

# **Tax Increment Financing as a Tool for Public Infrastructure Development: Findings from a Simulation Experiment**

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**Key words:** negotiation, tax increment financing, experiments, area development, public infrastructure, public-private partnerships

## **SUMMARY**

Problems and difficulties in public infrastructure financing arise because of the limitations on public revenue, expenditure, and borrowing as well as the increase of development and construction costs. This situation has increased the need to finance the public infrastructure development by involving the contribution from private sectors. A promising mechanism for financing Dutch public infrastructure is Tax Increment Financing (TIF). In short, with TIF, future tax income as a result of public investments is used to pre-finance these investments. Currently the instrument is considered for application in several countries, including the Netherlands. However, application requires (1) adapting the preconditions to the specific national context and (2) involves a structural reconsideration of the roles of public and private actors.

In this study, we simulated the essential negotiations between local governments and private developers that are embedded in the local application of TIF in an experiment. The participants from municipalities and project developers negotiate on their contributions to the financing of public infrastructure and the content of related development project, which will be connected to the amount of TIF as well as the profitability of the project to both players. Based on the experiments we can conclude that the information availability and communication ability in TIF negotiations matter, both for the chance to reach an agreement as well as for the contents of such agreements. In order to apply TIF effectively in Dutch practice, it is recommended to carefully assess the two-fold goal of Dutch municipalities and further investigate how to open up communication and information availability in TIF negotiations in Dutch public infrastructure development.

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## **1. INTRODUCTION**

In recent years the financing of area development in the Netherlands has become more troublesome. Three causes are mentioned: collapse of demand, over programming of construction and non-profitable projects (Van der Krabben, 2011). Simultaneously, a number of changes is visible in the practice of area development. More and more, the emphasis in area and infrastructure development is shifting from construction to maintenance and from green-field to brown-field. For the Netherlands, the national funding for development is decreasing, while the municipalities and the private developers have to deal with worsened financial conditions (Deloitte Real Estate Advisory & TU Delft, 2011).

As a consequence, numerous financial, legal and governance initiatives are proposed to stimulate area development. One specific instrument which could prove to be successful for application in Dutch area development is ‘Tax increment financing’ (TIF). TIF has been introduced in the 1950s in the United States (Klemansky, 1990). Nowadays it is often applied around the World, predominantly in the Anglo-Saxon countries (Squires & Lord, 2012, Hutchinson et al., 2012). In short, a TIF finances public investments from future revenues, most commonly in the form of increased real estate tax income. It “allows a municipality to designate an area for improvement and then use any future growth in property tax revenues to pay for the initial and ongoing economic development expenditures” (Weber, 2003). Examples of such investments can be public infrastructure and public space.

For now, TIF has not yet been applied in the Netherlands. Although TIF potentially could serve as a financial innovation to stimulate Dutch area and infrastructure development and its application is currently considered by several municipalities, the modification of the instrument to the Dutch context is not that straightforward. The possible application of TIF in the Dutch context could, at least, be investigated further (Heurkens, 2011). A successful application requires adapting the preconditions of TIFs to the specific national context and a structural reconsideration of the roles of public and private actors. It remains unclear to what extent TIF can contribute to the financing of area development, especially since Dutch real estate taxes are considerably lower than in the Anglo-Saxon countries (Hobma & Schutte-Postma, 2011). Furthermore, in the Netherlands it is common for area development to include a public-private partnership. It is unclear what role a TIF can play in such a partnership, and more specifically how financial risks can be distributed between government and private developers in such an arrangement. This risk distribution is also related to the program to be developed, because the program determines the potential income of a TIF and the potential profits of the municipality and the private developer.

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Therefore, this paper aims to provide insight in the preconditions for applying TIF and the way in which TIF arrangements shape negotiations over the distribution of financial risks. In order to do so we conducted several experiments with practitioners, where we simulated the negotiations between public and private parties over the distribution of financial risks and the relation of the risk distribution and the content of program to be developed. In the next paragraph, we first describe the concept of TIF and the potential application of TIF in the Dutch setting. Afterwards, in section 3, we provide the research design in which we elaborate on the setup of the experiments. In section 4, the results of the experiments will be given and will be discussed. Finally, we will provide some conclusions and recommendations on the application of TIF in the Netherlands in general, and the public-private negotiation of distribution in financial risk in specific.

## **2. TIF IN THE NETHERLANDS**

### **2.1 The Essentials of Tax Increment Financing**

Tax Increment Financing (TIF) is an instrument in which public funds are invested in local projects that are not financially feasible without government intervention. The basis for TIF is that investments will make redevelopment in a certain area possible. Redevelopment will stimulate commercial activities, leading to increasing property values in that area. The increased property values will probably lead to increased revenues from property tax, which can be used upfront to invest in the redevelopment. This expected tax revenue is the increment, which can be used to cover shortages in the financing of area development projects. The investment in the TIF can stimulate private sector involvement in the investments in the area, because the increment can be seen as a government commitment to the development. Private investments can further increase the financial feasibility of the area development project. This way, TIFs can help local governments to finance public infrastructure in area development.

A TIF has to be enacted by local government. The captured property tax is invested back into the area. Usually, this is done by defining a base tax level at the start of a TIF. The government guarantees that during a the period of the TIF, which can be more than 20 years, the generated extra tax revenues will be used to pay back the investments in the area. This pertains only to the additional revenue, above the base tax level. Within the TIF boundaries the owners pay taxes over their properties. The taxes that are paid over the difference between the base level value and the property value is the increment. TIFs can be applied in various economic situations, but are in general more successful in times of economic growth. Practice shows that TIFs can differ greatly in geographical size: both project-specific and district-wide TIFs exist (CDFA & ICHC, 2007).

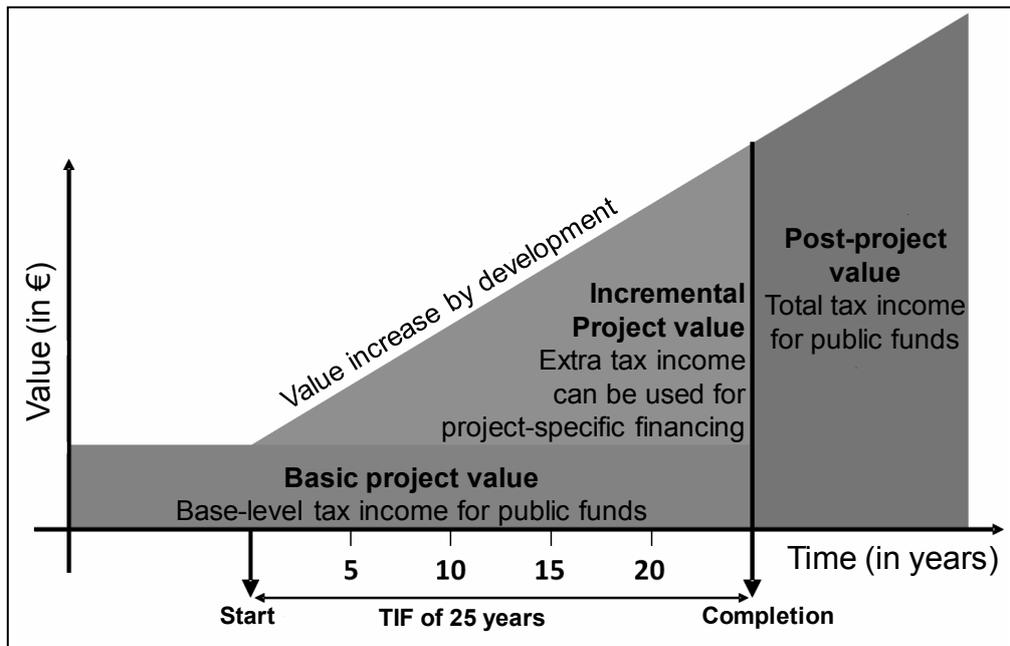


Figure 1: TIF value increase (adapted from University of Illinois at Chicago, 2011)

In practice, three preconditions are commonly attached to the application of TIFs. The first is that the area to which it is introduced can be considered as blighted. The precondition ensures that TIF are introduced to areas where investments are necessary. The second precondition is the so-called ‘but-for’ criterion. This means that a TIF is only applicable if alternative means and instruments cannot lead to the same projected improvements in the area. This precondition attempts to make government cautious in applying TIF and speculate on future revenues. The third and last precondition is perhaps the most important one for applying TIFs: it is necessary to generate an increment. This means that the instrument can only be applied successfully if there is an increase in real estate or land values that can be used to earn back the investments.

The instrument is suitable for gap funding: financing of elements that can facilitate and stimulate area development, but require large investments beforehand. When applying a TIF funding the early year’s interest gap plays a role. This interest gap consists of the fact that in the first years after the investment, the income from property tax will stay behind because the area is still under development. That is why TIF require a considerable amount of time to earn back the investments. Two models of TIF are applied in practice. In a pay-as-you-go model a private developer finances the development and is transferred the risk of the amount of the tax increment in the future. The second model of bond financing involves obligations to be introduced to cover the development costs and the interest until tax revenues are generated.

## 2.2 Considerations in the Applications of TIF

The application of TIF has been heavily disputed. Application shows that TIFs can help improve economic development in certain areas, both in speed of development and size of the investments. In addition, the financial burden of the public sector can be lowered, because the

instrument stimulates private investments. Another advantage of the instrument is its relative simple character: there is no direct government subsidy of the private sector. Government only commits to investing the generated extra tax income in a certain area. Private developers are free to choose whether to invest in this area. Therefore, there is no need to go through the complex official legal procedures that are required when introducing government subsidies.

In practice, there are also some clear arguments against applying TIFs. First of all, the precondition to apply TIFs only in blighted areas is treated rather flexible in practice. Most inner-city redevelopment sites are qualified as being blighted, and therefore suitable for TIFs. As a consequence, TIFs are applied to projects where there is already private interest in development. Another argument against TIFs is that the public budgets that are applicable for the whole municipality are being bypassed. Tax revenues do not go into the general public funds, but are specifically used for a certain area. This means that the increased tax revenues cannot be used to finance the future growth for services in a TIF area (Clark & Huxley, 2009). This is connected the last, and perhaps most important, argument against applying TIFs: the instrument is only successful if a leap in real estate or land value occurs, and sufficient private developers are stimulated to invest in the area (Hagendijk, 2011). Because the instrument is geared towards economic growth, it can have a speculative character, in which future budgets for municipal services and amenities is being used to finance public infrastructure in area development.

### **2.3 Applying TIF in Dutch practice**

Especially the real estate tax (in Dutch: onroerende zaakbelasting, OZB) would be suitable for using in a TIF. However, Dutch municipalities are not completely free to determine the level of real estate tax. The national government stipulates bandwidths for the real estate tax, which municipalities cannot exceed. Furthermore, all municipal real estate tax is put into a national municipal fund. This fund is used by national government to even out differences between municipalities, by varying the amount a municipality gets back from the fund. This is a drawback for applying TIF, because a municipality will not get to keep all the raised OZB revenues. An additional drawback is the fact that Dutch real estate taxes are low, especially if compared to the United States (Hobma & Schutte-Postma, 2011). On average, in a large Dutch municipality the owners of a house pay around 0,12 percent real estate tax, the owners of business real estate pay 0,27 percent tax and the users of business real estate pay 0,21 percent (Jansen et al., 2014). The low taxes limit the potential application of TIF in Dutch practice. Other financial sources could therefore also be considered for incorporating into a TIF, for example long-term land lease. Land lease constructions are applied in some Dutch cities, such as Amsterdam. Discounts on the land lease can be used to trigger investments in area development. A TIF can be funded by long-term land lease if the future rise in property value as a result of a change in land use, densification and intensification is used to finance area development.

In general three models could be considered to generate the required investments in a TIF (PWC, 2008):

- Bonds can be issued to the private sector in order to generate debt capital.

- A municipal fund can be introduced. The fund is filled with money borrowed by the municipality. The loan is repaid by future tax revenues.
- A developers fund can be introduced. The fund is filled with money borrowed by the private developer. The loan is repaid by future municipal tax income.

An important aspect in the application of TIF in Dutch area development practice is the way in which it will affect the distribution of risks and responsibilities between the municipality and private developers. In the Netherlands, the common way to enable developments is in a public-private partnership. Both can bring in land positions, as Dutch municipalities do invest in acquiring land under the so-called active land policy. Often, municipalities hope to make the land ready for development and resell it to the private sector with profit. This active role of the municipality and the tendency to come to public-private partnerships can have a positive influence on the willingness to apply TIF. After all, a TIF requires active municipal involvement, in the line of the active land policy, and is aimed at stimulating private investments, in line with common public-private partnerships.

The instrument of TIF is not applied in the Netherlands. However, there is some experience with funding area development using future tax income. An example of a municipality that is using local tax income to finance area development is Nijmegen. At the Waalfront site in Nijmegen, a large urban redevelopment project is financed by future revenues from local taxes. This brownfield development is partly paid for by future tax income. In practice, this part is around 15 percent of the investment. The project is delivered in a public-private partnership for which the financial risks are split fifty-fifty.

### 3. RESEARCH DESIGN

As explained above, a TIF would affect the relations between the public and private sector. However, it is unclear what the consequences will be. Therefore we apply experiments to investigate the role of communication and information availability on the TIF negotiations. In order to test the applicability of TIF we carried out several experiments with two players. These two players represent a municipality and a private developer.

These experiments revolve around a negotiation between two players on their financial contributions to a project and the housing program to be developed in the project. These two combined determine the potential of a TIF. The financial contribution is the amount a player is willing to provide in order to finance the necessary investment in the public infrastructure that makes the development of a housing program possible. The housing program to be developed can also be negotiated. It is the relation between expensive housing and social housing. The program to be developed in a project and the financial contribution to the pre-investment are related. Investments (for example in public infrastructure) are often a precondition for development. Also, the other way around, the developed program determines the income generated in a TIF and can help in bringing down the required contributions. In our experiments, the municipality and the private developer need to agree on both. Based on common practice, our hypotheses are as follows:

- 1a The municipalities are willing to provide a higher public contribution to the pre-investment if more social housing is included in the program.*
- 1b The private developers are willing to provide a higher contribution to the pre-investment if more expensive housing is included in the program.*

Several experiments were played in which information availability and the role of communication were varied. The role of information availability was considered important because it plays a crucial role in negotiations. Information asymmetries are on the one hand the driver of negotiations between client and supplier (Stiglitz, 1998), but can also cause negotiations to become one-sided: only aimed at cost-efficiency (Lenferink et al., 2013). Open book negotiations, that provide insight into each other's cost structures, are proposed to deal with information asymmetries and bring the negotiation partners closer together, and "is assumed to be a reasonable approach to gaining management information [...] for the customer's use (and benefit)" (Lamming et al., 2001). Information availability, especially with regard to the players' payoff structure, plays a central role in a negotiation process, (Samsura, 2013). The information availability is especially important in the discussion on TIFs. The instrument has often been criticized for its potential to lead to socially undesirable outcomes in which municipalities pay the price, while private developers reap benefits. Whether the information is available in the payoffs for municipality and for private developers will presumably affect the TIF negotiation, and perhaps the decision on the decision to apply TIF. The following hypothesis can be formulated:

- 2a If information is available on payoff structures, negotiations will be more efficient and will result in better balanced public and private contributions.*

Communication naturally also plays an essential role in negotiations. In practice, communication plays an important role because it allows the exchange of arguments behind bids. Communication is the starting point for trust-building and establishing effective personal contact that leads to efficient and effective agreements (Campbell & Harris, 2005; Laan et al., 2011). Communication is also important in the decision whether to apply TIF. In this decision political arguments play an important role besides the financial ones. TIF can be politically sensitive because if the future tax revenues are lower than expected, a municipality has to decide from which public funds this should be compensated. In addition by being able to communicate goals and explaining behavior, municipalities have the opportunity to stress the importance of social housing over development of expensive housing. The role of communicating these political and personal arguments in the financial negotiation of TIF is unclear, especially for the Dutch context. The following hypothesis can be formulated:

- 2b If communication between players is possible, negotiations will have a greater chance to result in an agreement and will result in a better balance between social and expensive housing in the development program.*

We are interested in how the information availability and communication ability affect the risk distribution in TIF negotiations. The experiments were designed to create four types of settings:

- Closed communication and limited information: communication between players is not allowed and player only have insight into own payoff structure. This means that a player only knows the consequences of the bids for their own profit, and cannot communicate with the other player.
- Closed communication and revealed information: communication between players is not allowed and players have insight into own payoff structure and payoff structure of the other player. This means a player knows the consequences of a bid for the profit of both players, but cannot communicate with the other player.
- Open communication and limited information: communication between players is allowed and only insight into own payoff structure. This means that a player only knows the consequences of the bids for their own profit, but can communicate with the other player.
- Open communication and revealed information: communication between players is allowed and players have insight into their own payoff structure and the payoff structure of the other player. This means that a player knows the consequences of a bid for the profit of both players, and can communicate with the other player.

We invited 22 professionals in location and area development to play the experiment. In addition, 44 master's students in real estate planning participated in the experiment. This resulted in 66 participants, which all are aware of the intricacies of Dutch area development practice and considered to be able to play the role of municipality or private developer realistically. The participants were invited to negotiate in pairs of two, leading to 33 separate negotiations. The players had to make a bid for their potential contribution, the contribution of the other player and the program included in the project, in terms of social housing and expensive housing to be developed. For each of the four settings, we played two rounds. In the first round the municipality was offered the possibility to make the first bid, in the second round the private developer could make a first bid. Each round was played with a different cost and payoff structure.

## **4. RESULTS AND DISCUSSION**

In this paragraph we describe the results of the experiments. We start by providing insight into whether participants could reach an agreement (section 4.1). Afterwards we go deeper into the bids in the negotiation (section 4.2) and the relation between the contribution, the program and the profit (section 4.3). In the last section of this paragraph (section 4.4), we compare the hypotheses and the research findings.

### **4.1 Agreements and Learning Effects**

In table 1, the tendency to reach an agreement among professionals is displayed for the various settings. In addition, the table also displays the differences between the rounds.

**Table 1: Negotiation agreement among professionals) in various settings (N=11).**

	Closed information		Revealed information	
	Round 1	Round 2	Round 1	Round 2
Limited communication	9 %	27%	27%	82 %
Open communication	80%	90%	70 %	50 %

There seems to be a difference between opening communication and limited communication settings. Especially for closed information settings, the communication ability makes the number of agreements differ greatly. In revealed information settings, this relation is not as clear. This has to do with how the open communication negotiations are done. Often participants decided to use the communication not only to argue why they submitted a certain bid, but also used the communication to reveal their cost structure, as pointed out by one of the players: “*We decided to share the information and see how and where we could optimize our profits*”.<sup>1</sup> In addition, revealed information and open communication might increase the intensity of the negotiation, as illustrated by these quotes of other participants: “*You know what the earnings of the other player are and they will not accept a smaller profit than you have*”<sup>2</sup>. “*We almost reached an agreement, but the discussion over social housing and profit for the municipality remained*”.<sup>3</sup> Because potential profits are clear to the players involved, players will not easily agree on a profit which is lower than the profit of the other player. Therefore, revealing information does not seem not to lead to better results in settings with open communication.

**Table 2: Negotiation agreement among students in limited communication settings (N=22)**

	Round 1	Round 2
Closed information	23 %	54%
Revealed information	73 %	73 %

A sharp increase in the number of agreements in the limited communication – revealed information setting can also be noticed. In addition, there seem to be learning effects involved as well. In round 2 the results are better than in round 1. The negotiations between the students seem to confirm these two effects, as can be seen in table 2. The learning effect is also felt by the participants. The more they negotiate the better they become accustomed to the principle of TIF, the negotiation setting and the procedure of negotiation. This is confirmed by this participant: “*It is easier [to reach an agreement] if you are more accustomed to the negotiations*”.<sup>4</sup> This learning effect is clear for settings with limited communication settings, where, to some extent, the negotiation involves a trial-and-error approach to find out each other’s profit margins. In settings with open communication, the learning effect between rounds 1 and 2 is not that strongly observable, because players share experiences and learning through communication. In a way, the communication helps to speed up the learning process.

## 4.2 Bids in the Negotiation Process

An indicator that is related to the learning effect and the degree to which margins are investigated is the number of bids in the negotiation. In table 3, below, the average number of

bids in the negotiation is provided, in general, and for the successful and unsuccessful negotiations for all four investigated settings.

**Table 3: Average number of bids in the four investigated settings**

		average number of bids		
		total	success	no success
Limited communication	Limited information	5,6	5,5	5,6
	Revealed information	2,7	2,8	2,5
Open communication	Limited information	4,9	4,3	8
	Revealed information	3,1	3,3	2,9

There does not seem to be a great difference between the successful and the unsuccessful settings, with the exception of the unsuccessful limited information – open communication setting. This can be attributed to one extreme negotiation that involved an extreme amount of bids. A conclusion that can be drawn from this table is that revealing information limits the amount of bids in the negotiation. Both in open and in limited communication settings, the number of bids goes down. This can be attributed to the effect that the information helps to identify the profit margins and start the negotiation with realistic and more acceptable bids. However, the low amount of bids can also partly be ascribed to player’s strategy. Several players put their competitors to the spot, by intentionally waiting with submitting bids and putting more time pressure on the negotiation, as explained by this participant: “*My strategy: wait until there are only ten seconds left for negotiation, because then the opponent needs to accept to prevent him/her from getting nothing*”.<sup>5</sup>

### 4.3 Contributions, the Development Program and the Profits

The contribution in the pre-investment, the development program and the profits for municipality and private developer are interrelated. In table 4, the profits of the municipality and the project developer are displayed. Please note that for each experiment, in each round, different figures were used. Therefore the averages cannot be compared between settings.

**Table 4: Average profits of players in four investigated settings**

			Municipality	Project developer
Limited communication	Limited information	Round 1	975,00	125,00
		Round 2	165,00	575,00
	Revealed information	Round 1	0	250
		Round 2	147,22	36,11
Open communication	Limited information	Round 1	753,75	292,00
		Round 2	553,33	513,33
	Revealed information	Round 1	153,57	398,43
		Round 2	140,00	434,00

Most notable is that on average, the negotiations do not commonly end up to in equal profits

for the municipality and the private developer. Only in open communication settings with limited information, the averages seem to be close to each other. This could be connected to the fact that participants decided to share their information voluntarily, leading to better results than with the ‘forced’ revealed information setting. Pleasant communication can lead to better results, as explained by this participant: *“Everybody puts their deal breakers on the table, and these are used to start up the conversation. This speeds up the negotiation process with a positive result as the outcome”*<sup>6</sup>.

Other reasons for the fact that the average profits are not similar could be found by examining the developed program and the contributions in the successful negotiation (see table 5). It could be that municipalities, for example, aim more at developing a sufficient housing program, than at gaining profits. This is explained by this quote of a municipality: *“I have tried to develop social housing as much as possible, while preventing to get a loss on the development”*.<sup>7</sup> The consequences of negotiating from this standpoint is visible by the decrease in the expensive housing and the (slight) increase in the social housing developed, if the information is revealed. In addition, there is a considerable increase in social housing included in the program if open communication is allowed. In these settings the municipalities can communicate their wishes, which include the development of affordable housing to its citizens, as illustrated by this quote of a project developer: *“The goal of the municipality was clear. That is why the negotiations included more social housing, for a higher contribution of the municipality. [As a consequence] I have easily reached my minimum return of investment”*.<sup>8</sup>

**Table 5: Program and contribution in four investigated settings**

		Program		Contribution	
		Expensive housing	Social housing	Municipality	Project developer
Limited communication	Limited information	152,5	47,5	5188,8	575
	Revealed information	124,2	48,3	3679,2	641,7
Open communication	Limited information	143,2	56,8	2977,9	363,5
	Revealed information	125,1	59,9	1968,8	1522,9

Looking at the program and the contributions, it also becomes clear that revealing information strengthens the negotiation position of the municipality. Both in limited and in open communication settings, the revealed information round result in a slight increase of social housing, a decrease in the expensive housing, a lower contribution by the municipality and a higher contribution for the project developer. This indicates that revealing information and opening communication might be in the interest of the municipality, and its citizens.

Finally, it is interesting to see that the contributions to the pre-investment do not seem to end up in an equal state. Only in the last situation with revealed information and open communication, the contributions seem to be more or less equal. However, one might wonder whether this goes at the expense of the profit (see table 4): the open communication-revealed information negotiation results in a considerable lower profit than the open communication-limited information.

## 4.4 Hypotheses and Experiment Findings

Four hypotheses were formulated, which we will now shortly discuss:

*1a The municipalities are willing to provide a higher public contribution to the pre-investment if more social housing is included in the program.*

The first hypothesis can partly be confirmed based on the findings from the experiments. The contributions of the municipality are considerably higher than the contributions of the private developers (see table 5). Although there is not a direct relation between a higher contribution and more social housing, the municipalities are willing to cut profits (see table 4) in exchange for more social housing (see table 5). This can be considered as a contribution as well, or an indication that municipalities are willing to invest in more social housing.

*1b The private developers are willing to provide a higher contribution to the pre-investment if more expensive housing is included in the program.*

This hypothesis cannot be confirmed in the experiments. Private developers seek profit, which they consider to be a reasonable return on investment. The developers were willing to increase their contribution, but only in order to reach an agreement. The reverse of this hypothesis is also not conformed: the private developers were not lowering their contribution if less expensive housing was included (see table 5). The developers seem to do the minimum to please the municipality and come to an agreement, in which they, in general, contribute less and realize a profit equal to or higher than the municipality (see table 4).

*2a If information is available on payoff structures, negotiations will be more efficient and will result in better balanced public and private contributions.*

The first part of the hypothesis can be confirmed: the players need less bids to come to an agreement (see table 3). The profit margins are known, which reduces the trial-and-error bids in the negotiation. There are indications that the second part of this hypothesis can also be confirmed: the contributions in revealed information settings are better balanced than in closed information settings (see table 5). However, only in open communication do the contribution become more or less equal.

*2b If communication between players is possible, negotiations will have a greater chance to result in an agreement and will result in a better balance between social and expensive housing in the development program.*

This hypothesis can be confirmed. The findings demonstrate that open communication does positively influence the chance that players reach an agreement (see table 1). Also, the balance between social housing and expensive housing seems to be influenced by allowing for open communication. The amount of social housing is considerably higher in open communication settings (see table 5).

## 5. CONCLUSIONS AND RECOMMENDATIONS

The aim of this paper was to provide insight in the preconditions for applying TIF and the way in which TIF arrangements shape negotiations over the distribution of financial risks. We

conducted experiments with practitioners, where we simulated the negotiations between public and private parties over the distribution of financial risks and the relation of the risk distribution and the content of the housing program to be developed. First we will formulate conclusions after which we provide some recommendations for further research.

## **5.1 Main Conclusions**

Based on the findings in the experiments we can conclude that communication and information availability matter in TIF-negotiations. The ability to communicate the goals of the municipality seems to help to bring together the contributions and the development program. More social housing is included when a municipality gets the chance to communicate with private developers. However, the more equal distribution of contributions and more social housing can go at the expense of municipal profits. With regard to TIFs this can be dangerous, as the profits can be necessary in the future to pay back the investments in a TIF district.

Increasing the success rate of negotiation does not necessarily require opening up the communication and revealing information. In fact, the results show that in open communication settings with revealed information, the chance to reach an agreement is lower than in settings with closed information. This can be an indication that voluntarily sharing information leads to better cooperation and better outcomes, than the forced sharing of information. In this context, personal relations and intentions seem to matter in the success rate of agreements

Although revealing information will not increase the chance to reach an agreement, it could still have added value to negotiations in real estate development in general and TIF application in specific. The experiments show that revealing information leads to negotiations in which both players less bids are made. This could indicate that revealing information could potentially speed up negotiation processes and cut down transaction costs. Because the potential generated funding through TIF in the Netherlands is limited as a result of the low property taxes, the instrument should be easily applicable to justify the transaction costs. Speeding up negotiations could prove to be crucial in doing so.

Besides information availability (i.e. speed up negotiations) and communication (i.e. better personal relations) explained above, preconditions for TIF application need to include a structured consideration of the role of municipalities. On the one hand, they aim to gain profits from the development project, but at the other hand municipalities aim to serve their citizens by developing affordable housing. This two-fold objective can play a role in TIF-negotiations and provide private developers an opportunity to reap the benefits from public investments.

## **5.2 Recommendations**

As indicated in this paper, TIF is currently not applied in the Netherlands. Simply copying the TIFs as they are applied abroad seems not recommendable. Negotiation experiments could

provide further insight into the way in which the instrument could be made suitable for application in financing Dutch public infrastructure development. This requires the participation of both municipalities and project developers.

One component for further research could be the structured assessment of the different TIF models. The bond model, municipal funding model and private funding model all involve different roles and responsibilities, and different risks for the involved parties. A second avenue for further research on TIFs is the guarantees and safety precautions that are to be built into the instrument. These preconditions for application in practice need to be made clear for the Dutch context. For example, what does the but-for criterion mean in Dutch practice, and when is an area considered to be blighted?

Besides further research on the TIF instrument, the role of information availability and communication also needs further research. In practice, for example, parties will most likely refuse to share information. Further research needs to make clear where the practical limitations to information sharing and open-book negotiations are. In addition, communication also needs further elaboration. Although relationships matter, arguments seem to matter, and trust-building is considered important, communication is a broad term and is only a first step towards effective (contractual) partnerships. Therefore, the influence of communication on cooperation and competition strategies in area development needs to be further investigated.

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## NOTES

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- <sup>1</sup> Original quote, in Dutch: “We besloten om totaal de informatie te delen en te kijken waar wie het meest rendement zou halen”.
- <sup>2</sup> Original quote, in Dutch: “Je weet wat zij verdienen, en minder winst dan jij zullen ze niet accepteren”.
- <sup>3</sup> Original quote, in Dutch: “We zijn er bijna uitgekomen, maar er was discussie over het percentage sociale woningbouw versus het rendement voor de gemeente”.
- <sup>4</sup> Original quote, in Dutch: “Het is steeds makkelijker als je meer gewend bent aan het onderhandelen”.
- <sup>5</sup> Original quote, in Dutch: “Tactiek: Wachten tot een seconde of 10, dan moet de tegenstander wel accepteren, anders heeft hij/zij niets”.
- <sup>6</sup> Original quote, in Dutch: “Ieder legt zijn breekpunten aan de voorkant op tafel en gaat aan de hand daarvan het gesprek aan. Dat bespoedigt de onderhandeling. Met positieve uitkomst als resultaat”.
- <sup>7</sup> Original quote, in Dutch: “Ik heb getracht zo veel mogelijk sociale woningbouw te realiseren waarbij in ieder geval geen verlies werd gedraaid”.
- <sup>8</sup> Original quote, in Dutch: “Doel gemeente was bekend. Daarom in onderhandeling meer sociale woningen en hogere bijdrage gemeente. Minimaal rendement ruimschoots gehaald”.