 2010, enabling municipalities to meet new demands, especially social housing, and to vary tax rates by locale accordingly. They are levied for a specific project and directly connected to local investment. They provide a sound case for land value capture analysis and will be examined in the following section.

Table 1: French Land Value Capture Instruments (Inventory in July 2018[3])

Name	Definition and example of how it is used	Beneficiary	Base	Rate	Receipts (in 2017[4]) B: billions, M: millions
Along the development process: Annual property tax					
Annual taxes on land and real estate properties - tax on land owned by business companies included (*Taxes annuelles sur la propriété bâtie ou non bâtie* –et *contribution foncière des entreprises*)	• Two taxes paid by landowners on unbuilt land or built properties • Generally understood as the counterpart of local services	Local authorities: Department, communes and EPCI	Estimated rental value (cadastral value) established by national administration according to the nature and quality of the land and real estate; a fixed rebate (20% for land properties and 50% for real estates) takes into consideration maintenance costs	Fixed by Local authorities with a maximum rate of 2 to 2.5 previous year national average rate	41.4 B€
Additional tax on unbuilt properties (*Taxe additionnelle à la TFPNB*)	• Tax concerns all unbuilt land and rural land with new buildings and outbuildings • Since 2011, it is applied in order to compensate the removal of departmental and regional taxation	Communes and EPCI	0.8 * estimated rental value (the same value as above)	(Departmental rate + regional rate in 2010) *1.0485	
For the record: Wealth tax (*Impôt sur la fortune)*	• Paid by owners on the patrimonial properties • An ideological debate	Central government	Current Value, evaluated by the landowner	Established nationally: progressive rate: 0, 0.7%, 1%, 1.25% and 1.5%	5 B€

[3] The inclusionary housing requirement is not included in this table, which focuses on the fiscal system.
[4] Source: official Budget statistics.

Name	Definition and example of how it is used	Beneficiary	Base	Rate	Receipts (in 2017[4]) B: billions, M: millions
For the record: Office property tax in Parisian region (*Taxe Spéciale sur les Bureaux en Ile-de-France*)	• First created to limit offices in the center of the Region • Recently revised and increased to finance Great Parisian Express train	Central Gov., Parisian Region, UESL (Union of Social housing companies) et Société du Grand Paris (entitled to build the Grand Paris Express metro)	m²	Established by national administration: Standard value/m² varies with the nature of offices (business, commerce, crafts, etc.) and the zoning (central or peripheral zones)	0.7 B€
Extension of property rights: optional property tax, decided by local authorities					
Special increase of base of tax on land properties when the unbuilt land has been reclassified as buildable	• On option decided by Local Authority • Typically created to encourage landowners to build the land	Communes or EPCI	0.8 estimated rental value plus1to 5€/m² for the communes concerned by the vacant house taxation (the list is given by the State) plus 0 to 3€/m² for others	Same local rate voted for tax on land properties	
Extension of property rights: Tax on a property transaction (or transfer)					
VAT on land and real estate purchase	For corporate purchase only (see registration fees for non-corporate purchase)	Central government	Real purchase price	Fixed by the State: 20% or 10% or 5.5% according to the nature of the real estate or land	12.5 B€ (2014)
Inheritance tax on inherited properties (*Droits de succession*)		Central government	Current value (estimated by a lawyer), with reductions according to family relationships	Fixed nationally, the rate is progressive with the capital value	10.6 B€

Name	**Definition and example of how it is used**	**Beneficiary**	**Base**	**Rate**	**Receipts (in 2017[4])** **B: billions, M: millions**
Tax on real estate capital gain (*Impôts sur les plus-value immobilières*)	Regularly revised, alternatively to stimulate the real estate offer or to capture land value increases	Central government	Real selling price minus buying price (reductions and exonerations are regularly fixed and changed by the State)	Fixed nationally: 2 to 6% according to the holding period, the rate is fixed by the State and the same everywhere	5.3 B€
Tax on high real estate capital gain (*sur les plus-values immobilières élevées*)	Symbolic	Guaranty funds for rental social housing (*Caisse de garantie du logement locatif social)*	When the declared selling price minus purchase price is > 50,000€	Fixed nationally: 2 to 6% according to the capital gain	not document-ted
National Tax on the first sale of unbuilt land that has been reclassified as buildable (*Taxe sur la première cession à titre onéreux de terrains nus rendus constructibles*)	Typically created to capture land value increases resulting from new zoning or regulation	Funds for young farmers setting up	Real selling price minus buying price	Fixed nationally: 5 or 10%, progressive rate according to the capital gain	12 M€
Local tax on the first sale of unbuilt land that has been reclassified as buildable (*Taxe forfaitaire sur la première cession à titre onéreux de terrains nus rendus constructibles*)	• An option decided by Local Authority • Typically created to capture land value increases resulting from new zoning or regulation	Communes or EPCI	Real selling price minus buying price	Local authorities' decision: 0 or 10%	16 M€
Registration Fees (*Droits d'enregistrement*)	For non-corporate purchase only (see VAT for corporate purchase)	Department and commune	Real selling price	Local authorities' decision: 5.09% to 5.8%	14 B€
Development phase: development taxes					

Name	**Definition and example of how it is used**	**Beneficiary**	**Base**	**Rate**	**Receipts (in 2017[4])** **B: billions, M: millions**
Development Tax (*Taxe d'aménagement*)	Paid by developers (corporate or individual) when they get the building permit	Local authorities (communes, department, Parisian Region)	Standard value per built m²: in 2019 Parisian region 854€/m² - other regions: 753€/m²	Local authorities' decision: [1 to 5% (communes) plus 0 to 2.5% (département) plus 0 to 1% (Parisian region)]/the rate can vary by zones	0.9 B€
Increased Development Tax (*Taxe d'aménagement majorée*)	Designed to recover infrastructure costs in a special area	Commune or EPCI	Standard value per built m²: in 2019 Parisian region 854€/m² - other regions: 753€/m²	5 to 20% (rate decided by communes on special zones). The increased rate is supposed to be justified by infrastructures expenses	
For the record: office creation tax in Parisian region	Created to limit offices in the center of the Region	Parisian region	m²	Fixed nationally: Standard value according to the nature of the premises and the zone (value is different from the one fixed for Office property tax)	93 M€

The United States as Reference for Comparison: Summary of Legal Framework for General Taxes, Land Use Zoning, and Development Impact Fees

We summarize below the legal framework used in the United States to support property taxes, land use zoning actions (regulatory), and development impact fee (revenue) actions by local governments to support land value capture mechanisms as they pertain to affordable housing.

In the United States, municipalities have broad powers, called police powers, to "promote the general welfare". Local government police power extends to law and rulemaking authority of cities and counties to zone land, levy general taxes, use local taxpayer dollars to build and maintain infrastructure and public facilities, and other activities that serve the general population. Taxes are viewed as broadly available to local government under their "police powers", their power to govern for the purpose of promoting general welfare, and funding services, infrastructure, affordable housing. When levied, such taxes are typically used to pay for annually recurring expenses of services and administrative costs. Taxes or user fees may also be pledged to bond financing to pay for capital costs of projects such as construction of new schools, public transit, roads, infrastructure, and community facilities. Operating costs for such facilities are paid from annual renewing tax revenue.

More narrowly, municipalities are empowered to levy impact fees on development when a reasonable relationship, or nexus, can be shown between demands generated by development activity and the use of fees on such development to mitigate those demands. Examples of such one-time development impact fees are water and sewer fees, transportation fees, park fees, school fees (for new development, real estate taxes are the main revenue tool in the U.S. to fund the operation of schools), libraries, parks, and affordable housing. For development impact fees it is critical to quantify the amount of the impact, for example, the cost of providing sewer connections per square meter of office, hotel, residential, or industrial development. Funds must be used to mitigate the impact, such as building new sewers, roads, schools, or affordable housing.

In Annex 5, we review in detail U.S. constitutional case law for police power and nexus fees on development. We also review important recent law in California upholding the police power of cities to condition private market-rate residential development on the provision of a percentage of affordable housing units ("inclusionary zoning").

Rationale for the Development Tax in French Public Finance and Law

The development tax "*la taxe d'aménagement*" (TA) was created in 2010 by Law n° 2010-1658 in order to supersede several previous taxes, one of them being the former development Tax "*Taxe locale d'equipement*" (TLE). The objective was to simplify the local tax system on development and make it more understandable to policy makers and developers. Also, it seeks to recover more funds to finance new infrastructure and strengthen the link between public costs associated with new development.

French policy promotes the philosophy of land value capture and focus on landowners' contributions, which have long been said to be low and unfair, and contradictory to public benefit.

The TA provides one measure to meet infrastructure capital requirements. First, public spending is exploding and public deficit growing. In particular, local budget control is a priority for the French government. National government grants to local authorities are shrinking. It is an imperative to find new sources of local government revenue while infrastructure requires a large capital investment by the public sector. For example, the budget of Grand Paris Express has increased 50 percent up to 42 billion euros between 2013 and 2020, but tax revenues have not increased by that much. Second, in attractive cities (metropoles or touristic cities), property taxes appear low in comparison with the increased land prices and can contribute to speculative strategies from landowners. Especially, landowners will prefer to keep the land vacant and wait to sell it at a high price, working against the need for affordable housing. Such practices artificially shrink the supply of land for (residential) development and increases prices (and rents) accordingly.

In such context, the question is to address the budgetary shortfall, guarantee the socio-spatial equity, and provide public services (for example, in the development of affordable rental housing) to the poorest.

In the meantime, a large misunderstanding of the impact of these taxes and fees leads to contradictions and distortions in the public decisions, as have been underlined with the additional land tax on unbuilt buildable lands (Guelton and Leroux 2016). In particular, the tax level is difficult to correlate to public spending, and the income of the contributors and beneficiaries is scarcely considered.

Regarding the objectives of justice reported in the literature (Fainstein in Ingram and Hong 2012), the in-depth analysis of the French *'taxe d'aménagement'* (TA) represents an empirical case study of land value capture implementation in different urban contexts, each with varying geographic and socioeconomic effects.

This paper presents how the French TA is administered. We further provide an overview of national outcomes of the TA. We introduce our choice to select field cases to examine the issues of socio-spatial equity. Considering the wide discrepancy among more than 36,500 French municipalities, the two cases provide valuable answers from an operational point of view. The cases also reflect some situations which are common in several cities, thereby providing guidance for LVC instruments such as TA in redevelopment areas.

Administration

Presentation of the Administration of the Development Tax (*taxe d'aménagement*)

The French Development Tax (TA) is a local tax adopted and collected by local authorities and assigned to the local budget. Three levels of local authorities are entitled to levy the tax: municipalities, departments (which are local governments), and the Parisian region (or national capital region). It leads to three additional tax levies, which may be levied on each development.

Who decides?

The TA is enforced by the law in municipalities which have implemented a local city plan (92 percent of the French population covered), and in large cities with the statutory

designation of metropolitan areas[5] (Aix-Marseille Provence, Bordeaux, Brest, Grenoble, Lille, Lyon, Montpellier, Nancy, Nantes, Nice, Rennes, Rouen, Strasbourg, Toulouse and Grand Paris Metropole, following Law *de modernisation de l'action publique territoriale et d'affirmation des métropoles* called "*MAPTAM*" of 27 January 2014 and Law *portant organisation territoriale de la République* called "*NOTRe*" of 7 August 2015). In other municipalities, the TA is decided by the City Council.

In France, there are several legal statutes of local authorities. The proximity level – municipality (*communes*) – can devolve power to a Public Establishment for Inter-Municipal Co-operation (EPCI) through a qualified majority voting. Urban planning is under the compulsory jurisdiction of Metropoles since 2014, and of EPCI in all cases after 2017.

At the Departmental level, the TA is instituted by the Departmental council. It is then applied in the overall municipalities of that Department's authority.

Finally, in the Parisian region, an additional tax rate is enforced by the Grand Paris Metropole Council and specially allocated to the transportation infrastructure financing.

We will focus on decisions at the proximity level (also referred to as municipality or *commune*), which also decides if a higher tax rate is applicable in connection with infrastructure decisions.

What for?

The legal requirement (Town Planning Code, article L 331-2 and ministerial circular 18 juin 2013 NOR: ETLL1309352C) states that revenues from the municipal and inter-municipal part of the TA have to be spent in the capital budget.

The Parisian TA aim to finance transportation infrastructure (capital costs), and departmental tax revenues must contribute to environmental protection (recurrent costs). In the case of municipalities, revenues are added to the capital budget of local authorities, regardless of their investment uses (infrastructure, debt reimbursement, and other investment projects). There is no clear definition of the range of infrastructure to finance, apart from a local authority's liabilities as reported in local urban plan. The budgetary principle of universality allows them to spend the revenues in any investment, notwithstanding the amount of revenues.

This contributes to a lack of knowledge of the use of the TA. It suggests municipalities can pursue different purposes, and it does not give any key understanding of the actual impact. Our case studies shed light on these questions.

Who pays the tax?

The TA is paid by the recipient of the building permit. In most cases, it is the landowner, be it a final occupant of the premises or an intermediary company which develops and builds the project. The burden of the tax is shared differently as an intermediary company internalizes

[5] See the map in annex 2.

the TA cost in their budget, while the final occupant considers the TA cost as a counterpart of their property value.

Considering the size and nature of the project, looking at some U.S. examples, we can make the hypothesis that some redistribution of the burden of the TA could be negotiated with developers and contribute to social equity.

The TA is paid in two installments: 12 and 24 months after receipt of the building permit. If the construction is abandoned, a repayment can be done. The annual building permits and the annual amount of tax revenues are then unevenly spread over time. So are the final public costs. Empirical analysis may correlate land values with public action (see DRA studies referenced above), however direct causation is more difficult to establish between land value increase and public actions such as rezoning or investment. Case studies might give some illustration of the impact of time.

Who collects the tax?

The TA is collected by the central government administration (Ministry of Finance), which transfers the total amount of revenues to beneficiary local authorities, net of management costs (three percent).

When EPCI/Metropole is entitled to levy the TA, it shares all or part of the revenues with municipalities, according to agreed conditions (Town Planning Code, article L 331-2). This depends considerably on the nature of cooperation among the jurisdictions and the way infrastructure liabilities are shared among municipalities and EPCI. In order to fix this revenue share, Communes and EPCI generally sign a transfer convention. This may result in inequitable distribution of the TA revenue among jurisdictions.

Tax basis

The TA is assessed based on the law (see **Rationale for the Development Tax in French Public Finance and Law**) for new construction, rehabilitation, and expanding existing buildings, including any facilities requiring a building permit and some investment such as parking. The tax base is then the number of new square meters as mentioned in the building permit, evaluated by the law up to 854€/m² in Parisian region and 753€/m² in others, for 2019. The assessment levels the questions of land value correlation and social equity (see discussion on equity).

Tax exemptions and reductions

It is quite common in French fiscal practice to amend the fiscal impact by means of exemptions and reductions. Some are decided by the law and applied for by each municipality. Others are decided by municipalities, as an option. The purpose is social in many cases or aims to spur local development. Some are simplification measures.

The following situations benefit from a national tax exemption:

- small surface less than 5 m²;
- public facilities or building for public purposes;

- residential buildings supported by a subsidized loan for the financing of social rental housing (call PLAI)[6];
- farm buildings;
- identical reconstruction of a building destroyed less than ten years ago; and
- constructions under 5 m².

In addition, a unique tax allowance of 50 percent applies to:

- the first 100 m² of principal residence;
- residential buildings supported by public subsidies apart from PLAI;
- industrial premises and handicraft workshops;
- commercial warehouses; and
- paid parking.

An exemption of the municipal portion of the tax exists when the project pays betterment fees under contractual agreements as PUP or ZAC (see Legal Framework for Land Value Capture in France).

Departmental and local authorities can decide additional exemptions as an option, each of them applying in their own territory. Thus, they can totally or partially exempt:

- residential buildings supported by public subsidies (as value-added tax reduction, social lending);
- industrial buildings, commercial premises and workshops;
- heritage listed buildings;
- additional parking space; and
- health houses (for permits allowed after 2017).

As long as each municipality fixes the exemption without looking at what is done by other municipalities, it results in very different impacts and raises the issue of border effects and possibly territorial equity, that is, areas adjacent to redevelopment projects may experience increases in value without contributing any payment from their enrichment.

Tax rate

The tax is imposed by local authorities, departments, and the National Capital Region.

Each level of local authority concerned can decide its own tax rate within a special range designed by the law: National Capital Region can decide a tax rate from 0 percent up to 1 percent and departments can choose between 1 to 2.5 percent. In practice, the average departmental tax rate was 1.8 percent in 2016.

- Total tax rate borne by the builder =
  [municipal tax rate] + [departmental tax rate] + [national Capital Region tax rate]
  [from 1 to 5%] + [from 1 to 2.5%] + [from 0 to 1%]

[6] For a description of aided loans and public subsidies for social rental housing see French Ministry of housing, 2017.

- Thus, the individual tax liability is:
  Amount of Tax = Total tax rate x Number of square meters x 753 €/m² *(x 50% if it's a principal residence on the 100 first m²)*

Looking at municipalities (or inter-municipal cooperation), they have two tax rate options with the possibility of coupling their choice with an additional tax rate.

- **Option 1: Single rate on the area of responsibility (called "standard TA")**

  The tax rate can be between 1 and 5 percent, according to the status and local decision. In municipalities with a city plan, a default value of one percent applies when no other decision is made. They can also waive their right to collect the standard TA.

  - Total tax rate borne by the builder = [1 - 5%] + [1 - 2.5%] + [0 – 1%]

  In 2017, 79 percent of French local authorities (27,300) collected the TA.
  About 25,000 of them adopted a single tax rate for their territory.

- **Option 2: Multi-rates on the area of responsibility (called "differentiated TA")**

  Alternatively, it is possible for every municipality to decide different tax rates on different places in order to take into account the effective costs of urbanization of districts (road construction, water infrastructure, schools, etc.). Each rate has to be in the range of the normal tax rate – from 1 to 5 percent (see Figure 1).

  In 2017, 2,542 local authorities adopted multi-rates, that is, identifying special areas bearing a heavier or a lighter tax burden on construction and contributing more or less to public investment expenses (2,542 includes increased tax rate sectors). Although there is no obligation to identify the infrastructure financed by the TA, it can be considered for local authorities as an instrument to provide spatial equity.

- **Additional Option: An increased development tax (*taxe d'aménagement majorée-TAM*)**

  This option can be taken in addition to option 1 or 2. A new tax rate supersedes the previous one on identified zones.

  In specific districts or future development zones, local authorities can levy an increased TA on construction, arguing that urbanization creates demand for huge public investment. The rate must be in a range from 5 percent to 20 percent (absolute amount) and must be calculated according to the share of public investment required for the area. In return, the local authority builds the necessary infrastructure.

  - Total tax rate borne by the builder = [5%-20%] + [1 - 2.5%] + [0 – 1%]

  More than 1,000 municipalities chose an increased development tax rate in France in 2016.

This option looks very different from the others because infrastructure has to be identified and built, and the TA revenues cannot exceed infrastructure costs. We will focus on case studies where this additional option is applied, in order to analyze how local authorities, manage such a tax with an instrument that is administrated like a fee.

An Overview of National Outcomes

Tax revenues and land value capture

In 2017, 79 percent of French local authorities collected the development tax (TA). Altogether, local authorities' revenue of TA was 863 M€ in 2016 (45 M€ can be added corresponding to decreasing revenues of a repealed tax). Thus, the total land value increases recovered by the development tax was equal to 908 M€ in 2016. Nationally, this equates to 6.3 percent of the total amount of local authorities' capital spending. Compared to the previous system, revenues from the development tax have increased by 50 percent since the TA was implemented.

From a local point of view, a local authority collects €27,000/year on average in development tax revenue (MCT 2018). At first sight, it does not seem high enough to finance public infrastructure, but figures from the French Ministry of Urban Development reveal a scattered efficiency:

- More than **1,800 municipalities earned more than 100,000 € in 2016, 84 of which overshot 1 M€.** This high level of land value capture occurs in the largest cities like Bordeaux, Strasbourg, Nantes, Toulouse or Aix-Marseille Provence, Lyon, and Grand Paris metropolitan areas.

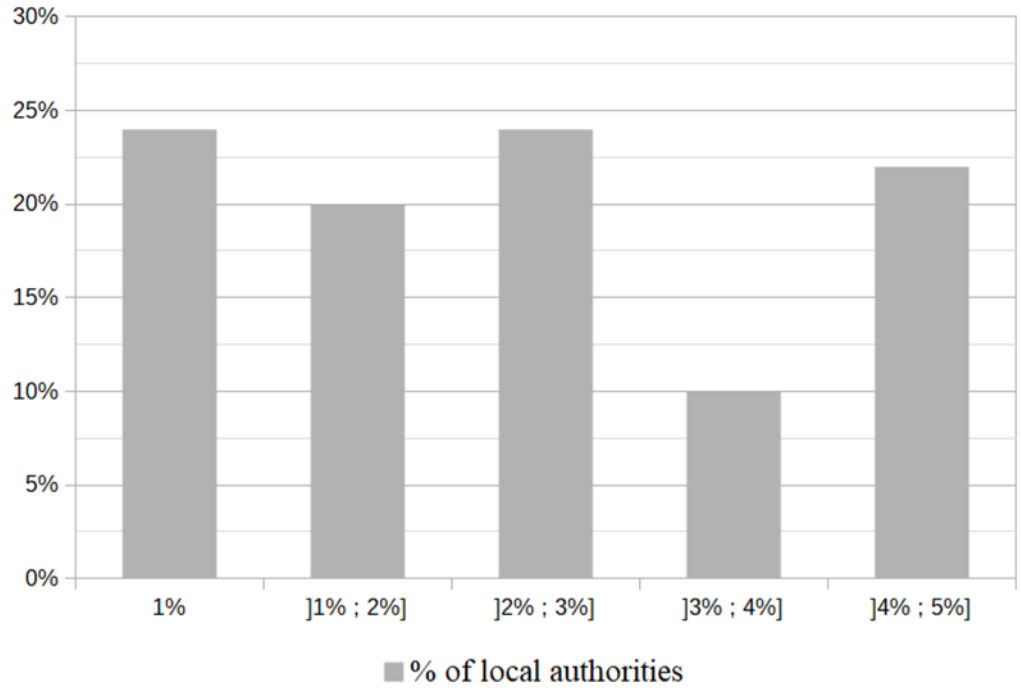
- The majority of local authorities—**over 18,000 municipalities**—**earned less than 5,000 € in 2016**. Here, development tax revenue levels are obviously not a key driving force for public urban development (MCT 2018).

Finally, in 21 percent of the municipalities (9,000 in France), land value capture is not implemented through the development tax. In such cases, public infrastructure spending is totally financed by the local budget. If they had adopted the development tax, the findings of Cerema (2021) indicate that the efficiency of the urban value capture would have been very low because the number of building permits is below three units in 60 percent of these administration areas and between four and nine units for another 30 percent.

By extension, the highest revenues are collected by those municipalities with the most development, exactly as the policy intended. In 2016, 91 percent of building permits and 96 percent of new housing square meters are submitted to standard TA. The standard TA cost is borne by almost all the French population involved in a new building (the housing price covers a tax cost for 91% of French homeowners buying a new housing unit).

Effective tax rates

Figure 1: Distribution of the development tax rate in 2016, French local authorities



Source: Statistical processing by Cerema 2018, based on data of the French Ministry of Housing, 2016.

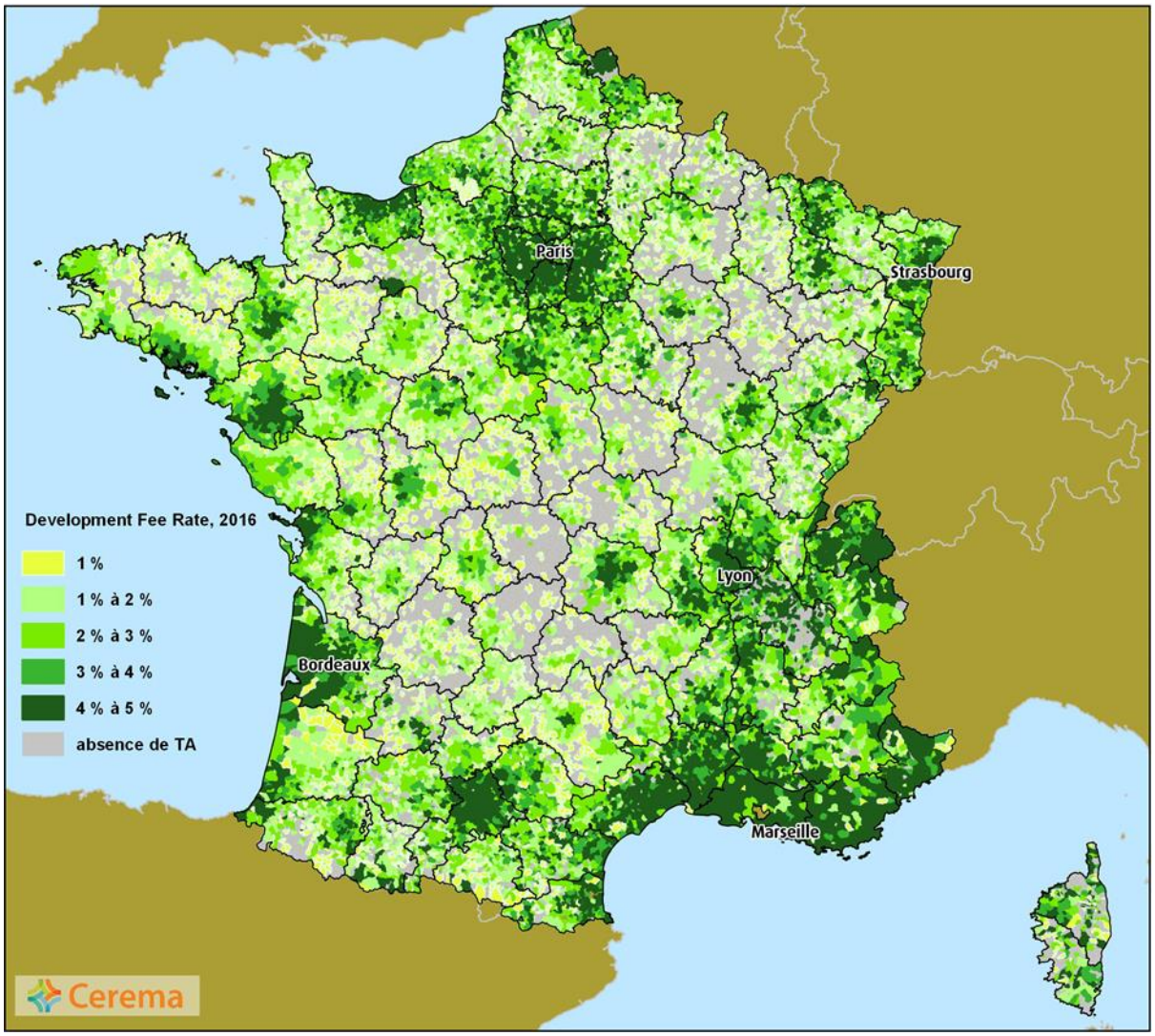
The average tax rate remained unchanged by 2.7 percent from 2012 to 2016. As shown in Figure 1, tax rates that were voted locally used all the range allowed by the law from 1 to 5 percent. The choice of a development tax rate is spread in four parts, among which:

- A quarter of local authorities have voted a tax rate of 1 percent. That is very low and not sufficient to finance public infrastructure spending in the territory. It represents a low-level public land value capture. Moreover, 31 percent of the rural towns have waived the development tax entirely;

- A quarter of the territories bear a tax rate of 3 percent;

- A quarter of the territories bear a tax rate of 5 percent.

Figure 2: Map of the local development tax rate (percentage) in France, 2016



Source: Statistical processing by Cerema 2018, based on data of the French Ministry of Housing, 2016.

As depicted on the map, the level of taxation is linked to the size of urban areas. In fact, the level is at the maximum in metropolitan areas where infrastructure is concentrated. In rural areas, the level of taxation is dramatically lower at 2.6 percent. In suburban cities the medium tax rate is 3.6 percent. Touristic regions (on the shore and in mountains) have voted tax rates at the top of the possible range. The burden of the development tax seems to be correlated to the level of public spending on infrastructure. In their strategy of financing public investment, local authorities try to optimize their tax revenues to support a higher investment budget.

On the contrary, municipalities reduce the tax burden when land market conditions for capturing land value increases are low. Looking inside metropolitan areas, the tax rate decreases gradually with the distance to the city center, following the decreasing land market prices. The higher the vacancy rate of housing, the lower the development tax rate. When the supply of housing exceeds the demand, municipalities vote for a lower tax burden, fitting with the market conditions.

The TA revenue is inadequate to meet all infrastructure demand in a locality. Rather, the TA revenue supplements other revenues for the investment budget. Moreover, the fiscal capacity

per capita is independent from the local tax rate. So, land value capture on new buildings does not rise with local incomes, pointing to equity as a key issue at stake.

Increased development tax rate

More than 1,000 municipalities have chosen an increased development tax rate in France in 2016. They target special areas of city plans, like new building plots or perimeters for new urban developments without any infrastructure.

Only seven percent of building permits are situated in a municipality applying an Increased TA in 2016. As increased TA is concentrated in specific areas, fewer building permits are susceptible to capturing land value increases. Increased TA is usually adopted in more dense areas because it covers 16 percent of new housing square meters created in France in 2016.

In 2016, half of the municipalities captured a high level of land value increases by adopting an increased tax rate between 15 and 20 percent, among which 312 urban settlements decided to implement the maximum tax rate of 20 percent. Although, the amount of land value increases captured is also lower in 210 municipalities where the increased tax rate is in a range from 6 to 10 percent.

Social housing exemptions

Local authorities can vote three exemptions targeting affordable housing financed by a granted public loan to encourage home ownership. However, the provision has seldom been used: only 14 percent of local authorities adopted a total exemption and four percent a partial one.

Micro Level Study: Two Cases

Criteria for Selection

Following the national overview, a selection of two cases in Bordeaux and Strasbourg was made in order to understand the decision to implement a development tax and to evaluate the result of the implementation in terms of efficiency and equity. The selection of the cases follows general objectives and additional spatial criteria.

General Objectives

The study considers cases of cities that shed light in answering questions regarding the socio-economic impact of the TA. The following selection criteria is used:

- A minimum population size (10,000 inhabitants) in order to be able to measure population change;
- Strong current (2010-2015) and near-term growth projections of population and housing which report for a need for infrastructure improvements;
- A dynamic real estate market context, buoyed by private developers;

- Significant tax revenue collected, marked by:
    - A percent of the TA in the investment budget;
    - A large perimeter of the TA implementation;
    - A high level of the tax rate;
    - The existence of tax exemption or tax abatement for affordable housing; and

- Considering a sufficient number of years is necessary to be able to measure some impacts, the TA has to be implemented as earlier as possible.

Additional spatial criteria

The study considers two cases which can hold comparison and enable more general statements.

- Parisian cities have been excluded for two reasons: Institutional changes have occurred during the last decade which could mislead our results and several projects are being developed under different modes and financial arrangements which make it difficult to focus on a single instrument. It appears that a study has been provided for the Parisian region (Cocquière and O'hanna 2018) which could give some elements for comparison.

- Large metropoles seem to be relevant for international comparison. There are places with strong real estate market tensions, with a lack of affordable housing, and urban sprawl tendency. In such context, land value capture is an important instrument of urban development regulation, in addition to the infrastructure finance. Metropoles have just been established as new public institutions in France, and strategic guidelines are on the agenda. It makes our choice more meaningful.

- Two cases of urban development could help understand different situations. For instance, an older "central" city facing pressures to upgrade outdated and inadequate infrastructure, and one focused on "densification," that is, growth within an urban growth limit. The choice was then to exclude new sprawling development on the outskirts and consumption of open space or agricultural lands.

Case Selection

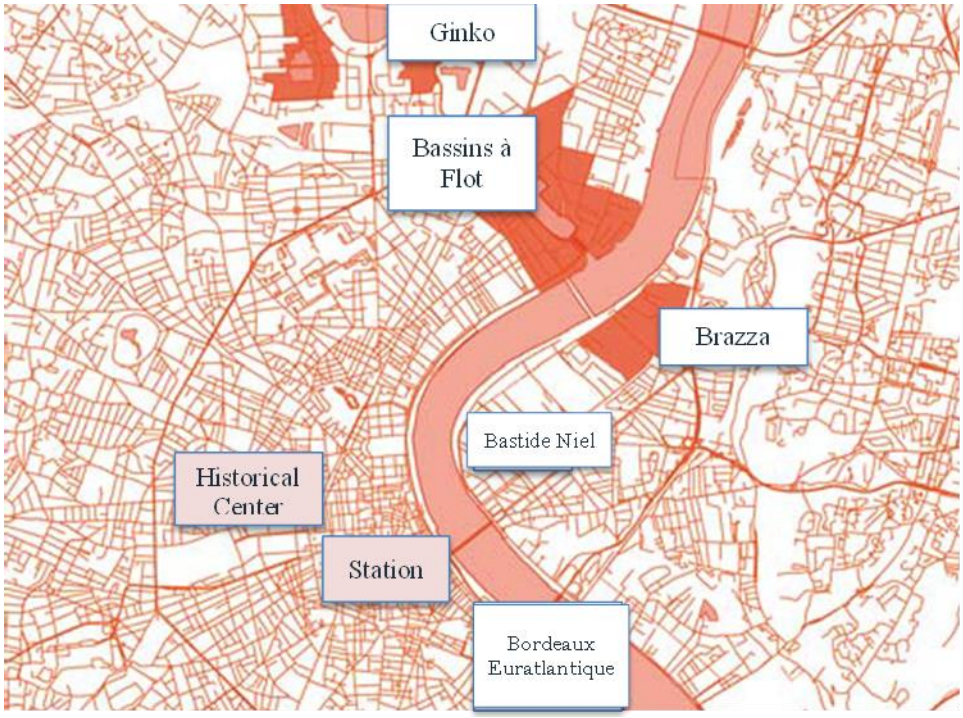
A cross analysis of our different criteria (see Annex 1) results in the selection of the Bordeaux and Strasbourg metropolitan regions (see Annex 2 for the location of Bordeaux and Strasbourg in France).

Bordeaux – Brazza, brownfield regeneration: from industrial to housing land values

Bordeaux is one of the biggest cities in France. The Bordeaux municipality has been merged with 28 other municipalities in an inter-municipal cooperative body since 1968 (*Communauté urbaine de Bordeaux*), which was given the status of Metropole on January 1st, 2015 (Law MAPAM). Bordeaux Metropole has power over urban planning and development. It manages several metropolitan large urban projects and has levied the TA since 2010. The 28 municipalities can also develop projects, considering the impact on urban development. Projects and public facilities investments are generally shared according to metropolitan or municipality interest.

Bordeaux metropole is undergoing a strong housing market pressure, with a high increase of new inhabitants (+7.2 percent from 2010 to 2015), due to a dynamic birth rate and population mobility from other cities. The ambition of the metropole is to reach one million inhabitants by 2030, especially along the transportation corridors, which leads to an estimated demand of 50,000 new housing units for 2030. A "50,000 housings units' program" has been launched by the Metropole council in 2013 in order to boost the housing construction on identified areas with mixed-programs (1/3 social, 1/3 affordable, and 1/3 free) in order to enable median income households with 21,433€ per year (in 2015) to remain in the center. Concomitantly, Bordeaux Metropole has invested in new tram lines and public space improvements. Also, it has launched several large urban projects (Ginko, Les bassins à flot, Bastide – Brazza, Bastide – Niel, Bordeaux Euratlantique, Les Aubiers - Le lac, Bordeaux (Re) Centres, Grand Parc, La Jallère) with a lot of new housing. The projects are managed under diverse public-private partnerships in order to facilitate and orientate private projects in the city. In the meantime, the demand for housing from low income households is tight in the city where prices for new apartments have increased from 3750€/m² in 2014 to 4200€/m² in 2018. Even the resale residential market remains close to 4100€/m² in the City of Bordeaux, 35 percent higher than in other places. At that price level, several households cannot afford to rent or buy their dwelling in the metropole and must find a location in the suburbs, or remain in poor dwellings in the city, with a high risk of degradation of part of the housing stock.

Figure 3: Location of Brazza Area in Bordeaux Metropole



Source: Authors, adapted from Bordeaux Metropole.

Brazza is an industrial area of 53 ha, close to the city center of Bordeaux on the right bank of the river Garonne (see Annex 3). It is almost empty as most industries closed in the beginning of the 2000's. The project was born in 2005/2009 to meet the need of housing and jobs for inhabitants. A general master plan was finalized in 2012 with a purpose of increasing the quality and affordability of housing. In order to finance public infrastructure on the area, an increased TA rate was implemented in 2012. The tax rate was fixed up to 20 percent and was reduced to 10 percent in 2014 according to a revision of the program of infrastructure and

costs. The 2014 master plan (called guide plan) fixes infrastructure program and several construction conditions co-signed by Local Authority and private developers in a “Charte”. Housing conditions deal with the size (with 60 percent minimum of large apartment >65m²) and quality of housing (460 individual family houses and 450 spaces "ready to finish"/ adaptive volumes), a mix of housing (45 percent of free market housing, 20 percent of social home ownership and 35 percent of social housing, with rents subsidized by public authorities), social diversity sectors, and maximum price level (3000€/m² for affordable apartments without car park). In addition, the “Charte” provides for a variety of private development (retail shops, handicraft workshops, offices, leisure, hotels) and public facilities (schools, kindergarten, gymnasium, public library, and waste site). The development process is managed by the Metropole and negotiated with private developers throughout the course of the project. A Competitive Bid process has been launched by the Local Authority for the first phase on 15ha owned by the municipality of Bordeaux, divided into large plots to be developed and built under specified conditions.

In 2018, developments were initiated by 9 private companies and 4 social housing semi-private companies, and 30 percent of the planned buildings have received permits.

Strasbourg: Grande Ile, rising land value in an aging historic center by a public urban project

Strasbourg is another large Metropole located in the eastern part of France. Strasbourg Metropole history can be compared to Bordeaux. A *Communauté urbaine* was created in 1967 with 27 municipalities. The intercommunal body was converted into the Eurometropole of Strasbourg by the law in January 2015. Since 2017, it includes 33 municipalities and 500,000 inhabitants. Strasbourg Metropole has the same status as Bordeaux Metropole, with similar powers, especially concerning development projects and investments, and the right to levy TA.

The housing market is tight in the inner city. High demand for affordable housing remains unsatisfied in the center. With a median family income of 19,940€ (in 2015) 60 percent of households could apply for a subsided housing, according to the French standard. In 2011, 32 percent of metropolitan households are in a poor-housing situation, and the ratio goes up to 60 percent in some central boroughs. Strasbourg Metropole designed a housing plan in 2009, with an objective of 3,000 new housing units per year on the 2009 – 2015 period, half of them being social and affordable housings. The objective is to provide 47 percent of the supply in the city of Strasbourg and the rest in the suburban areas. The plan has been confirmed in the new perspective after 2016. It could then lead to create 45,000 housing from 2015 to 2030. In the meantime, important public investments have been made in public transport, with 6 tramlines now operating on 45km of rail. The last investment aims at strengthening the connection between the suburbs and the inner city.

A focus is made on 13 identified zones considered to be of metropolitan interest, and with the support of the Central government on 5 renewal projects where a large amount of social housing needs to be upgraded. The effort should concentrate on areas closed to public transports and services in order to prevent displacement of long-time, especially for low income households. The plan stresses the objective to develop new housing in the metropolitan center along the inter-regional axis to the German city of Kehl, and in the south-western and western part of the city along the new tram lines.

The objective is to meet the housing needs of low-income households, while the majority of homes purchased in new buildings is done by investors (70 percent in 2011), with prices reaching 3400€/m² (average price 2012-2014.)
Unlike in Bordeaux Metropole, housing policy is focused on identified public programs which will enable the building of 14,300 units. Strasbourg Metropole has already launched a strategy for land purchasing. The land will then be sold to developers at low prices under affordable price resale conditions. Cooperation with the private sector is not strong. Cooperation with the private sector focuses on sustainable development measures and innovation. An agreement has been signed in a "*charte pour un aménagement et un habitat durables"* which fixes the architectural and sustainable quality of housing projects. Some calls for tender have been launched on public-owned land in order to stimulate the creation of "positive energy building", experimentation of new technologies and innovation in housing construction. On public managed programs, prices tend to remain stable around 2650€/m², although they increase in eco-friendly programs. Strasbourg Metropole requires 10 to 15 percent affordable housing in every private construction project.

Figure 4: Localization of Grande Ile area in Eurometropole of Strasbourg

Source: Authors, adapted from Eurometropole of Strasbourg.

Grande Ile is a commercial and residential area located in the inner-city center, between the central station and the historical and protected central borough (see Annex 4). It was one of the first areas to be equipped with the tram in 1994. While the historical borough in the south of the center benefits from several public investments and tourism attractiveness, population

in Grande-Ile decreased during the last decade (0.1 percent per year). Residents have moved within the area frequently: 52 to 60 percent of households moved in the area less than 5 years before. Housing vacancy is higher than in Strasbourg city: it reaches 12.7 percent in the northern part of the area, compared to 7.7 percent in Strasbourg Metropole. The density of buildings is already high (7000 units/km² to be compared with 3100 units/km² in Strasbourg municipality). Social housing is limited, with only 19 buildings, 2 residences for students and a social care establishment. Evidence of residential segregation for middle class populations exists. The area tends to be occupied by students and temporary occupants. Prices are 7 percent higher than in other places in Strasbourg (in 2011, source PLH).

The attractiveness of the center has been a major stake for the City, which fears the migration of commerce to the suburbs and a diminution of social mix. It must then be decided to stir up private investments with a program of public space requalification and a "gentle mobility" plan which aims at reducing automobile traffic. One condition to the mobility plan is to reduce car use and to develop modal shifts in the area. The increased TA rate is directly connected to the project and aims to finance transport modal connections, roads schemes, and public car parks around the area.

Key Features of French Metropoles

Table 2: Demographic dynamism of Bordeaux and Strasbourg Metropoles compared with 20 French Metropoles (2011-2016)

	Population 2016	Annual change of the number of inhabitants 2011-2016	Annual change of number of inhabitants 2011-2016 per km²	Annual change in population (period rate 2011-2016, %)
Métropole of Grand Paris	7 026 765	18 789	23	0.3
Métropole of Lyon	1 381 249	14 233	26	1.1
Bordeaux Métropole	**783 081**	**11 165**	**19**	**1.5**
Toulouse Métropole	762 956	9 725	21	1.3
Nantes Métropole	638 931	8 983	17	1.5
Métropole d'Aix-Marseille-Provence	1 873 707	7 939	3	0.4
Montpellier Méditerranée Métropole	465 070	7 506	17	1.7
Rennes Métropole	443 192	5 848	8	1.4
European Metropole of Lille	1 143 572	4 772	7	0.4
Eurométropole of Strasbourg	**491 409**	**2 981**	**9**	**0.6**
Métropole Toulon-Provence-Méditerranée	433 221	2 163	6	0.5
Orléans Métropole	282 828	1 790	5	0.6
Clermont Auvergne Métropole	288 435	1 342	4	0.5
Dijon Métropole	251 897	1 240	5	0.5
Métropole Grenoble-Alpes-Métropole	443 123	1 177	2	0.3
Tours Métropole Val de Loire	293 123	998	3	0.3
Saint-Etienne Métropole	404 048	983	1	0.2
Métropole Rouen Normandie	490 001	615	1	0.1
Brest Métropole	208 930	407	2	0.2
Métropole of Grand Nancy	256 610	73	1	0.0
Métropole Nice Côte d'Azur	538 769	25	0	0.0
Metz Métropole	222 146	-194	-1	-0.1

Source: Insee population census 2011 et 2016, état civil, In INSEE. 2019, p. 2.

Even if it is under 1.1 million inhabitants, Bordeaux Metropole is among the five more dynamic metropoles of the country: its annual change rate for 2011-2016 being the highest. It can be compared with Nantes, Toulouse, and Montpellier Metropoles. Eurometropole of Strasbourg is part of a second group composed of regional cities, growing quicker than the average of the French Metropoles (0.4 percent over 2011-2016).

Table 3: Development tax characteristics – Comparison between Bordeaux, Strasbourg Metropoles and French Metropoles (2016)

	Standard Tax rate in 2016		Increased tax rate			Urban profiles inside the Metropolitan area, number of rural municipalities	TA revenues before rebates - average annual amount 2015-2017
	Same in the area	(%)	Max	Min	Number of municipalities		
Bordeaux Métropole	**Yes**	**5%**	**10%**	**10%**	**28 on 28**	**1**	**12.7 M€**
Toulouse Métropole	Yes	5%	16%	12%	9 on 33	4	23.5 M€
Nantes Métropole	Yes	5%	/	/	0 on 24	1	13.1 M€
Montpellier Méditerranée Métropole	Yes	5%	14%	14%	1 on 31	2	6.8 M€
Rennes Métropole	No	1-5%	20%	6%	3 on 43	12	7 M€
Eurométropole de Strasbourg	**Yes**	**5%**	**10%**	**10%**	**2 on 33**	**5**	**9.2 M€**
Métropole Toulon-Provence-Méditerranée	Yes	5%	20%	6%	8 on 12	0	8.9 M€

Source: Statistical processing by Cerema 2019, based on data of the French Ministry of Housing, 2016.

As shown in Table 3, Bordeaux Metropole and Eurometropole of Strasbourg adopted a standard development tax similar to other French regional cities, opting for a five percent standard tax rate uniform over the area, except in the case of Rennes Métropole, which adopted a different standard tax rate to link the urban and rural profiles of its components.

Strategies of increased TA differ even among the dynamic group of Bordeaux, Toulouse, Nantes, Montpellier, and Rennes. All these metropoles adopted it, except Nantes which waited until 2017, preferring the contractual instrument of the comprehensive development zone (*Zone d'aménagement concertée* – ZAC). Bordeaux Metropole is the only local authority which directly links its increased TA with its housing strategy. Eurométropole of Strasbourg presents a common profile with a minority of perimeters of higher land value capture capabilities. Both case studies opted for a moderate increased TA whereas Rennes or Toulon vary increased TA on a extended range from 6 to 20 percent (the maximum).

Methodology

Following Salon (2014), we examine the equity implications of the financing mechanisms across household income levels and geography, that is, neighborhoods within a metropole, a commune, or a city. As already mentioned, it is a common issue for taxes which cannot be neglected by policy makers. Taxpayers also feel concerned and react against inequitable taxes, by putting in claims or moving to other places (following Tiebout model).

As far as the TA is concerned, it operates like a tax although it also aims at capturing land value increases for infrastructure financing. In an attempt to shed light on the redistribution power of the TA in France at a local level, our work has explored three directions:

- The first question is then to determine whether the development tax functions as an LVC instrument. The purpose of the tax is not clear, between public infrastructure funding and land value capture. The link between price increase and tax level is not obvious in the conception of the TA, although it stems from the correlation between infrastructure improvement and land value, which is not systematic and is controversial in theory and practice. We will not go into this debate of the impact of infrastructure on land value. Several researchers try to evaluate the impact, without a unified conclusion. In our analysis we will consider the potential correlation, which has been regularly observed in large metropoles, keeping in mind it can vary in time and places (Guelton 2018; Rosen 2019).

- Second, we compare the group who pays the tax and the group who benefits from the expenditures resulting from the TA revenue. We focus on equity inside the perimeter of the tax collection area to see what kind of redistribution is allowed by the tax. Our focus is on residential properties and less well-off households. Following French government recommendations, a mix of uses (housing, commerce, and office) are planned in new developments. It leads to consider the equity across residential and other properties (for business). Analyzing these groups of businesses and developers questions the impact of the tax. This is an important issue all throughout our study.

- Then we focus on equity outside the perimeter to see if some redistribution occurred through tax collection (metropole and the city) and the kind of investment made (for local purpose or for metropolitan benefit). We doubt some positive windfall could appear in neighborhoods outside the benefit zone, where the tax is not paid. At the same time, other political decisions or urban regulation can have an impact on land values in the benefit zone. It is difficult to separate one impact from another.

We decided not to tackle the question of territorial impact of infrastructure on land prices as it is an unstable issue (infrastructure impact) and difficult to quantify at a micro level.

Our field work is organized as follows.

- We first focus on statistics collection in order to understand the metropolitan context of urbanization and development projects versus public policies, actions, and finance. Especially the documents that prepare and evaluate local plans for housing policies (PLH) and local plans for urbanization (PLU). Metropolitan agencies regularly provide statements on land and real estate markets.

- Our local cases require the collection of in-depth information, which is not publicly available. For demography and revenues, we use national statistics at a neighborhood level called “IRIS.” As these neighborhoods do not exactly cover the areas of our case studies, some approximations could appear which do not alter the sense of conclusion. For land and real estate prices, we have access to a survey from fiscal data in Bordeaux and another from sales of real estate offices in Strasbourg. For public finance and taxes, an extraction of data has been provided by metropolitan services in Strasbourg. In Bordeaux, where development is just beginning and no public costs

already spent, information is available in provisional operational programs made accessible by the Metropolitan urban development service. In both cities, no information can be collected on actual development costs due to confidentiality. Neither can we have access to exhaustive and precise local finance data at that scale. Considering public budgets are not supposed to be detailed by neighborhoods, such data are generally either not provided or not available.

- In order to have a good understanding of figures, and to complement statistics and hard information, we conducted interviews with public managers and consultancies: In Bordeaux:
  - Metropolitan and municipal service of finance, Urban development service, Service of land strategy and observatory, Brazza project manager;
  - Adequation consultant, urban study agency;

- In Strasbourg:
  - National fiscal service for Strasbourg Metropole;
  - Metropolitan service of public infrastructure, service of finance, urban development service;
  - Adequation consultant, urban study agency, real estate offices.

Our study lacks developers' statistics and interviews. Developers do not give much information concerning on-going projects. In order to have some elements concerning project balance, we attended meetings where presentations were made on Brazza projects. We could not get much information on Strasbourg projects, most of them being small and scattered. In order to get more information about the process in Strasbourg-Grande Ile, we should organize interviews with landowners, but such interviews need more time than we had for our study.

Findings

Following our objective to measure the equity of the TA as a land value capture instrument, we will focus on three identified issues (LVC administration, equity among taxpayers, and spatial equity inside and outside the perimeter) and present the results of our cases studies.

LVC Administration

Increased TA focuses on the developer contribution

The increased TA was implemented in 2012 in Bordeaux-Brazza and in 2014 in Strasbourg-Grande Ile, with a tax rate of 10 percent.

The initial tax rate was 20 percent in Bordeaux-Brazza; it was reduced to 10 percent in 2014 due to a public-private negotiation. Politicians explain the tax reduction in Bordeaux as a response to the reduction of public facilities programs and costs. And, actually, the detailed plan has been changed. Technicians explain the reduction is a result of negotiation with developers, who find the 20 percent too high to undertake a mixed program of construction, including handicraft workshops: 10 percent appears to them as a symbolic maximum level for the tax rate.

The tax burden varies for home occupiers and investors. In Bordeaux-Brazza and in Strasbourg Grande Ile, the tax levy per floor square meter is 75€/m² in 2019 for a real estate investor (753€ x 10%) and is 37€/m² for a principal residence buyer (if the surface of the dwelling is under 100 m² it would be 753€ x 10% x 50%). Compared to new apartment prices in 2019, which are estimated close to 4,000 – 4,400€/m² in both cities (4,400€ in Bordeaux - Brazza with car parking and 4,000€/m² in Strasbourg-Grande Ile without car park), it accounts for 1.7 percent, and about 15 to 20 percent of the promoter's margin. In addition, developers pay the departmental part of the fee: 1.3 percent in Bordeaux and 1.25 percent in Strasbourg, equaling to 9.80€ or 4.90€ per floor square meter according to the status of the buyer.

Considering the 50 percent rebate on the first 100m²/apartment, the burden is less important for owner-occupants. It reaches one percent of the apartment price, for higher prices.

Increased TA is an instrument to cover public spending, but lacks determination

Table 4a: Development tax revenues compared to local investment in Strasbourg and Bordeaux (2014-2018)

	Bordeaux Metropole*		Transferred to municipality of Bordeaux*		Strasbourg Metropole*		Transferred to municipality of Strasbourg*	
Calendar years	TA revenue M€	TA/public investment[1] (%)	TA revenue M€	TA/ public investment[2] (%)	TA revenue M€	TA/ public investment[1] (%)	TA revenue M€	TA/ public investment[2] (%)
2014	1.6	0.2	0.3	0.2	1.7	0.4	0.3	0.25
2015	3.0	0.5	0.6	0.5	5.6	1.6	1.2	1.2
2016	7.2	1.4	1.7	2.2	6.8	2.1	1.6	2.7
2017	21.1	3.0	1.8	2.0	12.2	3.9	2.5	3.9
2018					11.3		2.46	

Source: Local authorities completed budgets.
[1]metropole + municipalities; [2] City of Bordeaux only.
*See section Administration for the definition of Metropole and Municipality.

Development tax revenues have been increasing since 2014, due to a two years' timeframe in tax collection (see point below). After 2017, tax revenues represent two to three percent of public investments in Bordeaux and four percent in Strasbourg.

It must be pointed out (see section "Administration") that the TA followed a previous tax called "Local Tax for Infrastructure" (TLE). Even though the TLE is no longer levied after 2014, it was still collected in 2014 and 2015. For example, in Bordeaux Metropole, the TLE revenues account for 1.6 M€ in 2014 and 0.6 M€ in 2015 (respectively 0.38 M€ in 2014 and 0.023 M€ in 2015 in municipality of Bordeaux).

Brazza is a derelict site where no construction is built yet. After the project was decided, a master plan was announced in 2012, and modified in 2014. In 2016 the city resold by tender to a private developer part of the land it bought in 2013. The project intends to build 70,600 m² of offices, commerce and hotel, 63,000 m² of crafts building, and 305,900 m² of housings of different types. It also fixes infrastructure and community facilities (roads and networks services, public space, two schools, a children's center, a gymnasium, a library, a recreation center, an association life room, green areas) for a total amount of 38.1 M€.

Forecasts of increased development tax revenues account for 35.4 M€ on Brazza (2014-2021), according to the 2014 master plan. During the total period, it is projected to cover 93 percent of the public expenses of the area.
In the "old" city center of Strasbourg–Grande Ile, construction has two components: one is linked with the general context of the city market, the second is subject to local conditions like new regulations or new large projects. A new master plan in 2014 changes property rights at the margin in the city center. In this area, development, or re-development, is held by the private sector with individual small projects. An average of 50 projects per year has been recorded from 2013 to 2016. Ninety percent of them are renovation projects, with no additional surface being created: they consist of refurbishments of façade, frame part or windows, access or lifts, energy isolation, et cetera. Five percent of the projects create less than 20 additional m² (that is the case with the transformation of an attic). Up to now, two bigger projects are being developed in Grande Ile by the private sector. One is the transformation of an old police center (owned by the Metropole, part of it is listed as a patrimonial building) into a hotel (7,100 m² of rooms). We will refer to it as "Hotel de police." The other is the transformation of the former store (le Printemps) and parking into a large commercial center (8,100 m²), a residential building (6,100 m²), and 180 parking places. We will refer to it as "Ilot Printemps." In the meantime, Strasbourg Metropole initiates few investments in the city center. They mainly concern mobility. A public program on mobility was launched to replace road traffic with public transportation and to improve the air quality in the city center. It includes parking close to the tram (built in 1994 and improved regularly), and walking improvements in the center.
While the tram has been improved regularly since 1994, essentially a suburban connection, a pedestrian road (rue des Juifs) was approved in 2017 in Strasbourg-Grande Ile (for a cost of 930,000 € TTC)
A new car parking lot is being examined and old car parking lots close to the city center are to be renovated. Although since now, and except the tram, there are no specific facilities being built in the area.

In Strasbourg-Grande Ile, tax revenues accounted for 12.25 M€ in 2017. It is not possible to compare with public expenses as there is no specific accountancy of what has been spent on this special area because. First, there is no compulsory requirement, following the principle of universality of public budget[7]; and second, public investment in the city center, especially concerning mobility, is the most indivisible. It is then impossible to identify the exact amount spent to benefit the area.

<u>The TA is disconnected from the project time process</u>

It takes some time for the tax to be effective, considering the tax is paid in two parts: the first part 12 months after the building permission and the second part 12 months later. In addition, tax revenues depend on building permits creating new floor areas. It means that local authorities will not get any revenue from the tax before 2018 for Brazza and before 2016 for Strasbourg-Grande Ile.

[7] According to this principle, revenues cannot be allocated to specific investments, but may finance any of them.

Bordeaux-Brazza

Table 4b: Timeframe for tax collection: Projection for Bordeaux-Brazza

Year	Before 2010	11	12	13	14	15	16	17	18	19	20	21	22	23	After 2023
Pre development phase															
Extension of property rights															
TA decision															
Entitlement															
Building permits															
TA collection															
Public investments															

Source: Local public documents, interpreted by authors (2019).

Looking at the project planning, we can compare the different steps of the project, as recorded through project documents and interviews, with tax decisions and predicted tax collections in the project documents. Land value is to increase due to regulation rights changes and detailed plan announcements (2012-2014) and public investments (2016-2021). New floor areas are to be authorized from 2017 to 2021 and built after development works are done (from 2020 to 2024). Public facilities are planned to be built after 2021. As of 2018 no tax revenues had been collected yet, as the first building permits were approved in 2017. Tax would be collected from 2019 to 2023. There is a length of time between the value increase and the tax collection, but there are fewer gaps between tax collection and public spending.

Strasbourg-Grande Ile

Table 5: Timeframe for tax collection. Projection for Strasbourg - Grande Ile

Year	Before 2010	11	12	13	14	15	16	17	18	19	20	21	22	23	After 2023
Predevelopment phase															
Extension of property rights															
TA decision															
Entitlement															
Building permits															
TA collection															
Public investments															

Source: Local public documents, interpreted by authors (2019).

A similar analysis leads to different results in Strasbourg Grande-Ile.

Tax revenue collection varies according to a regular flow of building permits and the progress of larger projects. Time distortion is different and opposite. Taxes have been collected following the issuance of building permits in the area: an average of 50 building permits per year between 2013 and 2017.

Contrary to what is identified in a large reconversion project, in constructed urban areas, tax collection can precede public investment. In the meantime, we will see that several landowners do not contribute to public investments while they benefit from environment improvements and capital gain.

LVC Equity

The TA has been designed to contribute to public investments. The issue is, then, to identify whether the taxpayers are those who benefit from land value increase (first point) and to underline whether it contributes to some kind of redistribution between taxpayers (second point).

Taxpayers and land value beneficiaries

In the development process, land value increase is linked to property rights regulation and public investments, and to market supply and demand. The TA is only levied at the end of the process when builders get a building permit.

In such a situation as in Bordeaux-Brazza, former landowners sell industrial land to builders. As seen in Table 5, landowners benefit from capital gain (only when and if they sell) as long as regulation has been changed and some public investment is announced in a detailed plan in

2015. Land prices saw a seven-fold increase from 2015 to 2016. But they will not pay the development tax. On the opposite, builders who pay the TA will benefit from some land value increases due to public investment.

At the end of the process, the benefit from land regulation and new programs remains on former landowners without public contribution.

Table 6: Average real estate price for activities in Brazza and Bordeaux, 2014-2017 (€/m²)

	2014	2015	2016	2017
Bordeaux Metropole	833	750	1200	2017
Municipality of Bordeaux	1286	1167	1556	2472.5
Brazza	-	114	855	778.5

Source: Fiscal data, Bordeaux Métropole.

In an already built urban area as in Strasbourg-Grande Ile, the land value process appears more complex. Land regulation does not change much in the new master plan and the area is already serviced. Land value appears as a result of political announcements, in a dissemination process. Different situations are to be identified.

- For large projects (as "Hotel de police" and "Ilot Printemps"), capital gain results from change of use (from commerce to housing or from public facilities to hotel, without change of regulation) and densification. For Ilot Printemps, the builder is also the landowner. For "Hotel de police," the builder bought the land from Strasbourg Metropole for 4 millions euros – 725€/m², which is acknowledged by the Ministry of Finance[8] to be the market price, considering the poor conditions of the infrastructure and the necessity to demolish part of the building. In both cases the builder benefits from land value increases and pays the tax.

- Small individual projects rarely consist of change of use (five percent of projects recorded between 2013 and 2016), but rather an extension of the surface of apartments or commerce. They may benefit from important tax reductions considering the nature of the building (residential or business, commerce) and the small scale of the project (taxpayers benefit from 50 percent reduction on the first 100m² per apartment when principal residence).

- Several individual projects do not increase the floor space. They do not pay the TA even if the improvement increases the land value. In the meantime, the average residential value has increased slowly by five percent during the period, with a discrepancy of 300 percent. The age of the buildings (37 percent of them were built before 1945) and the quality of renovation explains the discrepancy.

[8] When selling a public property, the price is fixed by a public authority related to Ministry of Finance that justifies the "market price" level by comparison with previous sales in the same district.

It is reported (civil servant interview, February 2019) that in the city center, individual projects are developed by individual investors (for students or for Airbnb). Those investors win twice from the improvement in the area: first, they benefit from land rental value; second, they benefit from a low taxation/contribution to public improvements.

In Strasbourg, the tax is paid by few large projects developed by promoters who will transfer the burden to the renters: new inhabitants or visitors (for hotel and commerce).

Table 7: Average real estate price for second-hand apartment in Strasbourg, 2013 - 2017 (€/m²)

	2013	2014	2015	2016	2017
Municipality of Strasbourg (2)	2420	2460	2390	2540	2530
Strasbourg Grande-Ile (1)	3030	3080	3260	3350	3620
Price difference (1)/(2)	1.25	1.25	1.36	1.32	1.43

Source: French Notaries, quarterly reports of the property market in France.

Redistribution among/between taxpayers

Various exemptions and reductions are allowed by the TA legislation. Local authorities can grant some additional tax reductions (see section "Legal and Policy Context for Taxing Land Value in France"). Both aim to provide social benefits, either via cost sharing or attraction of residents or special activities in the area.

In our cases, general exemptions include public facilities, small surfaces lower than 5 m², and residential buildings financed by social lending effort, which refer to "PLAI" beneficiaries, or which benefit from a reduced value-added tax (TVA) rate of 5.5 percent instead of 20 percent. A 50 percent reduction for other social housing and for the first 100 m² of residential units is allowed for new homeowners. So are the storage and crafts buildings and paid parking.

Since 2012, Bordeaux metropole granted an additional 90 percent reduction of tax for all publicly subsidized housing (apart from PLAI) and a 100 percent reduction for the first 100 m² of residential units which benefit from a subsidized loan (PTZ). The exemptions and reductions apply in the Brazza sector. Table 7 shows the impact of tax reductions on different taxpayers. Free housing, offices, and commerce represent 48 percent of the planned square meters, but contribute up to 80 percent of the total tax revenues. On the contrary, social and affordable housing, which represent 38 percent of the planned square meters, only contribute eight percent of the tax revenues. The TA operates a large social redistribution in the Brazza sector. This is in line with the "Charte" who fixes a ceiling price for social and affordable housings: those who do not benefit from land value will not pay the TA.

Table 8: Distribution of taxpayers considering exemptions, Bordeaux-Brazza sector, as planned in 2014

	Social housing			Affordable housing to buy	Other housing	Offices and other activities	Crafts building	Commerce	Total
	PLAI	PLUS	other						
Programmed square meters per type (m²)	31733	42311	31733	61941	137714	67914	63038	5514	305432
(% of total m² planned)	7%	10%	7%	14%	31%	15%	14%	1%	100%
Exemptions/ reduction	100%	90%	50%	100%	0%	0%	50%	0%	
Net Tax assessments (m²)	0	4231	15867	0	137714	67914	31519	5514	262759
(% of total net tax assessment's)	0%	2%	6%	0%	52%	26%	12%	2%	100%

Source: Authors, adapted from Bordeaux métropole documents.

Strasbourg Metropole made different decisions. Residential housing financed through a public loan "PLUS" are exempted from the TA payments. In 2013, the question of car parking lots was levelled. Strasbourg Metropole also decided to reduce the TA cost of 50 percent for underground car parking as an incentive for that type of parking development, which uses less land. It must be said that underground car garages are assessed according to the square meters while aerial car parking garages benefit from a fixed assessment value of 5,000€. With a five percent TA tax rate, aerial car parking development pays 5000€ x 5% = 250€, while underground car parking development pays 15m² x 600€ x 5% = 450€. After the 50% reduction, underground parking will pay 225€.

Building permits allowed during the period 2014-2017 reflect the number of taxpayers: each building permit requires one taxpayer. We can acknowledge that 44 percent of the permits concerns housing, which contributes to 17 percent of the tax revenues (Table 8). Fifty percent of the building permits are allowed for commerce and offices and contribute to 83 percent of tax revenues. In this area, only 11 new social units have been planned.

The burden of TA and the high contribution of offices and commerce are explained by the importance of the building types and the nature of project:

- The large program of offices can be opposed to the small program of commerce and free housing.

- The social housing program is large, although it benefits from a tax reduction.

- The most important issue stands in the nature of the project. A large part of building permits consists in refurbishments. Even if the impact on land value is effective, the tax assessment remains low or zero.

Table 9: Mutualization of taxpayers considering exemptions, Strasbourg-Grande Ile sector, 2014-2017

	Housings		Parking	Commerce	Offices	Public Service	Total
	Social	Free					
Building permit per classification (number)	5	85	4	88	14	7	203
(%)	2%	42%	2%	43%	7%	3%	100%
Building permit taxed (number)	2	13	3	16	5	-	39
(%)	5%	33%	8%	41%	13%	0	100%
Surface of the Building permit taxed (m^2)	5537	7633	12	6916	6156		26254
%	21%	29%	0%	26%	24%	0%	100%
Tax revenues (€)	18705	98720	2539	182533	407285		709784
(%)	3%	14%	0.5%	26%	57%		100%

Source: Authors, adapted from Strasbourg metropole accountancy.

Spatial Equity

In principle, increased TA is dedicated to an identified area, where costly public facilities are developed. The legal justification of the levy is that the builder will pay an increased TA on the area of public facilities required by the building and proportionally to the requirement. In turn, local authorities have to improve the facilities, but without any time requirement. Considering this principle, increased TA is designed as a price required for benefiting from public facilities. Practically, two redistribution mechanisms are identified below.

Inside the Area

We looked at redistribution between those who pay the tax and those who pay less. In Bordeaux-Brazza, one issue is the spatial distribution of residential and commercial building programs. Different plots have been allocated to developers through the bidding process (see Case Selection). The different plots and associated developers do not share equally the handicraft program (see Table 9). Some developers benefit from a tax reduction on craft buildings without market price constraints on residences; it represents a loss of public land value capture on residential blocks, causing a decrease in public infrastructure investments.

An alternative solution to avoid this negative effect has been introduced through an optional tax exemption on handicraft facilities since 2015 January 1st (start date). But the option is not operating in Brazza.

Another issue is the distance from each plot to public infrastructure. It has been reported that the localization of public infrastructure could be unequal for final occupants and users (see Annex 3). For instance, plots one, two, and three benefit from a concentration of social and

commercial investment, and a good connection with the city center (bridge and tram) while plots 11 to 13 are both far from those amenities and rather isolated (along a railway line). It is then possible that land value could be unequal in different plots notwithstanding price control via the *Charte*.

Table 10: Distribution of taxpayers in different plots, Bordeaux-Brazza sector, as Planned in 2014

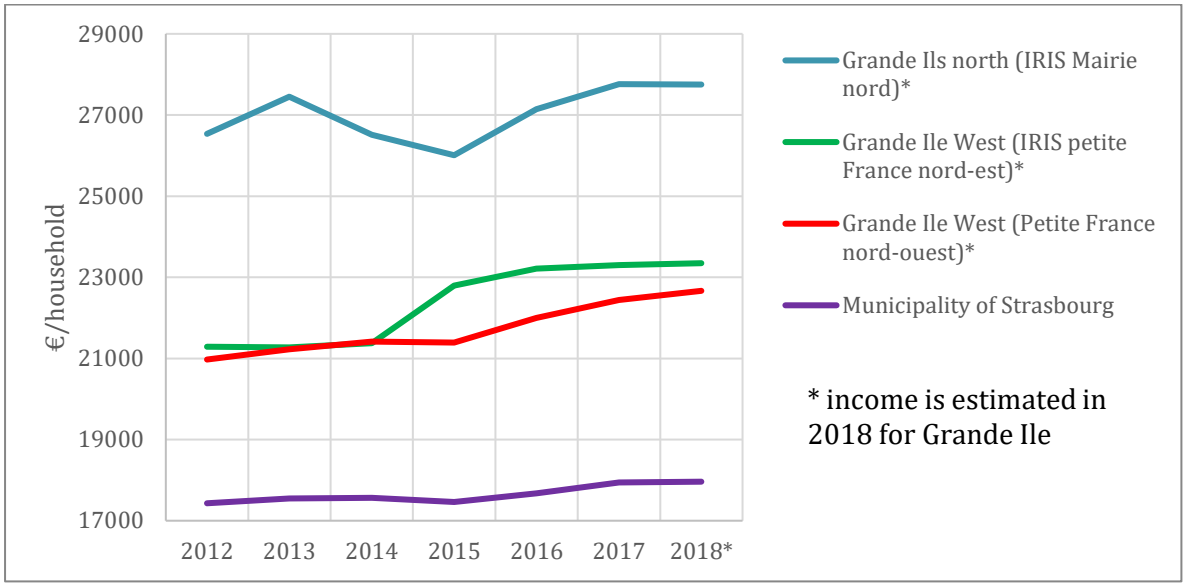
Programmed square meters per type (% of total m² planned)	Social housing			Affordable housing to buy		Other housing	Offices and other activities	Crafts building	Commerce	Total
	PLAI	PLUS	other		Sub total					
Exemptions/ reduction	100%	90%	50%	100%		0%	0%	50%	0%	
Plot 1	7	9	7	13	**36**	30	9	25	-	100
Plot 2	9	11	9	17	**46**	37	5	13	-	100
Plot 3	7	9	7	14	**37**	30	11	22	-	100
Plot 4	10	13	10	19	**52**	44	3	0	-	100
Plot 5	8	11	8	16	**42**	35	11	11	-	100
Plot 6	10	13	10	22	**55**	43	4	0	-	100
Plot 7	8	11	8	15	**42**	36	11	11	-	100
Plot 8	10	13	10	19	**52**	42	7	0	-	100
Plot 9	10	13	10	19	**52**	41	0	8	-	100
Plot 10	8	11	8	17	**44**	35	6	15	-	100
Plot 11	9	12	9	17	**36**	37	6	11	-	100
Plot 12	8	10	8	15	**41**	34	13	13	-	100
Plot 13	8	10	8	14	**40**	33	14	14	-	100

Source: Authors, adapted from Bordeaux métropole documents.

In Strasbourg, the TA is designed to contribute to commercial attractiveness and soft mobility via new car parks and adequate public space (pedestrian areas). Beneficiaries are both tourists and visitors (for commerce) and families who live in the areas.

The population has decreased since 2014, although the population change in Strasbourg is +1.7 percent (2014-2019). It has decreased by 11 percent in Strasbourg Grande-Ile on the same period. In the same time households' income has increased in Strasbourg-Grande Ile by 7 percent while they remain at the same level in Strasbourg. The income in Strasbourg-Grande Ile was 37 percent higher than in Strasbourg municipality in 2018. Analysis of real estate transactions provided understanding of the importance of new families and their income.

Figure 5: Median income per household in Strasbourg municipality and in Strasbourg-Grande Ile, 2012-2018, €/household



Source: Insee, Fichier Localisé Social et Fiscal (FiLoSoFi) per IRIS (2012-2015).

Outside the area

Although the collection of the tax is a metropolitan responsibility, revenues may be shared with municipalities according to a joint agreement. The question is to identify whether the partition of tax collection corresponds to the demand for public investment (new population or housing units) or to the supply (spending in public facilities).

- A supply based on share of tax revenues: institution who pays for infrastructure received the revenues

Bordeaux decided in 2012 to transfer one-seventh of the total tax revenues to municipalities. This ratio was similar to what was done under the previous system of TLE. The allocation of the total amount to be shared is done according to the number of inhabitants (1/3 of the amount to be shared) and the amount of tax collected on the municipality perimeter (2/3 of the amount to be shared) with a minimum of 2,666 € per year (which is the average of revenues collected by small municipalities with less than 5,000 inhabitants). Redistribution was made according to the infrastructure demands.

Since 2016[9], the "*Pacte financier et fiscal* (PFF)" agreed that one-seventh of the amount of municipalities investments will be transferred to municipalities, with a maximum of the tax revenues collected on the perimeter of the municipality. Municipalities' investments are considered net from any other public institutions' subsidies. They are identified as investments made on development projects which have not been declared of metropolitan interest. Under this convention, TA revenues are mutualized according to the supply after 2016. Consequently, Bordeaux Metropole only keeps a small part of TA revenues which

[9] Bordeaux Metropolitan decision n° 2015/0640.

accounts for less than one percent of the infrastructure expenses (see Tables 11 and 12). It is in line with the hypothesis that metropolitan projects, which have a large spatial impact on land prices, contribute to the economic trend of the region and have few impacts on localized land value. On the contrary, municipal projects can contribute to land value discrepancies.

Table 11: TA revenues and actual distribution between institutions, Bordeaux Metropole, 2014-2017

	2014	2015	2016	2017
Total TA revenues (M€)	1.6	3.0	7.2	21.1
Metropole (M€)	0	0.2	0.7	2.6
Bordeaux (M€)	0.3	0.6	1.7	1.8
Other municipalities (M€)	1.3	2.2	4.8	16.7

Source: Authors, adapted from Bordeaux Métropole accountancy.

Table 12: TA revenues and public investment, Bordeaux Metropole and Bordeaux Municipality, 2014-2017

	2014	2015	2016	2017
TA Metropole (M€)	0	0.2	0.7	2.6
Infrastructure spending Metropole (M€)	456.7	403.4	360.6	508.7
TA/Infra Metropole (%)	0%	0.05%	0.2%	0.5%
TA Bordeaux (M€)	0.3	0.6	1.7	1.8
Infrastructure spending Bordeaux (M€)	141.5	108.3	80.0	94.1
TA/Infra Bordeaux (%)	0.2%	0.6%	2.1%	1.9%

Source: Authors, adapted from Bordeaux Métropole accountancy and ministry of Finance statistics.

But the main impact is to be seen on increased TA sectors as in Brazza. In the Brazza sector, the agreement/convention fixes the revenues transferred from metropole to municipalities: 75 percent of total costs are then paid by the municipality and 25 percent by metropole according to the metropolitan interest. Tax revenues will be transferred to municipality up to 47 percent of the cost of municipal infrastructure (program 2014). Bordeaux Metropole will keep 23 percent of tax revenues, which will finance 42 percent of the cost of metropolitan infrastructure. Table 13 shows the share of costs.

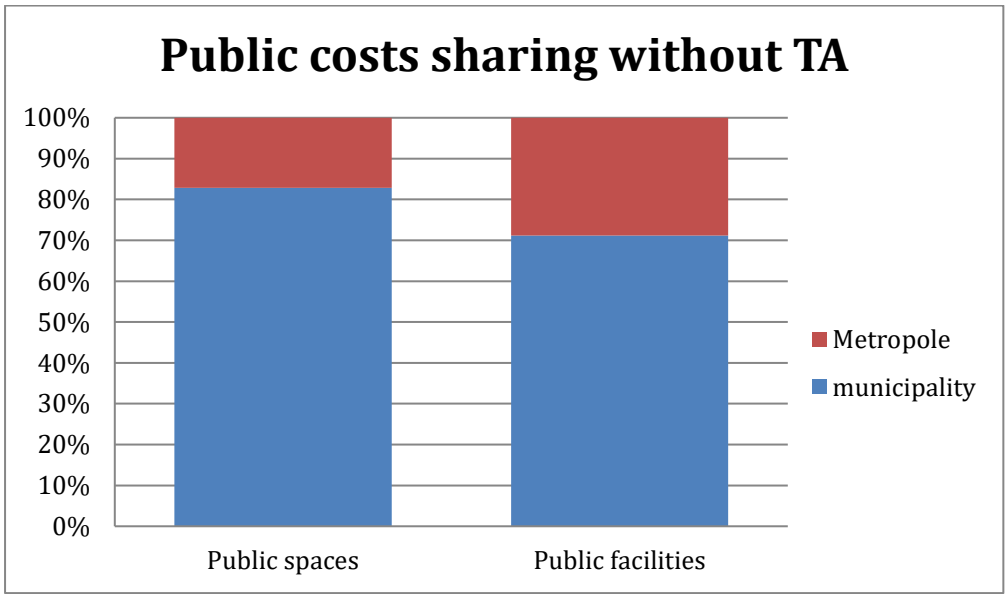
At the end, the TA as a land value capture instrument will reduce the cost for the municipality of Bordeaux: the municipality will directly pay 53 percent of public investments, and Metropole 58 percent.

Table 13. Tax and investment allocations in Bordeaux-Brazza (planned in 2014)

K€	Investment from municipality	TA allocated to municipality	Investment from Metropole	TA allocated to Metropole
Public spaces	19,100	7,500	9,150	1,100
Public facilities	33,500	17,200	8,350	6,300
together	52,600	24,700	17,500	7,400

Source: Authors, adapted from Bordeaux Métropole documents.

Figure 6. Tax contribution to public costs in Bordeaux-Brazza (as planned in 2014)



Source: Authors, adapted from Bordeaux Métropole documents.

In Bordeaux, the system of taxation concentrates tax revenues for the benefit of the area of tax collection. The municipality and Metropole benefit from some spillovers outside the Brazza area (in red and blue in Figure 6) which are not paid by developers. Spatial public costs are capitalized in local land values.

Strasbourg decided in 2012 to transfer 50 percent of the TA revenues to municipalities. Here again, the ratio was the one previously enforced in the TLE system. It has not been changed since. Unlike in Bordeaux, the transfers are not connected to municipalities' investment. Nothing specific is decided for the increased TA on Grande Ile.

Table 14: TA revenues and actual distribution between institutions, Strasbourg Metropole, 2014-2018

	2014	2015	2016	2017	2018
Total TA revenues (M€)	1.7	5.6	6.9	12.25	11.3
Metropole (M€)	0.9	3.2	3.4	7.1	5.4
Strasbourg (M€)	0.3	1.2	1.6	2.5	2.5
Other municipalities (M€)	0.5	1.2	1.7	2.3	3.1
TA Grande Ile (€)		1,1	102,7	161,9	441,6

Source: Authors, adapted from Strasbourg Métropole accountancy.

In Strasbourg, the benefit of taxation is shared between the different levels of institutions. It corresponds to the large scale of infrastructure investment. Compared with infrastructure spending (see Table 14), TA revenues is more evenly shared. The TA instrument is managed as a budget instrument, more than a land value capture instrument.

Table 15: TA revenues and public investment, Strasbourg Metropole and Strasbourg Municipality, 2014-2017

	2014	2015	2016	2017
TA Metropole (M€)	0.9	3.2	3.4	7.1
Infrastructure spending Metropole (M€)	251.4	211.6	214.3	188
TA/Infra Metropole (%)	0.4	1.5	1.6	3.8
TA Strasbourg (M€)	0.3	1.2	1.6	2.5
Infrastructure spending Strasbourg (M€)	118	97	60.6	64
TA/Infra Strasbourg (%)	0.3	1.2	2.6	3.9

Source: Authors, adapted from Strasbourg Métropole accountancy and Ministry of Finance statistics.

Metropolitan infrastructure investments in Bordeaux (central green axis, public transport line) are not numerous and essentially paid by the Metropolitan budget. Municipal infrastructure and facilities are directly designed for local users, and they improve the quality of life. As the area is separated from the city center by the river and a railway line, the impact of this infrastructure investment is more localized.

In Strasbourg, the issue is different for commerce interests and for residents. The quality of life for residents is improved by public investments: less traffic and improved environmental quality. Landowners, residents, and investors all benefit from increased land values, even if they don't pay the tax. Those who benefit from infrastructure but do not live in the area (tourists, salaries) and do not pay the tax may pay indirectly when the commercial products are more expensive. These inflows and outflows contribute to a redistribution of the tax burden with other places and cities.

Conclusion

Our research focuses on the development tax (TA) in France, as an instrument which combines LVC and public benefit. We examined the implementation of the TA since 2012 at a national level and at a local level through two case studies. The social equity of the TA is in question.

Considering the large discrepancy of the TA implementation, which is shown in our national overview, our conclusion can only illustrate two particular cases for large cities: the redevelopment of an industrial area under the control of a local authority with the Bordeaux

case and an already dense historical city center which suffers from an obsolescence process and needs to be renovated in Strasbourg.

In both cases, they raise important issues for policy makers. The issue for local authorities is to stimulate private investments for the development of the area at reduced public cost. In addition to the revenues provided to finance public costs in the area, the increased TA instrument is analyzed as a tool that could also achieve social goals: guarantee access to the area for everyone, avoid gentrification, and preserve access to middle class households. The question of who pays the tax and who benefits from the development of the area is at stake.

The French increased TA is a hybrid instrument, which combines the nature of a fee paid by those who benefit from public infrastructure, accordingly to their own consumption, and the essence of a tax, collectively paid according to their income for a collective benefit. Our research points out how these two opposite principles could work together, and to what extent and at which conditions.

The case studies underline four main conclusions:

- Our cases report how increased TA enables local authorities to tax landowners and developers to help pay for infrastructure and planning costs which will generate a collective benefit. In Bordeaux, where land and housing prices are increasing in the whole city, it helps the local authority modify the land value balance between private and public stakeholders in a specific project area. Such an instrument can be recommended as a fee instrument which can also preserve or encourage equity.

- Thanks to optional reductions or exemptions on social housing or handicraft construction, local authorities can directly sustain equity goals: they create a connection between the amount of increased TA paid and income, or a firm's financial profit. Where regeneration is operated by scattered private real estate programs, like in Strasbourg, it operates a different burden for large companies' projects and small individual projects, but it is scarcely used to increase the progressivity of a widespread taxation. Alternatively, local authorities can indirectly reach improved equity by decreasing the total increased tax rate paid by private developers. In doing so, they transfer to the local real estate market the responsibility to spread the fee burden more equitably between products according to supply and demand.

- The increased TA can be analyzed as an instrument for public-private partnership in order to revitalize a borough in the city (by redevelopment of a derelict area or renovating an aging center), besides other contractual arrangements offered by the French legal framework (PUP). From our cases studies, we can acknowledge that the partnership relies on four conditions:

    - A tax rate level which satisfies the economic equilibrium of private developers, considering the target real estate market. Although we did not have access to developers' economic models, it appears that the tax rate can have an impact on construction selling prices, either dissuasive or generating a slippage of the project towards wealthier occupiers. In the case of Strasbourg, we put forth the hypothesis that the high tax rate is a strategy for the municipality to attract high priced projects in the area. In so doing, the

municipality aims to reverse the deteriorating real estate market trend in this part of the city center.

- Local authorities face few identified developers on large redevelopment projects. It is a key difference between Bordeaux-Brazza and Strasbourg's city center. In Strasbourg, the great number of small developers gives no chance for the municipality to cooperate with them. On the contrary, in Bordeaux, local authorities collaborate with identified private developers and landowners to design a project for the borough that includes several collective amenities (infrastructure, mix functions, soft mobility conditions, etc.) and to achieve the project whilst satisfying the economic and social requirements from the private sector.

- A clear announcement of public infrastructure to be made is a condition for the private sector to invest in the area and contribute to the development of the borough. The TA secures public commitment on the area, even if it does not tell when infrastructure will be done. In return, local authorities benefit from the time flexibility, provided that public goods like roads and other infrastructure are not required in the short term as a precondition to new development.

- A planned use of reduction and exemption of the tax as incentives for the private sector and control of natural evolution of the market. The two cases present different administration of the reductions and exemptions and reveal some distortive effect. The low revenues from the TA in Strasbourg, due to the reduction of tax, make it necessary to find other sources of revenue.

- At a local level, the existence of an inter-municipalities body (EPCI) that shares the revenues of the tax with municipalities gives a chance to enlarge the scope of benefit of a public investment in infrastructure. It enables a spatial redistribution of the land value generated by the proximity of infrastructure or any kind of public incentive.

The research underlines some issues which could not be tackled and call for additional analyses. Analyzing two local cases does not give an overview of all situations. It appears necessary to investigate more cases in order to strengthen our conclusions in metropolitan contexts. In addition, other situations have been observed in Bordeaux and Strasbourg where, for example, the free market was very active and local authorities had difficulties to regulate private initiatives. The use of the TA as an instrument of regulation could be worth interest.

It has been a methodological choice not to analyze the Parisian case, considering the breadth of the subject and its specificity. It is still a critical case, by far the largest in France, which could complement our research as the Cocquière and O'hanna work (2018) clearly shows.

More specific issues concerning the level of the increased rate are also worth noting. We would like to understand what a "good" tax rate is, incentive enough to enable local authorities to manage an area and not too high to deter private investment. As it is difficult to get such information from the private sector, a suggestion is to study several cases where a 20 percent tax rate is applied. We identify 309 municipalities that approved a 20 percent tax rate on a specific zone. This could be a field for further investigation.

A last topic deals with the “border” effect of a tax decision. We could not go deep in that direction, looking at the impact of the increased TA on surrounding neighborhoods. We suggest property owners benefit from new developments and infrastructure without paying the tax when they live close to the area.

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Glossary

EPCI: Public Establishment for Intercommunal Inter-municipal Co-operation, or intercommunal Inter-municipal cooperation body/ *Etablissement public de coopération intercommunale*

FB: Property tax on built land/ *Taxe foncières sur les propriétés bâties*

FNB: Property tax on unbuilt land / *Taxe foncières sur les propriétés non bâties*

LVC: Land Value Capture

PLAI: Subsidized rental loan for integration/ *Prêt locatif aidé d'integration*

PLH: housing local plan/ Plan Local de l'Habitat

PLU: Local Urban Plan/ *Plan Local d'urbanisme*

PLUS: rental loan for social needs/ *Prêt locatif à usage social*

PTZ: Loan with zero interest rate/*Prêt à taux zéro*

PUP: partnership urban project/ *projet urbain partenarial*

SAD: special assessment districts

TA: Development tax/ *taxe d'aménagement*

TAM*:* increased development tax / *taxe d'aménagement majorée*

TDR: transfer of development rights

TDR: transfer of development rights

TLE: Local Tax for Infrastructure / *taxe locale d'équipement*

TOD: Transit-oriented development

ZAC: Comprehensive development zone/ *Zone d'aménagement concertée*

Annex

Annex 1: Criteria for selection Bordeaux and Strasbourg

Criteria	Bordeaux Metropole	Strasbourg Metropole	Reference
Population (2015)	773,542	487,300	National Census
Population evol. % (2010-2015)	+7.2%	+2.65%	National Census
Nb of communes	28	33	National Census
Median household income, €/year (2015)	21,433	19,940	National Census
Total housings	405,181	246,704	National Census
number of social housing units / number of housings units (%) 2017	23%	19.3%	Inventaire SRU
General TA rate (%)	5%	5%	Fiscal services
Special TA rate sectors, % (2016)	3%	5%	Fiscal services
Max TA rate difference (%, 2016)	5	5	Fiscal services
TA revenues M€ (métropole + municipalities, 2017)	21M€	12,2M€	Fiscal services
Public investment, M€ (total investment for 2015-2017, metropole + municipalities)	611M€	330 M€	Local Public Accounts
	Municipality of Bordeaux	Municipality of Strasbourg	
Population (2015)	249,700	277,300	National Census
Population total evol.% (2010-15)	+4,4%	+2%	National Census
Median household income, €/year (2015)	21,404€/year	18,115€/year	National Census
Poverty rate (number of people under 60% median income)	17.2%	24.8%	National Census
Number of social housing units / number of housings units (%) 2015	(18,566 units) 12.1%	(32,905 units 22.3%	Répertoire du parc locatif social
Total housing stock	152,926	147,331	National Census
Building permits annual rate (average 2015-2017 % total housing stock)	3,126 units 2.0% per year	2,241 units 1.5% per year	Sitadel
Public investment M€ (total investment for 2015-2017)	94 M€	74 M€	Local Public Accounts

Municipality of Bordeaux is included in a Metropolitan Institution, so is Strasbourg. Metropole and municipalities have different assignments, which are complementary.

Annex 2: Location of Bordeaux and Strasbourg in France

Annex 3: Perimeter of Bordeaux-Brazza and elements of program (Bordeaux Metropole)

Source: Bordeaux Métropole official documents.

Annex 4: Perimeter of Strasbourg-Grande Ile (zone called CEN UA5 in Metropolitan documents)

Source: Strasbourg Métropole official documents.

Annex 5: United States: Summary of legal framework for general taxes, land use zoning, and development impact fees

We summarize below the legal framework used in the United States, and in particular, the state of California, to support taxes, land use zoning actions (regulatory), and development impact fee (revenue) actions by local governments to support land value capture mechanisms as they pertain to affordable housing.

Legal issues regarding inclusionary housing

Inclusionary housing ordinances rely on the police power of local government to take actions and adopt laws and policies that protect the public's health, safety, and welfare. In *Miller v. Board of Public Works*, 195 Cal. 477 (1925), the California Supreme Court found that local governments in California could legitimately employ their police powers to protect the general welfare through enactment of zoning ordinances creating residential zones reserved for single-family housing. Over the years, the US Supreme Court has held the police power to be quite broad, especially in the context of local land use law. The California Supreme Court, in the San Jose Inclusionary case, wrote a strong opinion defending the police power of cities to zone land to accommodate affordable housing through local ordinances such as inclusionary housing. Inclusionary zoning represents local government's use of the police power to correct past and continuing disparities to further the general welfare.

Inclusionary ordinances have been challenged as a violation of the prohibition against taking without just compensation in the Fifth Amendment of the United States Constitution and Article I, section 19 of the California Constitution. In *Homebuilders of Northern California v. City of Napa*, 90 Cal. App. 4th 188 (2001), the California Court of Appeal found that although the inclusionary housing ordinance imposed a significant burden on developers in Napa, it provided significant benefits to the public by substantially advancing a well-recognized, legitimate state interest.

In 2009 the California Court of Appeal in Palmer vs. City of Los Angeles (2009) 175 Cal.App.4th 1396 ("Palmer") issued a ruling that prohibited the City of Los Angeles from conditioning approval of a specific plan for a large rental housing development upon its provision of affordable rental housing units. The California Supreme Court that same year refused to hear the case, letting the decision of the lower court stand. "Palmer" found that a California statute, the Costa Hawkins Rental Housing Act (Civil Code §§ 1954.50 et. seq.) ("Costa Hawkins"), which placed statewide restrictions on rent control when no public subsidy was provided, invalidated the provisions of local planning approvals or ordinances which conditioned permitting for rental housing on the set aside of affordable rental units.

In *California Building Industry Association v. City of San Jose*, 1 10 CV167289 (2012), the Santa Clara County Superior Court invalidated the City of San Jose's inclusionary housing ordinance, concluding that the City had failed to provide "a legally sufficient evidentiary showing to demonstrate justification" for the ordinance's exactions of affordable units or in-lieu fees. The judgment also enjoined the City from enforcing or implementing the ordinance. While San Jose did acknowledge the Palmer decision and had suspended its requirements with regards to new rental housing, it had continued to enforce the ordinance for new owner housing.

In 2017, the California legislature enacted a state law providing explicit authority for local government to impose affordable housing requirements on new rental housing developments as a condition of approval (inclusionary housing). AB 1505 restored the authority of cities and counties to require the inclusion of affordable housing in new rental housing projects, thereby superseding the 2009 decision of Palmer/Sixth Street Properties, L.P., et al. v. City of Los Angeles (2009) 175 Cal.App.4th 1396.

The California Supreme Court supported the San Jose inclusionary housing ordinance as a legitimate exercise of its police power to promote the general welfare. The California Supreme Court decision in San Jose stands as a seminal ruling upholding the police powers of local jurisdictions to zone land while requiring the provision of affordable housing by private, market rate residential developers.

Specifically, the California Supreme Court found:

- **Inclusionary requirements are land use regulations, not "exactions."** Inclusionary zoning is not an exaction because it does not require a conveyance of a property interest. Inclusionary housing ordinances are land use regulations that merely restrict the use of property by limiting the price of some units.

- **Inclusionary ordinances are valid** if they are "reasonably related" to "legitimate public purposes." The Court found that "unquestionably constitutionally permissible purposes" for adoption of an inclusionary requirement include:

    1. Increasing the number of affordable housing units in a community when there is an insufficient number in relation to the community's "current and future needs,"

    2. Assuring new affordable housing units "are distributed throughout the city as part of mixed-income developments" in order to:

        - "Obtain the benefits that flow from economically diverse communities"
        - "Avoid the problems that have historically been associated with isolated low-income housing."

- **In-lieu fees are not exactions**. In-lieu fees as an alternative to on-site inclusionary requirements are not "mitigation fees" or exactions and, therefore, are not required to be related to some impact of new housing development. (Public Interest Law Center California Newsletter 2016)

<u>Legal requirements for development impact fees</u>

In contrast to the police power authorization of cities to zone land to provide affordable housing as a community benefit, fees on development in California are subject to two overlapping sets of legal requirements:

- Constitutional requirements of nexus and "rough proportionality" under the U. S. Supreme Court cases of *Nollan v. California Coastal Commission,* 483 U. S. 825 (1987), and *Dolan v. City of Tigard,* 512 U.S. 374 (1994); and

- California's statutory "reasonable relationship" requirements under California Government Code sections 66000-66010.

Although legally distinct, these two standards are substantively similar and in practice a development fee that satisfies one will almost certainly satisfy both. The California Supreme Court in *Ehrlich v. City of Culver City*, 12 Cal. 4th 854, 867 (1996), concluded that the two standards "for all practical purposes, have merged."

A local government charging a fee must make an affirmative showing that: (1) those who must pay the fee are contributing to the problem which the fee will address; and (2) the amount of the fee is justified by the magnitude of the fee-payer's contribution to the problem. In designing a fee on new residential or commercial development to assist the provision of affordable housing, there is now likely to be little dispute that such development, by increasing employment, also increases the demand for housing for the added employees, and that market-rate housing development, with no public assistance, will not provide housing affordable for the additional lower-earning employees. The main legal concern is the amount of responsibility for providing housing that is assigned to new development, and thus the appropriate fee level. Non-residential nexus fees have been successfully upheld against legal challenges.
In *Koontz v. St. Johns River Water Management District* ("Koontz"), the U.S. Supreme Court held that the requirements of Nollan and Dolan for essential nexus and rough proportionality apply even when a jurisdiction denies a permit for development. Further, the Court held in this case that the government's demand for property from a land use permit applicant must satisfy Nollan and Dolan requirements, even when the government's demand is for money only (that is an in-lieu fee). There is some suggestion in Koontz that the Court may look more closely at impact fee calculations going forward.