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Research Paper

Public investments in large urban projects: Reassessment from Land Value Capture perspective in Dhaka, the capital city of Bangladesh

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Abstract

From time immemorial, cities have been considered 'engines of growth'. These growth dynamics certainly have impacts on the well-being of the urban economy as well as city dwellers. This evolved new thoughts for cost recovery of government spending from land value capture perspective which is particularly crucial for cities in developing economies of the Global South. The rationale behind the appreciation of value increment by the government is that, the benefit of collective effort must be distributed for the common good with a focus on the disadvantaged group. Different land value capture tools are also important sources of financing on the ground that value increases due to government intervention. This paper aims to appraise the improvement schemes as a public investment for housing supply and infrastructure development in Dhaka City, Bangladesh. To conduct the research, a single embedded case study was adopted using office records of GIS and Oracle databases. In addition, semi-structured interviews of key professionals and experts helped to assess in-depth policy assessment and triangulation of information. A separate real estate market survey could have increased the credibility of the data, absence of which is a limitation of the study. However, the study result reveals a significant increase in land value over the years which the government failed to capture. Rather there are indications that the government's strategy to make 'no profit, no losses' policy ended up leaving major share of benefits to private individuals. Beneficiary segments apprehended profits from land value increments, which could be invested in other public projects if captured by the government. Consequently, the research findings will facilitate prior and post-assessment of similar public investment from a land value capture (LVC) perspective and shape future policy development for setting priorities.

Keywords Land Value Capture, Public investment, Large Scale Urban Projects, Sites and Services Scheme

1. Introduction

Rapid urbanization in Bangladesh reveals economic activities centred around limited number of large cities coexisting with severe housing and infrastructure shortages. Although the larger share of GDP comes from these urban areas, they are also associated with many challenges and negative externalities (World Bank, 2007). Amid rapid urban transformation throughout the country, the highest rate of urbanization is evident in Dhaka with 44% of the national urban population (Roy, 2021). Major economic activities are centered around Dhaka, which is evident from its 34.5% GDP share (GED, 2020). As a

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result, pre- and post-assessment of public investment is crucial for the capital city which has a greater impact on the whole country.

The Capital Development Authority (i.e., *Rajdhani Unnayan Kartripakkha, RAJUK*) performs planning, development, and development regulation functions for the capital city of Dhaka in its jurisdiction area, extended upto 1528 square kilometres with four small towns within its territory. Although Gazipur has been removed from the jurisdiction in 2020. Kabir and Parolin (2011) identified that area improvement as one of the major functions of the authority. Dhaka city's improvement, development and expansion is particularly mentioned in the act (GOB, 1953) which provides the legal framework for undertaking improvement and re-housings schemes. With the support of this legal mandate, RAJUK developed several residential, commercial and industrial projects including two satellite/new towns.

In this paper, these development projects are termed as 'improvement schemes', which is also used in the Town Improvement Act, 1953. The main goal of these projects is to develop or open up congested areas, and housing supply, and to create or improve transport and other infrastructure facilities (GOB, 1953).

For implementing improvement schemes, RAJUK does a series of activities including preparation of layout /master plan, acquisition plan and implementation through mostly Sites and Services schemes. Over the years a certain percentage of planned development came into existence in Dhaka through these large urban projects. Private land development also follows a similar kind of process nowadays except land is purchased from the market by the real estate companies. The major share of land tenure is freehold in Dhaka compared to leasehold properties. As a result, freehold and leasehold land ownership coexist in the formal land market in Dhaka. The government expropriates land here in exchange for compensation to the land owners, on the grounds of increasing housing supply, particularly for the lower income segment of the society. The serviced plots are disposed through land leasing. Despite direct government intervention in the land market, Mohit (2012) observed high land prices at an increasing rate with a tendency of land speculation in the urban land market of Bangladesh.

Considering the distinct characteristics of the land, Fainstein (2012) has argued that land value increment should not only be used for collective purposes but also need to be directed to the deprived portion of society for justice and equity. In large urban projects of RAJUK (Capital Development Authority), profits from the auction of commercial lands are supposed to be used to subsidize the flat premium of residential plots to enable access to housing for low-income groups. This could allow for keeping the premium of residential plots lower than the market price but enough to subsidize within the scheme. Public investment takes different levels, sizes, shapes, and forms but aims to fulfil public interest across societies. This is justified from both economic and political perspectives.

The current practice of Dhaka city shows some sort of direct government intervention in the land market through the execution of improvement schemes by Rajdhani Unnayan Kartripakkha (RAJUK). The significance of this government intervention in the city's land market is the matter of discourse within resource constraints for public goods provision.

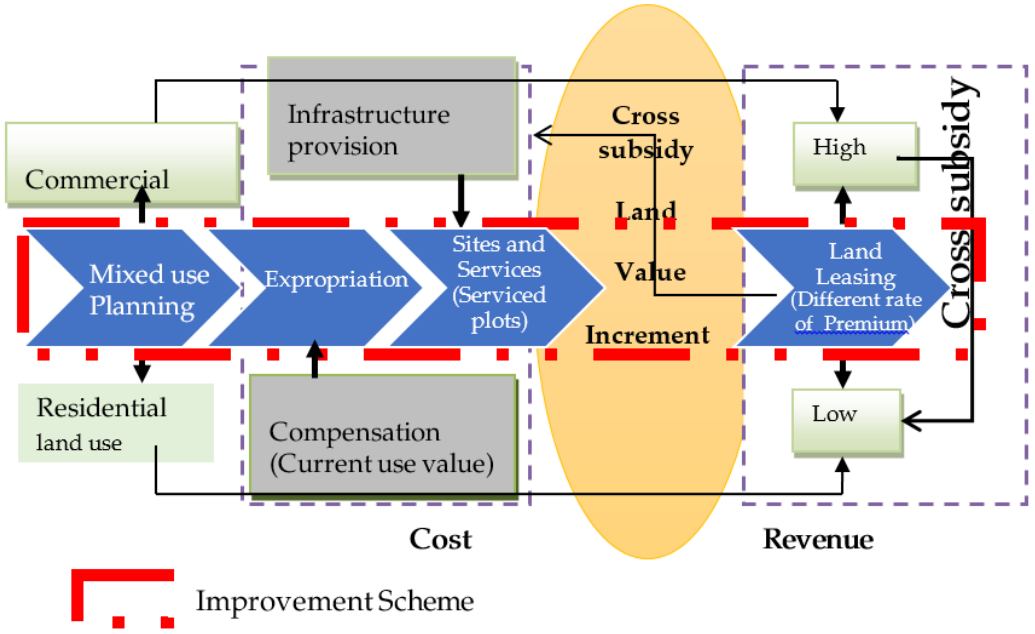

Figure 1. Conceptual framework of the study, source: prepared by Author (2014)

Bertaud (2010) reaffirmed the need for appraisal mechanisms for large urban projects. This calls for a separate but comprehensive analysis of these public investments. It can help develop a better understanding of their role in the urban land market of Dhaka city as well as return from urban land from the public goods' perspective. So, this research aimed analyse and understand the nature and outcome of these large urban projects. The ground set is on the level of return the government is achieving in terms of revenue as a mechanism for redistributing value increments for housing provision particularly for those who have limited access to the land market. The goal of the research to assess land value capture is also justified since the government in cities of the Global South has limited financing sources.

2. International practices of public investment on land and land value capture

Land value capture (LVC) is defined by Smolka and Amborski (2000) as the process of recouping full or partial increase of land value caused by public action through fiscal or regulatory policy. Ingram and Hong (2012) have identified that developing countries struggle with financing basic services because of their growing population with high demand for urban land. This brings the need for land value capture by government. The public good perspective is solved by the government using the paradigm of land value capture to a large extent.

From this perspective of LVC, the government intervention in the land market aims at capturing increase in land value by collective efforts and redistribution of the value to ensure equity and access to public goods. The causes of land value increment affirmed by different scholars are: direct government investment for infrastructure and housing, change in plans and regulations, and population and economic growth- where the

government role is evident (Hong & Brubaker, 2010; Smolka, 2013; Fainstein, 2012). Peterson (2006) also identified land as one of the most important asset bases for financing infrastructure which is utilized in China, India, Hong Kong, Ethiopia and many other countries. A major share of Hong Kong's budget comes from auction of serviced land. Both in China and Hong Kong government acquires maximum benefit from land through delivering land in auction. The revenue earned from here is used to provide subsidy in projects like social housing (Peterson, 2006).

Needham (2014) discussed that when the government uses both the power of developer and regulator at the same time, it brings questions on dual but two opposite roles. As a result, it also brings the opportunity to misuse power. He also identified the financial risk involved in the large projects and questioned the use of outcome. On the other hand, Bertaud (2010) also considered this public intervention as an opportunity to supply public goods and infrastructure. Fainstein (2012) believes that only public ownership of land cannot ensure equity but political will is highly important for getting greater control over land.

In Taipei, LVC is used to fund mega infrastructure in transit oriented development (TOD) (Yen et al., 2023). In India, government investment in town planning schemes (TPS) uses partial market-based tool to capture value increments (Sanyal and Deuskar, 2012). This includes betterment levy as well as auction. Revenue from land sales through auctions and annual rent is used for co-financing infrastructure in redevelopment areas.

In Bangladesh, sites and services scheme are the much-practiced land development tool in combination with land leasing for land delivery. Different government agencies such as PWD in Dhanmondi, Tejgaon; National Housing Authority in Mirpur, Mohammadpur and RAJUK starting from Gulshan Residential Area to the newest Purbachal New Town show repetitive replication of the same combination of tools. To provide housing on a mass scale for low and middle-income people the government adopted a 'no profit, no loss' policy. In reality, Ingram and Hong (2012) found a strong positive correlation between direct government intervention in infrastructure and land use regulation and land value increase which emphasizes Henry George's theory of land value capture grounds.

This paper aims to identify the extent of land value increment captured by the government of Bangladesh in Dhaka city through RAJUK's large urban projects termed as 'improvement schemes'.

3. Methodology

The satellite town named Uttara Model Town has been developed in three phases. These three phases of Uttara Model town are selected as three different cases for this study. The research used empirical data on land value increment and performed a detailed statistical analysis of cost and revenue data of three case study projects. In theory, revenue should be at least equal to cost to ensure the project's viability. Calculation of current market value of land and comparison with cost price helps to reveal the real increment in land value. Data for this study are collected recorded cost data of the completed projects of RAJUK. Land premium as revenue data was also collected from Oracle database of RAJUK.

The three projects (three phases of Uttara Model Town) were developed over five decades. The land premium was also collected over a long period of time. To bring all these huge cost and premium data into comparable monetary values, the real value was calculated

into the 2014 base year using MS-Excel. To validate and understand the government policy and its outcome, semi-structured interviews were conducted with eight persons who worked directly from government part as well as individual experts in relevant fields. The outcome was analysed using atlas-ti software. The source of market price of land are formal and informal valuators. The absence of a comprehensive real estate market survey due to time constraints is a limitation of the study.

4. Legal basis of land disposal in Dhaka

According to the Town Improvement Act, 1953, RAJUK can expropriate land, prepare a layout for Improvement schemes (master plan), and dispose of the serviced land (GOB, 1953). The concern section of the act calls for public notification for applications with preference for people affected by the project. Fixation of land premium is determined by government policy in practice though the act which allows the government to deliver land to the person paying a higher price. But later, the land allotment rule of 1969 (amended 1986) elaborated the allotment procedure keeping space for auction only in the case of commercial plots (GOB, 1969).

5. Findings from Dhaka Case

The detailed land use master plan was analysed in this study to show the difference in use which directly impacts government revenue. An optimum mixture of land use increases the viability of government spending. The land use distribution has been depicted in figure 2 and figure 3.

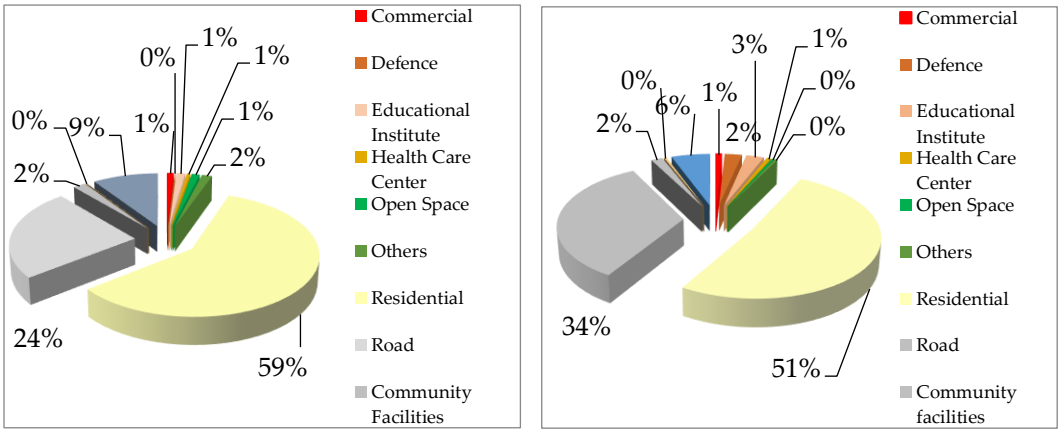

Figure 2. Land use classification of Uttara 1st Phase (in right) and 2nd Phase (in left) (*Source: Prepared by Author 2024)*

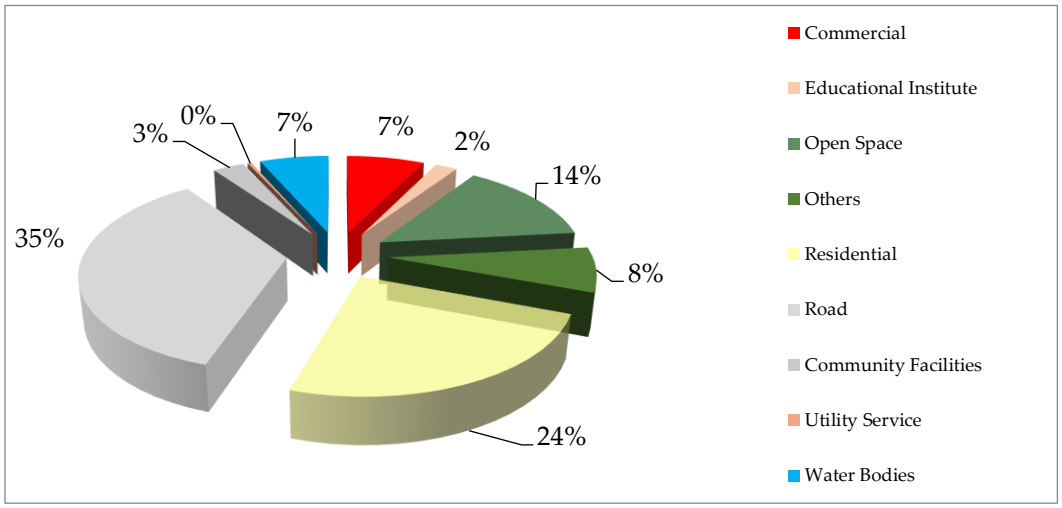

Figure 3. Land use classification of Uttara 3rd Phase *(Source: Prepared by Author (2014)*

Table 1: Comparison of government expenditure (as cost) and revenue in three phases of Uttara Model Town

	1st phase	2nd phase	3rd phase
Total Cost (in million US$)	1,334	1,151.44	1,291
Total Revenue (in million US$)	766	1,075.5	7,516.5
Relation between cost and revenue	Cumulative revenue < Cumulative cost	Cumulative revenue < Cumulative cost	Cumulative revenue > Cumulative cost

Source: Compiled by author from Oracle database of RAJUK in 2014 base year price

The comparison shown in table 1 displays a positive return in revenue only in Uttara 3rd phase compared to the other two phases having negative benefit cost ratio (BCR). the varied rate of premium in the projects of Uttara land reveals that different leasing mechanisms for different land uses in combination with land use mixture helps cross-subsidization in a project. The whole idea behind the projects was to enable access to housing which is implicit in the goals. It targeted to increase the supply of serviced land for housing for low and middle-income groups at cost price. This theoretically turns Dhaka city's improvement schemes into a cost-effective solution for providing infrastructure and housing to low-income people. This was evident in 3rd phase as revenue was 7.5 times the cost. The supply of land is insignificant compared to the annual

demand. However, in practice, it failed to achieve the goal of redistributing land value increments as the benefits could not reach the targeted society segment.

Influence of land premium

It has already been mentioned that RAJUK with the approval from the government sets the land premium for residential plot allotment for each segment of land leasing across projects (GOB, 1969). Cost price is the key determinant factor here as per the interview with key officials of RAJUK. The simple math of dividing total cost into unit price is usually adopted but this is usually fixed at the beginning of the project even before completion of land acquisition. In short, it can be said that it is the projected cost that determines land premium, not the actual one incurring other factor affecting cost. In no way this adjust the delay and price escalation for residential land premium. On the contrary, market value of land can be achieved for commercial plots as they are delivered through auction with minimum base price.

Comparison of price gap of land in Uttara

The analysis of land price data starting from first allotment of plot in Uttara to the latest land allotment and comparing with real market price shows the significant difference premium and selling price in the open market which is shown in table 2 below.

Table 2: Land value increment scenario over the years in Uttara Model Town

Year	Lease Premium (USD/sqm)	Market value of land (USD/sqm)	Price difference between lease premium and the market price of land	Difference in % between premium and market price
1975	22	38	16	71%
1990	80	275	195	245%
2010	102	1910	1808	1773%
2014	193	3850	3657	1900%

Source: Aktar, 2014It can be concluded that, premium versus real market price adjusted in 2014 shows a significant increase in land price over the last six decades. There was a sharp growth after 2004.

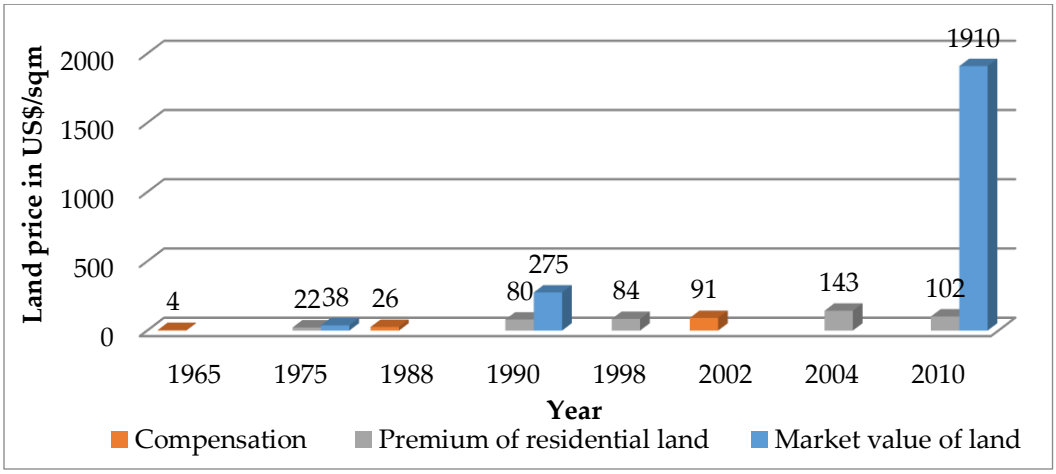

Figure 4. Land price escalation in Uttara Model Town was adjusted in 2014 the base year price, *Source: Aktar, 2014*

Thus, the research has shown that, the government does not even partially capture land value increments in Dhaka city as the government rate of land is much less than the market price. The figure 4 reveals the gap. The gap has even reached to 2000% in the current year. The data on land value increments were varied from three different sources such as formal and informal valuators and secondary sources to validate them.

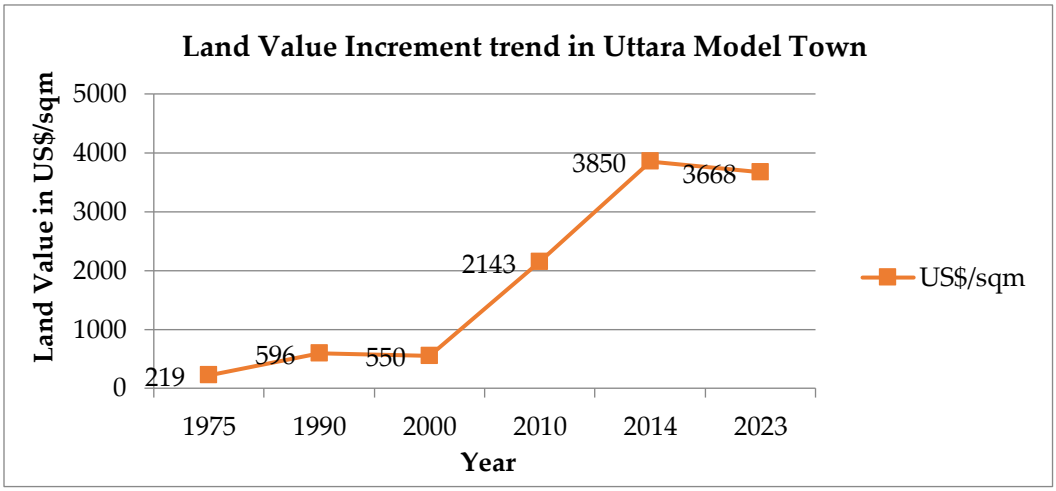

Figure 5. Land Value Increment Trend in Uttara in 2014 base year price. *Source: Aktar, 2014 and online sources for current land price*

Other factors influencing project viability: Project delay and negative externalities

Some other determinant factors influence the financial viability of the projects such as increasing project life in terms of delay. Some other externalities, like corruption, are hard to measure. Delay is connected with increased project costs as price escalation influence

occurs beyond the stipulated time. These dimensions were not explored as they were beyond the scope of the study, but it needs further research in the future.

6. Conclusion

This paper aimed at appraising a cost-efficient solution for public goods provision through capturing land value increment resulted from government intervention. Improvement schemes in Dhaka are an example of direct government intervention that used certain combinations of land value capture tools. Findings from this research have shown that, an adequate degree of residential-commercial land use mixture with different leasing mechanisms can produce land value increment not only satisfactory enough for cross-subsidization but also with profitable outcome. The legal framework for the execution of the projects are also aided this by setting land acquisition criteria.

The research has also shown that, differences in reality can deviate from the original goal of the project misused by power structure, lack of transparency and accountability. The improvement schemes in Dhaka city could not serve success from a completely different perspective: they did not reach the low-income segment to meet the demand for housing as a public good due to the faulty plot distribution practice. Lack of necessary background studies, wrong policy, and lack of political commitment ruined the potential value capture instruments. Careful consideration of all these issues is needed in future policy formulation.

The research has shown that the benefits of subsidized plots are captured by private individuals in reality. The government neither captured the land value increment nor provided affordable housing to disadvantaged groups through these schemes. The capital gain was captured by private parties, especially the high-income group who already have access to land. Reflections were evident from the plot allotment policy. Effective intervention may ease the burden of borrowing from the government part. All these issues need to be considered in future policy-making processes.

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