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**Bridging land value capture with land rent narratives**

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### Article

**Citation** (please note it is advisable to refer to the publisher's version if you intend to cite from this work)

**Vejchodská, E, Barreira, AP, Auziņš, A, Jürgenson, E, Fowles, S and Maliene, V (2022) Bridging land value capture with land rent narratives. Land Use Policy, 114. ISSN 0264-8377**

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19

# 20 Bridging land value capture with land rent 21 narratives

22

## 23 **Abstract**

24 Urban land values have reached unprecedented levels in many parts of the world. Many scholars  
25 direct their research on their utilisation for public purposes. Two established research communities  
26 can be traced – the community referring to land value capture comprised mainly of urban planners  
27 and lawyers, and the community of economists discussing land rent. The relatively low level of  
28 interrelations between these communities prevents an effective sharing of their research outcomes.  
29 This contribution seeks to strengthen interconnections between these communities by characterising  
30 the narratives of both research communities, and synthesising their views.

31 The research is largely built on systematic literature review with content analysis undertaken using  
32 the NVivo software. The analysis focussed on the terminology used, the specific causes of land value

33 increase, rationales and instruments used for land value capture, and the purpose of using the  
34 collected money to investigate the interconnections between both research communities.

35

36 **Keywords:** land value; land rent; value capture; taxation; land

37

## 38 1. Introduction

39 Interest in rising land values and the possible use of land values for public purposes has recently grown  
40 exponentially among scholars (see, e.g. Gerber et al., 2018 and Muñoz Gielen and van der Krabben,  
41 2019; within the economic community, e.g. Stiglitz, 2015) as well as practitioners (HCLGC, 2018). In  
42 this context, Muñoz Gielen and Lenferink (2018) speak of an overall societal trend of declining public  
43 sector responsibility for financing public infrastructure. According to them, public authorities are  
44 actively looking for innovative sources of financing. Many current scientists and practitioners perceive  
45 the rise in land values as a potentially significant source of public finance.

46 Alterman (2012) provided a valuable review of approaches to and rationales for land value capture,  
47 together with an overview of the terminology used in this area of interest. Her contribution describes  
48 the situation among the research community of land value capture, which contains mainly urban  
49 planners and lawyers in planning law. However it is only a part of the story, as another narrative takes  
50 place from the perspective of economic theory and other related disciplines discussing land rent.<sup>1</sup>  
51 Land rent theory was sidelined within economics for almost the whole of the 20th century (Gaffney,  
52 1994), but currently it is regaining importance amongst the academic community as respected  
53 scholars including William Vickrey, Robert Solow and Joseph Stiglitz help to resurrect broad interest

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<sup>1</sup> A related branch of literature focuses on the economic analysis of the effects of value capture instruments using neither of these terms (e.g., for the area of impact fees analysis, see the works of Ihlanfeldt and Shaughnessy, 2004; Mathur et al., 2004).

54 in taxing land rents and discuss distinctive causes of land rent rise and rationales for land rent taxation.  
55 Economists and other social scientists start to consider land rent taxation not only as an efficient  
56 source of public finance and as a theoretically possible single tax to procure local public goods  
57 provision (e.g. Arnott and Stiglitz, 1979), but also as a remedy to current societal problems including  
58 the uneven distribution of wealth (Stiglitz, 2015).

59 The two communities of scholars; the community explicitly speaking about land value capture and  
60 scholars referring to land rent, do not interact often which prevents an effective sharing of their  
61 research outcomes. This article aims to highlight how the findings of the two communities interrelate  
62 to enable both of them to easily access the ideas of the other research community, and to benefit  
63 from this mutual exchange. Accordingly, the article intends to highlight the links between these two  
64 research communities.

65 The narratives of the two communities tend to be internally concise, although different authors stress  
66 other aspects of the topic. Some of these differences follow from the focus in interest of these  
67 research communities: the land value capture community focus predominantly on the increase in land  
68 value, whereas the land rent community focus on the full land value.

69 This article characterises the building blocks for both of these research communities, searches for the  
70 interconnections between them and synthesises their views. The results are informed by the  
71 systematic literature review utilising NVivo content analysis of the land value capture research agenda  
72 and a directed literature review of publications of the most respected and influential authors dealing  
73 with land rent, property taxation and housing prices within mainstream economic arena combined  
74 with the content analysis of their view.

75

## 76 2. Historical division of land value research communities and the 77 return of land rent in economics

78 The principle purpose of this section is to highlight the work of key economists in the development of  
79 relevant theory underpinning land rent without providing a full historic overview. The significant  
80 contributions of key economists are highlighted adopting a chronological perspective concerning the  
81 emergence of land rent economic theory. The section will also summarise current progress within the  
82 land value capture research community.

83 The first scholars observing land rents were French physiocrats in the mid-18th century who  
84 associated the value of land primarily with its use for agricultural production. Also within classical  
85 economics of the 19<sup>th</sup> century, land played a significant role in the economic analysis. Rent was defined  
86 by Ricardo (1817, pp. 40) as the compensation paid to the landlord for its “original and indestructible  
87 powers”, or by von Thünen who stressed immobility of land and gave importance to transportation  
88 costs by characterising land rent as the payments to the landlord for a better location (see Samuelson,  
89 1983). Over time, the importance of land rents had gradually shifted from agriculture to the urban  
90 environment, hand in hand with the declining importance of agriculture in the national economy  
91 (Stiglitz, 2015; Piketty, 2014), and classical economists also started to be interested in urban land  
92 rents. They also raised the issue of taxation of land rent, besides Ricardo for instance John Stuart Mill  
93 (1848), who considered rents as unearned as they are accidental without any exertion or sacrifice.  
94 Henry George (1879) was the most significant propagator of urban land rent taxation in the time of  
95 classical economic theory.

96 With the transformation from classical to neoclassical economics, a significant withdrawal from the  
97 analyses of causes and consequences of high land rents can be observed within mainstream  
98 economics (for the critics of this trend, see, e.g., Brueckner, 1986; Gaffney, 1994). Land lost the glory  
99 of specificity and began to be considered a standard factor of production, similar to capital (machinery,  
100 factory halls), or human labour. Discussions about land rent largely shifted to urban economics as a

101 specific economic discipline. The analysis of urban economics was rather positive, focusing on the  
102 description of the phenomenon of the origin of land rent without much ambition to normatively assess  
103 and suggest uses of those rents for public financing purposes.

104 The situation was different among urban planners and lawyers analysing the law of spatial planning  
105 or researchers dealing with public policy. These scholars discussed the consequences of high urban  
106 land prices continuously and sought for the introduction of legal instruments to soften the impact of  
107 high land values on society and to use them for public purposes. Alterman (2012) summarised how  
108 these ideas penetrated into planning practise during the 20<sup>th</sup> century. Within these disciplines, a field  
109 dealing with land value capture has established in academia and is currently gaining in importance  
110 (e.g. Alterman, 2012; van der Krabben and Needham, 2008; Kresse et al. 2020).

111 With the combination of ever-increasing real estate prices in cities, deteriorating housing affordability,  
112 and the widening gap between the rich and poor in society, the criticism of mainstream economists  
113 for largely ignoring land rents increased (e.g. Stiglitz, 2015). According to Ryan-Collins et al. (2017),  
114 land cannot be considered only as a standard factor of production. Land is incomparable to capital or  
115 labour as it is immobile, permanent, and land rent, contrary to excess returns on capital leading to  
116 increasing investments in capital, cannot lead to an increase investment into land. Although land rent  
117 is not a focal point of general economic discussions today, unlike the time of classical economics, it is  
118 slowly beginning to return to being a central issue. Thomas Piketty, one of the most widely read  
119 contemporary social scientist discussing inequality, launched an intense debate on the unfortunate  
120 consequences of high land rents. As he emphasised (2014, pp. 6): *“It would be a serious mistake to*  
121 *neglect the importance of the scarcity principle for understanding the global distribution of wealth in*  
122 *the twenty-first century. To convince oneself of this, it is enough to replace the price of farmland in*  
123 *Ricardo’s model by the price of urban real estate in major world capitals...“*. Leading representatives  
124 of economics have also become more seriously interested in land rents (e.g. Stiglitz, 2015). These  
125 personalities largely shape the discourse on the normative issues of the appropriate tax system within

126 the scientific as well as politicians' and practitioners' community and can return land rent among the  
127 central themes of economic discipline. As Mattauch et al. (2018, pp. 2) put it: "*the rents are back as a*  
128 *potential source of public revenue*".

129

### 130 3. Methodology

131 Different methodologies were applied to study the narratives of the two research communities  
132 highlighted in this article. Land value capture literature is relatively extensive and already well  
133 established in academia. For this area of interest, a systematic literature review was undertaken  
134 followed by a content analysis using NVivo software. Another approach was used for identifying new  
135 trends within economic literature discussing land rent. The focus was on recent works of the most  
136 respected economists supplemented by the outcomes of positive analysis of urban economics on the  
137 causes of land value rise. Its content analysis did not necessitate to use any software with respect to  
138 a low number of publications analysed. Both approaches are described separately below.

#### 139 3.1. Systematic literature review and NVivo content analysis for land value 140 capture community

141 Systematic literature review summarises and efficiently integrates current knowledge (Mulrow, 1994).  
142 The consistency and transparency of the systematic review enabled the authors to identify, critically  
143 assess and synthesise the results of primary studies. The steps of the systematic literature review can  
144 be derived from the framework described by Cooper (1998) as firstly, research question definition  
145 stage followed by literature search stage, data evaluation stage, data analysis stage, and finally  
146 interpretation and presentation stage. Cooper (1998), mainly in connection to quantitative data  
147 analysis, suggests for the data analysis stage that only methodologically sound studies should be  
148 included. The variety of methodologies and topics within the land value capture research agenda  
149 made it difficult to apply a consistent quality appraisal for individual studies. As it is possible to

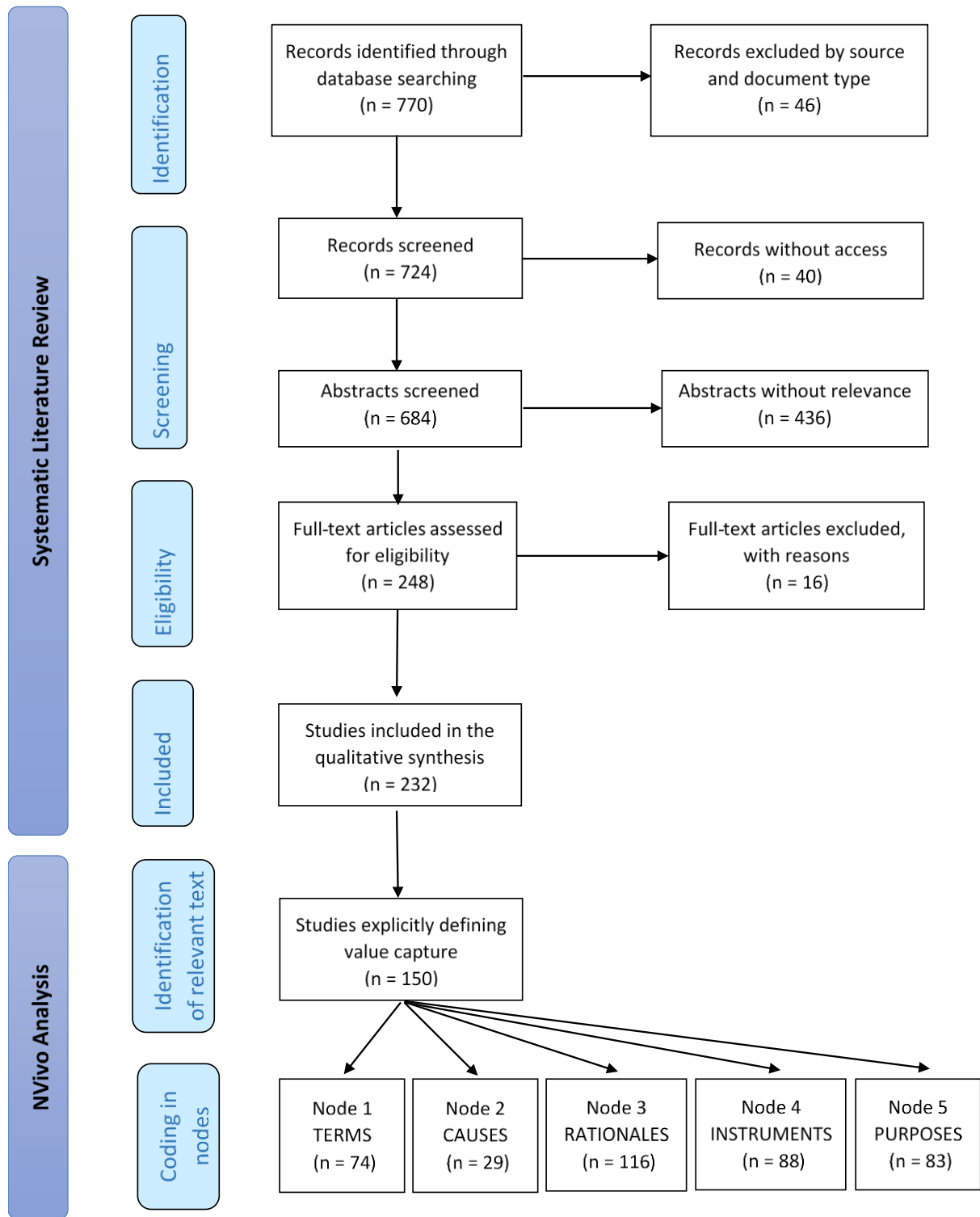
150 appraise the overall journal quality based on the international respect of the editorial board and the  
151 respect of the journal gained within scholar community, only articles published in high-quality  
152 academic journals were included into analysis (impact factor did not play a crucial role, as studies from  
153 selected journals without impact factor were included and similarly some studies were excluded from  
154 the analysis despite being published in a journal with an impact factor). Further, only highly reputed  
155 book publishers were included in the search.

156 The systematic literature review focused on the term 'value capture' and how this term is used within  
157 the land development and land policy literature field. The gathering of the literature proceeded in the  
158 steps described in Appendix in detail. Altogether, 770 literature sources were gathered. The PRISMA  
159 (Preferred Reporting Items for Systematic Reviews) approach was adopted for inclusion and exclusion  
160 criteria (Moher et al., 2009) – see Figure 1. The final set for content analysis comprised 232 sources,  
161 including 215 peer reviewed published articles, 3 books and 14 book chapters.

162 The content analysis of the text conceptualising land value capture within the original articles was  
163 undertaken. The structure of the content analysis was developed during the coding process and  
164 resulted in the following five defined building blocks describing the narrative: (i) the terms used; (ii)  
165 causes of land value rise considered; (iii) rationales for capturing the land value claimed; (iv)  
166 instruments for capturing the land value analysed; and (v) purposes of the use of collected money  
167 suggested.

168 As the literature of land value capture community is extensive, its content analysis was performed  
169 using the NVivo 12 software. After importing the 232 documents into NVivo, relevant fragments of  
170 the text were searched for in the connection of value capture theme. The text fragments were coded  
171 in nodes according to the building blocks defined. Each node was divided into several subnodes  
172 characterising different subfields discussed within each node. Figure 1 brings the number of hints  
173 found within the text for each node. The literature review of the land value capture community stream  
174 was undertaken in March 2019. Also more recent studies are discussed where appropriate.



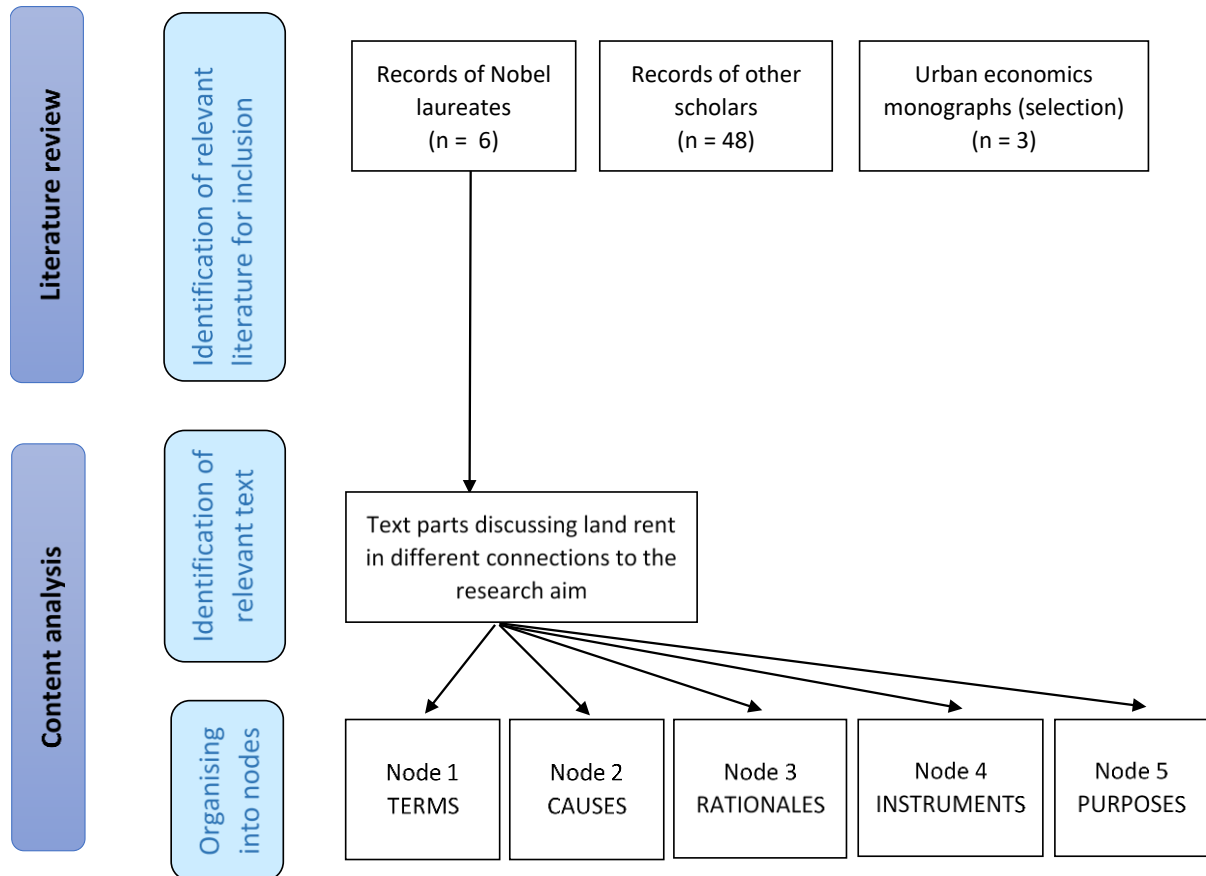


175

176 *Figure 1 The methodological approach used for analysing the land value capture stream*

### 177 3.2. Literature review and content analysis for land rent community

178 For the purpose of land rent community analysis, a separate literature review was undertaken. The  
179 review of the literature discussing land rent tackled positive analysis of land value increase as well as  
180 normative questions of rationales for taking the value from landowners and purposes of the use of  
181 collected money. For relevant literature search within economic literature, the terms 'land rent', and  
182 additionally also 'hous\* prices', 'land tax\*' and 'property tax\*' were used. For the positive aspects,  
183 also monographs of urban and regional economics were included into the set of analysed literature.  
184 For the normative questions, a focused review was appropriate as transferring land rent to serve  
185 public purposes is not a generally accepted topic within economic literature. The review was first  
186 limited to laureates of the Prize in Economic Sciences in Memory of Alfred Nobel, to grasp new ideas  
187 with the potential to shape the overall discourse about land rents within the economic analysis. This  
188 set of sources was extended by other respected scholars who have gained attention in the area of  
189 land rent discussion, based on the number of citations of their work. 51 articles and 6 books entered  
190 the final set for analysis. See Figure 2 for the quick insight into the methods used for analysing the  
191 land rent stream.



192

193 *Figure 2 The approach used for analysing the land rent stream*

194

## 195 4. Results

196 This chapter presents the narratives of both streams of thoughts in detail – of land value capture  
 197 community as well as land rent community. The subchapters are organised according to the building  
 198 blocks of the narratives identified. Table 1 provides a summary of the main views of both research  
 199 communities. Further below, each point is detailed.

200 *Table 1 Summary of the main views of land value capture and land rent community*

	<b>Land value capture community</b>	<b>Land rent community</b>
<b>Terms</b>	<b>Land value</b> Land value, property value	<b>Land value</b> Land rent / land value
	<b>Land value rise</b> Land value increment Land value uplift Unearned increment Value added to land Value premium Plus value Windfall Development value Betterment	Site rent / site value
<b>Causes of land value rise</b>	<b>Provision of public infrastructure</b> <b>Development control decisions</b> <b>General economic and community trends (rarely)</b>	<b>Land specifics</b> Asset with fixed supply Immovability - monopoly power of landowners
		<b>Supply side</b> Urban planning setting limits on developable land <b>Demand side</b> Growing demand of people for space The success of urbanised environment Local amenities Public subsidies related to land Monetary policy Expectations of investors
<b>Rationale for land value taking</b>	<b>Fairness</b> Unearned income / windfall Moral obligation of landowners	<b>Efficiency</b> In taxation (land tax neutrality) Land tax financing public services with economies of scale
	<b>Practical reasons</b> Finance local governments Make viable public investments	In land use Stronger economy thanks to decrease of rent-seeking Optimizing the rate of construction
	<b>Equity (rarely)</b> Redistribution	<b>Equity</b> Progressivity of land tax under some assumptions
	<b>Efficiency (rarely)</b> In taxation (land tax neutrality) In land use Optimal amount of public infrastructure Decrease in land speculation	<b>Legitimacy: stabilisation of democracy (rarely)</b>
<b>Instruments</b>	<b>Recurrent taxes and other taxes</b> Single rate property tax Pure land value tax Split rate property tax Tax increment financing Transaction taxes	<b>Land value tax</b> <b>Impact fees</b>
	<b>Non-recurrent obligations</b> Developer contributions, developer obligations, planning obligations, developer charges, impact fees  Inclusionary zoning <b>Levies connected to added land value by planning</b> <b>Government ownership of land or development rights</b> <b>Other instruments</b> Joint development mechanisms Land readjustment User payment mechanisms	
<b>Purposes of the use of collected money</b>	<b>Financing public infrastructure</b> Pay-back previous public investment Finance planned public investments	<b>Financing public infrastructure (impact fees)</b> <b>Source of public finance (land taxes)</b> Public services with economies of scale
	<b>Cover the costs of social needs</b> Provide social / affordable housing Provide specific public services	Local government needs General needs of public finance
	<b>Local community needs in general</b>	

## 202 4.1. Land value capture community

### 203 4.1.1 Terms used

204 The key terms and definitions associated with an increase in land value or property value (e.g. Heeres  
205 et al., 2016 refer to property values while speaking about value capture) include 'betterment', 'plus  
206 value' and 'windfall' but these variations provide potential weaknesses for international application.  
207 For example 'betterment' is more of a British term associated with UK and its former colonies  
208 (originating in the UK following the emergence of the planning system in 1947), 'plus value' more of a  
209 term with roots in Spanish-speaking countries, whilst 'windfall' is not considered to be a professional  
210 or legal term (Alterman, 2012, pp. 6). McAllister (2019) or Higgins (2019) refer to 'land value uplift',  
211 whilst Agyemang and Morrison (2018), Cuenya (2019) or Smolka and Amborski (2000) refer to 'land  
212 value increments'. Different ways of expressing the land value rise is common to this group of scholars.  
213 Some authors also speak about 'property value premium' (Dziauddin et al., 2015), 'added value'  
214 (Vadali et al., 2009), or 'development value' (Crook and Whitehead, 2019). Smith and Gihring (2006)  
215 also use the term 'unearned increment' in relation to value capture and this notion that the value to  
216 be captured is unearned or indeed undeserved features in the work of Smolka (2012). Using the term  
217 'unearned' helps to justify the process and provides a rationale for the introduction of land value  
218 capture instruments as discussed further below.

219 In the UK and elsewhere, the singular term 'betterment' has evolved to become associated also with  
220 land value capture instruments by referring to 'betterment levies' or 'betterment taxes' (Fensham and  
221 Gleeson, 2003; Medda, 2012; Walters, 2013).

222

### 223 4.1.2 Causes of land value rise

224 Scholars within the land value capture research community emphasise the enhancement of land value  
225 as resulting from actions other than the landowner, most notably actions by the public sector. The  
226 provision of public infrastructure in general as a cause of land value rise appears in many literature

227 sources, often with the emphasis on local authorities as the providers of public infrastructure (Nguyen  
228 et al., 2017). Some authors focus on the transport related infrastructure (Enoch et al., 2005; Medda,  
229 2012; Mittal and Kashyap, 2015; Zhao and Larson, 2011). In this connection, rail development gains  
230 much attention (Chang and Phang, 2017; Sun et al., 2017).

231 Development control decisions by planning authorities also affect land values. More specifically, these  
232 are zoning modifications derived from land use regulations and arrangements in land use patterns  
233 (e.g. Garza and Lizieri, 2016; Rebelo, 2017; Viallon, 2018; Wu et al., 2019). Some authors speak about  
234 changes in development rights or land use rights in relation to planning highly affecting land values  
235 (Havel, 2017; McAllister et al., 2018; van den Krabben and Jacobs, 2013).

236 General economic development and overall community trends are also mentioned as land value  
237 increase causes by some authors (e.g. Rebelo, 2017). However, the scholars within land value capture  
238 community do not clarify the substance of these phenomena in detail. Other authors stress that urban  
239 land values rise as a result of community efforts or market forces (Smolka and Amborski, 2000) which  
240 makes good interconnections to how land values are perceived within economic literature.

241

#### 242 4.1.3 Rationale for land value taking

243 The rationale, or justification for land value capture, can partly be explained with reference to the  
244 terms associated with it. The analysis of terms highlighted a tendency to link the term ‘unearned’ with  
245 the increase in land value. This suggests there is some sense of moral judgement to consider the value  
246 increase as ‘unearned’ (obtained without merit), and as such it is justifiable for governments to  
247 capture this value. For example, Garza and Lizieri (2016, pp. 449) state that the intention of the  
248 imposition of a land value capture tool is to ‘reduce unearned landowner gains’, and similarly for  
249 Higgins and Kanaroglou (2016, pp. 611) the public sector should recapture the ‘unearned increment’  
250 from land value uplift following public sector investment in rapid transit systems. The rationale for  
251 land value capture is also provided with reference to ‘windfall’. For example, according to Jillela et al.

252 (2015, pp. 8091) “*Value capture opposes the windfall gains derived out of public infrastructure creation*  
253 *accrued to a privileged few as unearned income*” which brings together the unexpected nature of a  
254 windfall, together with the sense this is undeserved to help provide the rationale for land value  
255 capture. Alterman (2012) stresses also the moral obligation of landowners to give a part of the value  
256 back to community and she calls instruments built on this rationale as direct instruments of land value  
257 capture.

258 The other most commonly discussed rationale, land value capture as a practical way for public bodies  
259 to raise revenue, is considered by Alterman (2012) as more pragmatic. This rationale builds the basis  
260 for what Alterman calls indirect instruments for value capture and is used by many authors to justify  
261 value capture (e.g. Muñoz Gielen and Lenferink, 2018).

262 Some authors of land value capture stream adopt thoughts which base their argument on economic  
263 theory and use as reasoning of value capture also efficiency of land value taxation (e.g. Crook and  
264 Whitehead, 2019; Rebelo, 2017; Hughes et al., 2020). In this respect, also taxing the added value  
265 caused by gaining planning permission does not bring any distortions on land market provided the tax  
266 levied is lower than the land value added (Crook and Whitehead, 2019). Other authors argue for land  
267 value capture instruments by efficiency in land use, for instance via discouraging the overconsumption  
268 of infrastructure and land (Batt, 2001), or decrease in sprawl and land speculation (Farris, 2016). Also  
269 reasoning for land value capture based on fighting inequalities within society can be found (Sharma  
270 and Newman, 2018), or as a tool for steering land uses by imposing differentiated tax rates or charges  
271 (discussed among other possible rationales by Smolka and Amborski, 2000).

272

#### 273 4.1.4 Instruments used

274 The variety of instruments that are used for land value capture is wide. Alterman (2012) makes a  
275 distinction between instruments limiting private property and managing land in public hands, and  
276 those leaving land in private hands but capturing partly or totally the increased land value via direct

277 or indirect instruments. For the purposes of this article, the instruments are sorted into the following  
278 groups: (i) recurrent taxes and other taxes, (ii) non-recurrent obligations connected to land  
279 development; (iii) levies connected to added land value by planning; (iv) government ownership of  
280 land or of development rights, and (v) other instruments. This article covers possible value capture  
281 instruments in a broad sense. Not all the instruments systematized herein are necessarily agreed as  
282 value capture instruments among researchers.

283 Recurrent taxes include single-rate property tax, pure land value tax, split-rate property tax (land value  
284 tax in a broader sense), tax increment financing and transaction taxes. These taxes are either annual  
285 duties or apply repeatedly to the same land plot when changing ownership. Single-rate property tax  
286 applies the same tax rate to land and its improvements, i.e. buildings (Chapman, 2017; Gihring, 2001);  
287 pure land value tax imposes a tax rate only to land (Wenner, 2018); split-rate property tax imposes  
288 higher rates for land and lower for its improvements (Gihring, 2001; Rybeck, 2004). Tax increment  
289 financing captures the expected future property tax value increment generated from local area  
290 investment, its taxing aim is to finance infrastructure, services and debts (Chapman, 2017; Root et al.,  
291 2015). Transaction taxes are taxes on income generated from the sale of real estate (Crook and  
292 Whitehead, 2019; Hendricks et al., 2017; Muñoz Gielen et al., 2017) and cover capital gains tax and  
293 tax upon the transfer of title, also called as stamp duty.

294 Obligations connected to land development and deriving their magnitude from the costs of the  
295 provision of required infrastructure and other investments, such as affordable or social housing  
296 provision, are usually called developer contributions (McAllister et al., 2018), developer obligations  
297 (Alterman, 2012; Muñoz Gielen and van der Krabben, 2019), planning obligations (Crook and  
298 Whitehead, 2019), or particularly in the US context developer charges and impact fees (Murray, 2018;  
299 Smolka and Amborski, 2000). Inclusionary zoning is the US policy placing requirements on developers  
300 relating to affordable housing (e.g. Kim, 2020). Developer obligations can be in cash or in kind,  
301 negotiable or non-negotiable.



302 Payments derived from the added land value are sometimes called betterment taxes (Cervero and  
303 Duncan, 2002; Fensham and Gleeson, 2003), and in the Swiss context taxes are imposed on added  
304 land value created by zoning (Viallon, 2018).

305 Government ownership of land or of development rights result in the utilisation of instruments  
306 capturing the whole land value uplift by planning or at least seeking to recoup the cost of  
307 infrastructure and services established (Muñoz-Gielen and van der Krabben, 2019; van der Krabben  
308 and Needham, 2008). These are the sale of development rights (Mathur, 2015), the sale of  
309 developable land or land leasing (Hu et al., 2019) by the public authority. Governments acquire land  
310 for development through voluntary transactions (Chapman, 2017; Crook and Whitehead, 2019), use  
311 compulsory purchase, e.g. expropriation (Hendricks et al., 2017), or nationalise all land (Alterman,  
312 2012).

313 Rarely discussed land value capture instruments include joint development mechanisms as  
314 partnerships between a public body and a private entity to develop an area (Chapman, 2017, Nguyen  
315 et al., 2017). Some authors (e.g. Alterman, 2012) consider land readjustment as a value capture tool  
316 either. Due to the increasing price of readjusted land, some plots may go over to the public body as in  
317 German scheme capturing a part of the rising value (Hendricks et al., 2017). Some authors (e.g.  
318 Hendricks et al., 2017) consider also user payments as a mechanism for land value capture by which  
319 users must pay directly to the service provider of technical infrastructure (electric power, water supply  
320 and sewerage, gas, telecommunication).

321

#### 322 4.1.5 Purposes of the use of collected money

323 The land value capture community explicitly discuss the purposes of the use of collected money as an  
324 important element of the value capture approach. The most often referred purpose of collected  
325 money is financing public infrastructure. Muñoz Gielen and van Krabben (2019, pp. 8) claim:  
326 *"...landowners and developers should ... pay for the maintenance and improvement of existing public*

327 *infrastructure, or to pay the new public infrastructure directly or indirectly needed to support the new*  
328 *developed (or redeveloped) areas".* Scholars stress the importance of the covering the costs of  
329 necessary infrastructure for the new development (e.g. Havel, 2017; Kresse et al., 2020) and connect  
330 to this need the instrument of developer obligations. Some authors also discuss the need for pay-back  
331 of previous public investment, such as new rail. The tool frequently connected to the pay-back of  
332 public investments is tax increment financing (e.g. Rodriguez and Mojica, 2009).

333 Another frequently stressed purpose of the use of collected money is covering the costs of particular  
334 social needs, such as the cost recovery of the provision of social and affordable housing (McAllister et  
335 al., 2016; Muñoz Gielen et al., 2017; Rebelo, 2017). A less frequently discussed purpose is cost covering  
336 of the needs of local community in general; this view is supported by Agyemang and Morrison (2018)  
337 or Gozalvo Zamorano and Muñoz Gielen (2017).

338

## 339 4.2. Land rent community

### 340 4.1.1 Terms used

341 Economists and other social scientists connect 'land value' or 'site value' to the market value of land  
342 prior its improvements by cultivating or developing it. If land prices are discussed within economic  
343 literature, they are often synonyms of 'land value' (Muellbauer and Murphy, 2008; Needham, 1981).  
344 These scholars often use the term 'land rent' (Alonso, 1964; Cheshire and Sheppard, 2002; Clark, 1995;  
345 Haila, 2015; Hammel, 1999) or 'site rent' (Vickrey, 2001) for the returns paid to the landlord above the  
346 return which results from improvements of land. The term 'economic rent' is also used for the same  
347 purpose (e.g. Brown, 1941; Samuelson and Nordhaus, 1992), stressing the exclusion of any payments

348 for improvements of land (contrary to term 'rent' which is often used more broadly) and relating also  
349 to other factors of production with fixed (totally inelastic) supply.<sup>2</sup>

350

#### 351 4.1.2 Causes of land value rise

352 The fixed amount of land provides landowners with monopoly power (Ryan-Collins et al., 2017). Land  
353 immobility leads to spillover effects from one plot to another, in economic terminology to positive or  
354 negative externalities. The prices of real estate thereby reflect the investments on other plots in their  
355 vicinity (Cheshire, 2018; Muellbauer, 2017).

356 Land values are subject to market forces. Economists stress the price determination as the interaction  
357 of supply and demand. The determinants of rising land prices either work as drivers of the demand  
358 side or barriers on the supply side. Many scholars address this issue primarily discussing housing prices  
359 (Muellbauer and Murphy, 2008; Quigley, 2007; Gyourko and Molloy, 2015; Albouy and Ehrlich, 2018;  
360 Glaeser and Gyourko, 2018). The most significant limits on the supply side pointed out are land-use  
361 planning controls. These are sometimes criticised of being too restrictive leading to an increase in  
362 costs of housing exceeding the value of amenities brought by these restrictions, and therefore net  
363 welfare losses. Cheshire (2018) raises this issue for the context of South East England, opposed by  
364 Adams and Watkins (2018) who see planning interventions as being more complex than only placing  
365 limits to development, rather as a stimulus of the demand side.

366 A more complex picture of land value drivers can be found on the demand side. One such driver is the  
367 growing demand of people for space associated with demographic changes resulting in rising number  
368 of households due to population increase and the decrease in the average household size

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<sup>2</sup> Some economists started to use the term 'economic rent' also in another meaning for describing any payments to a factor of production in excess of the minimum amount necessary to keep it in the present use. This largely complicated clear communication within economic community, as this new usage is not relevant for land rent and land value capture areas of interest. See Brown (1941) for the clarifying commentary of this communication mismatch.

369 (Muellbauer, 2017). The demand for housing also increases as a consequence of rising incomes, which  
370 in turn leads to increasing individual aspirations for living space (Brueckner, 2000).

371 Agglomeration economies, the cornerstone of firm localization theory, are another cause of land value  
372 rise (Dekle and Eaton, 1999). Marshall (1890) defined following sources of agglomeration economies:  
373 knowledge spillovers among companies, the possibility of sharing the costs of specialised inputs like  
374 legal services, and the availability of a professional workforce, which reduces companies' costs of  
375 recruiting new employees. The success of urbanized environment is further enhanced by the  
376 investments in local public goods bringing economies of scale (Vickrey, 2001). These include public  
377 services and other activities associated with high fixed costs and low costs for providing services to an  
378 additional user. Thanks to these goods and services, people are willing to bear higher housing prices.

379 Local amenities also belong to drivers of land values. As Albouy (2016) shows on the US case study,  
380 the most valuable urban land occurs in areas close to the coast, with a lot of sunshine and mild climate.  
381 Residential land prices are affected by various local environmental amenities, including water quality  
382 of nearby water bodies (Leggett and Bockstael, 2000).

383 Public subsidies related to land also affect the demand side of land market. A considerable amount of  
384 literature focuses on the capitalisation of agricultural subsidies into agricultural land rents (for a  
385 review, see, Latruffe and Le Mouél, 2009). Hilber (2017) synthesises the current knowledge about the  
386 capitalisation of private and public investments into local housing prices which is more appreciable in  
387 areas of stricter housing supply constraints. He stresses possible adverse effects of public subsidies  
388 aiming to help the poor, often rather helping the landlords thanks to rising housing prices at the  
389 expense of renters. Empirical results of the capitalisation effect are brought by Gibbons and Machin  
390 (2008), or Gonzalez-Navarro and Quintana-Domeque (2016). Other type of public subsidies related to  
391 urban land stem from the failure to account for the total costs of new development, as highlighted by  
392 Brueckner (2000), such as infrastructure costs or the costs of building new schools and parks. If these  
393 costs are not fully reflected in the property tax against these new buildings, buyers are willing to pay

394 a higher price for the property. The value of infrastructure provided by municipality is thereby  
395 capitalised into land value.

396 Another land value driver is monetary policy. If central bank increases the supply of money by  
397 quantitative easing, investing in land prevents losses from expected higher inflation rate (Stiglitz,  
398 2015). The role of land is a store of value thanks to its non-degradability in this respect. Also higher  
399 availability of loans raises land prices (Aron et al., 2012), as it makes real estate more accessible to a  
400 broader spectrum of potential buyers.

401 Expectations of investors leading to housing market bubbles are another cause of changes in land  
402 prices. Expectations have an extrapolative element which can lead to an overevaluation on housing  
403 market after observing a time period of a quick price rise (Abraham and Hendershott, 1996). Investor's  
404 expectations hold true also for land price decreases, which can lead to undervaluation of real estates  
405 (Muellbauer, 2008).

406

#### 407 4.1.3 Rationale for land value taking

408 Most economists agree that tax on land value is an efficient source of public revenues (Oates and  
409 Schwaab, 2009). If land value is taxed, it does not affect the amount of available land and therefore  
410 has no distorting effects on the economy (Dye and England, 2009; Mattauch et al., 2018). The crucial  
411 conditions for price neutrality of land tax is its taxing independently from the current use, and fully  
412 informed pure profit maximizing landowners who utilize land according to its best use (Oates and  
413 Schwaab, 2009).

414 Despite the discussions on land tax neutrality, economists also discuss the effect of land tax on land  
415 use, as not all the assumptions for neutrality of the tax hold in reality (see, for instance, Bourassa,  
416 2009). Some economists see the potential of land tax in curbing sprawl by raising the capital to land

417 ratio on land for housing (Banzhaf and Lavery, 2010), or even as a forest protection tool with a high  
418 money-raising potential for the context of developing countries if primary forests stay untaxed  
419 (Kalkuhl and Edenhofer, 2017). A specific rationale of land taxation according to Cocconcelli and  
420 Medda (2013) is to act as a stabiliser against fluctuations in the real estate market.

421 Economic literature also discusses thoroughly equity issues of taxes. For example Plummer (2009)  
422 considers the land value tax as fair, as land value does not result from any efforts of its owner. She  
423 summarizes the research evidence concerning the distributional effects of the land tax. If land tax  
424 brings more progressivity into the tax system (a higher share of the income would be taxed away from  
425 the affluent people than the poor), more equitable distribution of the tax burden would be achieved.  
426 Such questions on the distributional effects were asked traditionally. Currently, unequal distribution  
427 of wealth in society, particularly in connection to rents, became highly important within economic  
428 literature. According to Stiglitz (2012), an unequal distribution of wealth in society can destabilise the  
429 whole democratic society and its shared values. A current key topic of interest is the increasing gap  
430 between the rich and poor (Piketty, 2014), and how wealth is transferred to a narrow group of the  
431 richest at the expense of the rest of society (Solow, 2014; Stiglitz, 2019). According to the new  
432 perspective formulated by Stiglitz (2015), an even stronger and more stable economy and higher levels  
433 of economic efficiency can be achieved by reducing inequalities in society thanks to the decrease of  
434 rent-seeking incentives. And as Stiglitz adds (2015, pp. 439): "*Much of the growth in inequality and the  
435 increase in the wealth-income ratio are related to an increase in rents and land values.*" The  
436 introduction of land rent taxation is a remedy for unequal distribution.

437

#### 438 4.1.4 Instruments used

439 Scholars discussing economic rent often suggest a single instrument – land rent taxation, also referred  
440 to as land value taxation (e.g. Dye and England, 2009; Stiglitz, 2015). Piketty (2014) considers a

441 progressive global wealth tax, including land rent taxation, which is supported also by Solow (2014).  
442 Other scholars discuss property tax as an alternative to land tax for practical reasons of complicated  
443 land values assessment, although property tax brings distortions by taxing also land improvements  
444 (Glaeser, 2013). Arnott and Petrova (2013) speak in this context about the necessary trade-off  
445 between the efficiency and ease of tax collection. On the other hand, under the benefit perspective,  
446 property taxes work as fees for local public services, if public services need to be increased with the  
447 intensity of development (Oates and Fischel, 2016; Glaeser, 2013) and may incentivise local  
448 governments to provide an adequate amount and quality of amenities (Glaeser, 1996).

449 Other scholars discuss taxation from the welfare economics point of view of the optimal land  
450 allocation among competing uses. Brueckner (2000) or Cheshire (2013) perceive impact fees as a  
451 remedy of an excessive development caused by the failure to fully account for infrastructure costs.  
452 The consistent financing of public infrastructure necessary for the creation of new development from  
453 land values would reduce excessive development at places where it would not occur without these  
454 public subsidies (Foldvary and Minola, 2017).

455

#### 456 4.1.5 Purposes of the use of collected money

457 Vickrey (2001) supported taxing land rents if these taxes were used to finance public services with  
458 economies of scale instead of too high user fees. He envisioned that these public services would be  
459 charged only up to the marginal costs of an additional user, and the rest would be covered by the land  
460 rent tax.

461 According to some economists (e.g. Dye and England, 2009), land rent tax could replace property taxes  
462 (in the US context these taxes build a considerable source of local government revenues). These  
463 scholars stress the inefficiency of property taxation, which taxes not only land, but also its  
464 improvements. These authors connect revenues of land taxation to local finances.

465 Other authors, such as Stiglitz (2015), perceive land rent taxation as a source of public finance in  
466 general without claiming for which purposes the money should be allocated. He is concerned with  
467 common questions of how to raise money for public needs in the most efficient way under  
468 distributional concerns.

469

## 470 5. Discussion of results

471 Given that many countries, as well as municipalities within countries, are looking for innovative  
472 resources for public spending, the utilisation of high land value for this purpose, mainly within urban  
473 areas, became an appealing topic for debate across researchers and practitioners. The initial literature  
474 review on land value capture, undertaken by the authors, identified two research communities  
475 comprising firstly economists and other social scientists, referred to as the 'land rent' community, and  
476 secondly urban planners, civil engineers, lawyers, referred to as the 'land value capture' community  
477 in this article. Whilst both groups are debating the same topic, the literature review and content  
478 analysis make clear that, although explicit interrelations between these two communities can be  
479 found (e.g. in Smolka and Amborski, 2000; Gihring, 2001; Garza and Lizieri, 2016; Crook and  
480 Whitehead, 2019), a lot remains as separate thoughts.

481 This study critically reflects on existing theories in order to map typical narratives of these two  
482 communities, highlight interconnections between them and explicitly bridge existing knowledge  
483 between them. The literature review outputs were coded according to the following building blocks  
484 of the narratives within both of the communities: (i) the terms used; (ii) causes of land value rise  
485 perceived; (iii) the rationale for capturing the land value perceived; (iv) instruments for capturing the  
486 land value analysed; and (v) purposes for which collected money should be used for.



487 The narratives are coherent within each research community and are highly complementary to each  
 488 other. They can even form a more complex united theory of land value capture, when combining their  
 489 aspects together. The differences in narratives largely follow from particular interest of these research  
 490 communities - the type of land and the type of land value in focus. Land value capture community  
 491 focuses on land undergoing large increases in land value and is interested solely in land value  
 492 increments resulting from the new assignment of development rights to certain areas under  
 493 development constraints of planning regulation, or from investments in large public infrastructure  
 494 projects. Land rent community is interested in the full value of all land with the emphasis on urban  
 495 land. Below, the synthesis of the key stones of both narratives is presented. Table 2 provides the  
 496 overview of their mutual relations.

497 *Table 2 Mutual relations of the land value capture and land rent community*

	<b>Land value capture community</b>	<b>Land rent community</b>
<b>Type of land in focus</b>	Land undergoing large increases in land value	All land with emphasis on urban land
<b>Part of land value in focus</b>	Land value increment resulting from assignment new development rights to it or from investments in large public infrastructure projects	Full land value
<b>Subject of social debate in focus</b>	Acquiring resources for new infrastructure related to development and for cost covering of social programmes, such as affordable housing	Increasing efficiency and equity of general taxation; stabilisation of democracy
<b>Proposed solutions</b>	Various instruments directed for taking all or a part of the value increment of land undergoing large increases in value	General taxation of land rent; wealth taxation

498

499 The type of land in focus together with the subject of social debate which scholars tackle, are reflected  
500 in rationales formulated by both research communities to justify the capturing of created value, as  
501 well as in purposes of the use of collected money proposed. The land value capture community aims  
502 at finding resources for cost recovery of existing infrastructure (e.g. Higgins and Kanaroglou, 2016),  
503 for the provision of infrastructure related to new development (e.g. Muñoz Gielen, D. & Van der  
504 Krabben, 2019), and for financing related social programmes, such as affordable housing (e.g.  
505 McAllister et al., 2016). These scholars justify land value capture either based on these pragmatic  
506 reasons, or on the grounds of fairness issues characterising increasing land values as unearned  
507 (Alterman, 2012). Captured land values can build a considerable financial resource for the needs  
508 explicated, if a sudden increase in land values is high enough to cover all these costs. Although the  
509 land value capture community focuses on relatively small portions of land in relation to the overall  
510 amount of urban land, it is because land values in these areas can increase significantly thereby  
511 deserving such attentiveness.

512 The land rent community builds the rationale of land taxation on the opportunity for enhancing  
513 efficiency of general taxation system (e.g. Dye and England, 2009). Another rationale formulated by  
514 them is the necessity to remedy the uneven distribution of wealth among population, to stabilise  
515 democracy, and even to enhance economy (Stiglitz, 2015). Proposed land taxes can in their view build  
516 a considerable continuous financial resource for general public needs used either on the local or  
517 national level.

518 Both research communities propose solutions which are tailor made to their areas of interest. The  
519 land value capture community developed a broad set of instruments which aim at capturing all or a  
520 portion of the land value created either due to newly assigned development rights to land, or to the  
521 provision of large public infrastructural projects. The land rent community focuses on the debate of  
522 the inclusion of land rent taxation, particularly urban land, into the general tax system.

## 523 6. Conclusion

524 Both research communities, the land value capture and land rent community, have largely inspiring  
525 thoughts. As different terminology is used by them, a relatively low level of interrelation between  
526 these communities preventing an effective sharing of their research outcomes can be observed. The  
527 aim of this contribution was to strengthen interconnections between these communities by defining  
528 their narratives and synthesising their views. Many of their characteristics allow building bridges  
529 between them establishing a more complex view of utilising land values to public purposes with the  
530 opportunity to mutually benefit from the research insights.

531 The approaches of both communities can operate in practice parallel to each other tackling land rents  
532 in their complexity, as each community has a different interest in focus. Land value capture community  
533 focuses on land undergoing large increases in land values and seeks acquiring resources for the needs  
534 of new development. Land rent community does not distinguish between new and earlier  
535 development and seeks to tax land rent of all land, mainly urban land. For land rent community,  
536 increasing efficiency and equity together with other general social needs such as stabilisation  
537 democracy thanks to land rent taxation is the subject of social debate which they seek to solve.

538 Both communities can also be mutually supportive. The land rent community can be supportive to the  
539 land value capture scholars in terms of the analysis of the causes of land value increase. Whereas land  
540 value capture scholars do not analyse in detail, why in some cities land values increase more than in  
541 others, the complex insights of causes of land value rise provided by land rent community can allow  
542 to make this explicit. The land rent community can also contribute with its wider understanding of  
543 land value capture rationale. On the other hand, land value capture community may be supportive to  
544 the land rent community with its immense number of different instruments proposed for capturing  
545 land values of land undergoing sudden increases in land value.

546 Building bridges between these two scholar communities enables them to come across each other's  
547 work and insights more often, and contribute to the best approaches of land value capture in theory  
548 and practice.

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## 787 Appendix: Searching steps within systematic literature review of 788 value capture literature

789

- 790 1. The review of the Web of Science database was undertaken with the help of these terms:  
791 “value captur\*” as well as “captur\* value” in connection with either “real estate”, “real  
792 property”, or “land”. The time period of publishing was not restricted. The review was limited  
793 to articles and book chapters only. Web of Science database search tool searches the terms  
794 within titles, keywords and abstracts of publications. Altogether 129 hints for articles were  
795 received by this method, none for a book chapter.
- 796 2. The terms used within Web of Science for the review were widened for being able to capture  
797 all possible articles in connection with value capture in land development and land policy area  
798 as follows: instead of the word *value*, following terms were used: “windfall”, “betterment”,  
799 “unearned increment”, “unearned gain”, “value increment”, “rent”. The word “recaptur\*” as  
800 well as “captur\*” was left to stand on its own without the term “value”. And again the words  
801 “real estate”, “real property”, or “land” were included for being able to limit the review to the

802 literature oriented on the area of interest. With this approach, additional 226 articles were  
803 received.

804 3. The same procedure was undertaken within Google Scholar database not to omit (i) articles  
805 and electronic books which use the terms captur\* solely within the body of the publication  
806 except of title, abstract and keywords; (ii) publications which were not included in the Web of  
807 Science database, but thanks to their high relevance or high citation level appeared at the  
808 front positions. Different combinations of words were used in the previous reviewing steps.  
809 Because Google Scholar search tools are very extensive, reviewing the list of each terms  
810 combination was stopped after not finding any relevant article or book within ten consecutive  
811 hints ordered by their relevance. For marking all possibly relevant hints, Google Scholar library  
812 tool was used and afterwards the list obtained by Google Scholar was compared with the list  
813 from step 1 and 2 gained from the Web of Science search. Thereby 212 additional materials  
814 were obtained.

815 4. Based on the first wave of review, other relevant terms for the search were selected – “value  
816 increase”, “givings”, “value chang\*” as terms characterising the value increase of land, and  
817 “hous\*”, “urban”, “area” as the terms characterising the area of interest for value capture  
818 literature. With these new terms, the previous steps were undertaken again. Within Web of  
819 Science, 190 additional resources were found, within Google Scholar 13 additional.