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To Tax or not to Tax: The case of London Crossrail

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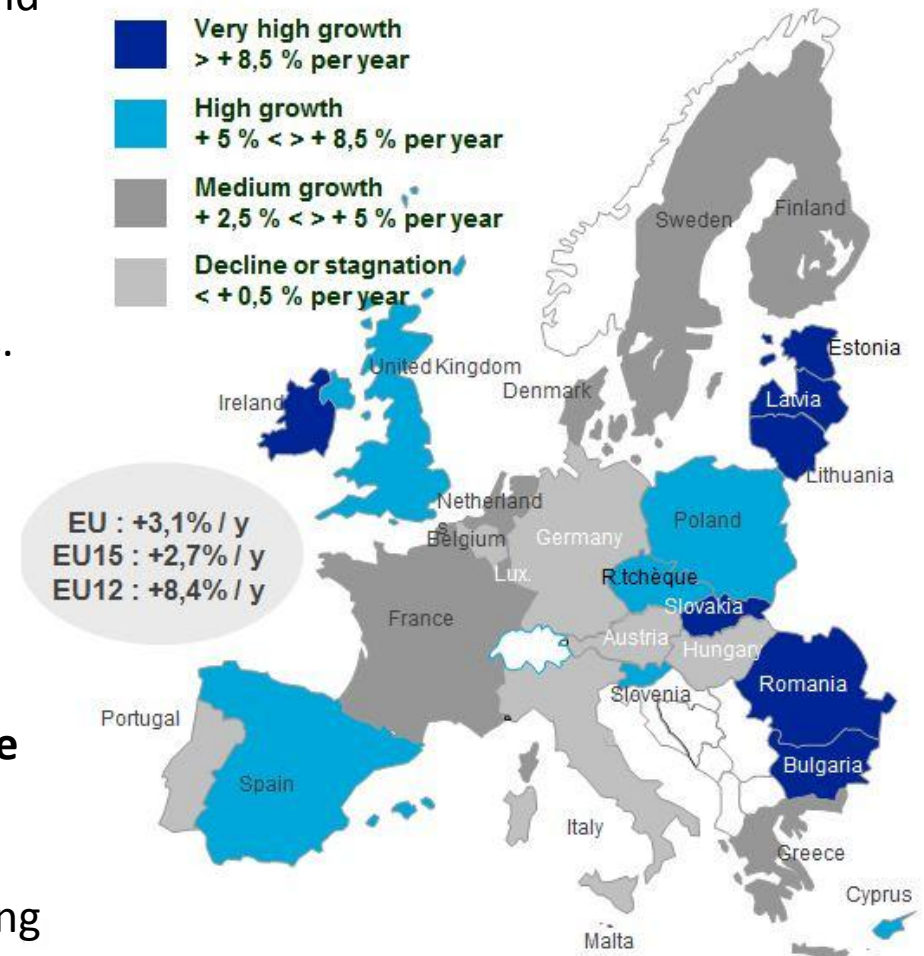
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1. Context and Motivation

- In Europe between 2000 and 2008, local and sub-national budget expenditures grew steadily.
- In the wake of the recent economic and financial crisis, local authorities have struggled to finance their budgetary needs.
- Reduction of grants from central governments precipitated a public debt crisis.
- Necessity arose for innovative ways to finance local authority budgets (**Land Value Finance**).
- Aim is to attract city investment by providing balanced return/risk investment opportunities (**Municipal Bonds**).

Sub-national public sector capital expenditure (GFCF)

Annual average growth rate in volume 2000-2008

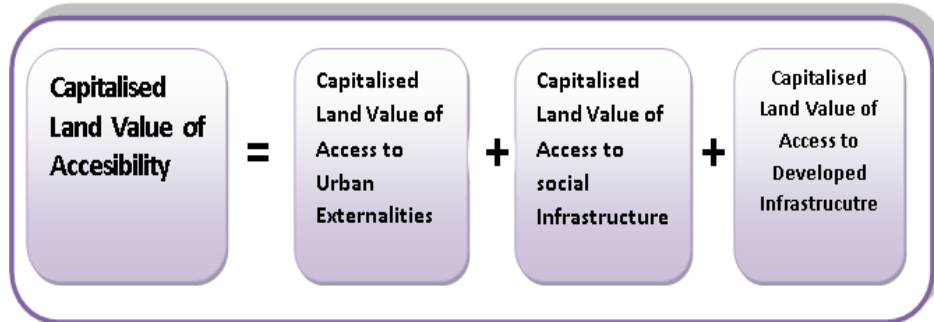


Presentation Outline

1. Context and Motivation
2. A new tool for reducing borrowing costs: Land Value Finance
3. London Crossrail Financing: a case study
4. Objectives
5. London Crossrail Additional Funding: Strategy 1
6. London Crossrail Additional Funding: Strategy 2
7. Conclusions and Policy Recommendations.

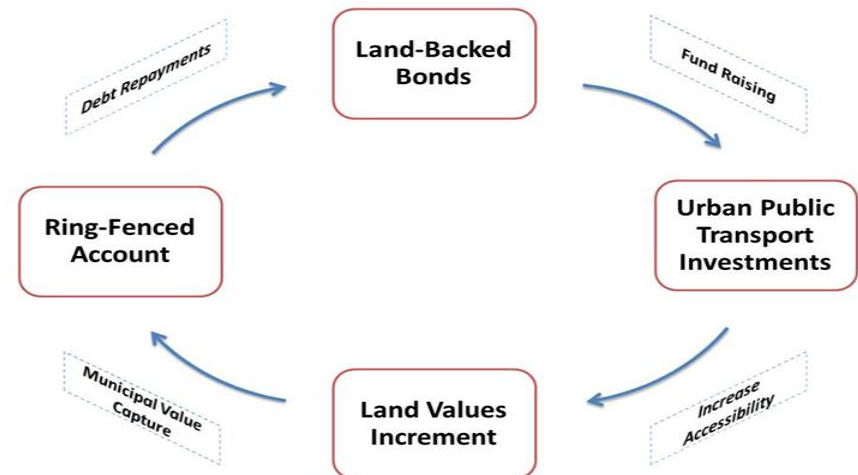
3. A new tool for reducing borrowing costs: Land Value Finance

Land Value Finance (LVF) is mechanism which aims to recapture the windfall gains accruing to the private sector caused by public sector investment in infrastructure (such as new transport infrastructure, urban regeneration, or other service provision) (Medda, 2009).



Land Value Finance for Securing Municipal Bond Issues

- Use the windfall profits raised by accessibility enhancements to secure and finance investment in transport infrastructure.
- The LVF revenues are used to pay back the bond issue for financing public transport infrastructures.



4. London Crossrail Financing: a case study



- Crossrail is a plan to integrate the mainline railway by constructing **two new tunnels** (13 miles; 21 Km)
- Crossrail will provide a **high-frequency, high-capacity and accessible** service and is expected to carry over 200 million travellers, increasing London's rail capacity by 10%
- Crossrail will incur **wider socio economic** benefits to the entire Capital by:
 1. boosting **employment** in London
 2. reducing pressures on **road traffic**
 3. providing **environmental** benefits
 4. impacting on **road safety**.

The implementation of this large transport infrastructure is expected to:

- improve conditions for **sustainable economic development** and population growth
- enhance transport connectivity and **accessibility**
- engage in **urban renewal**.



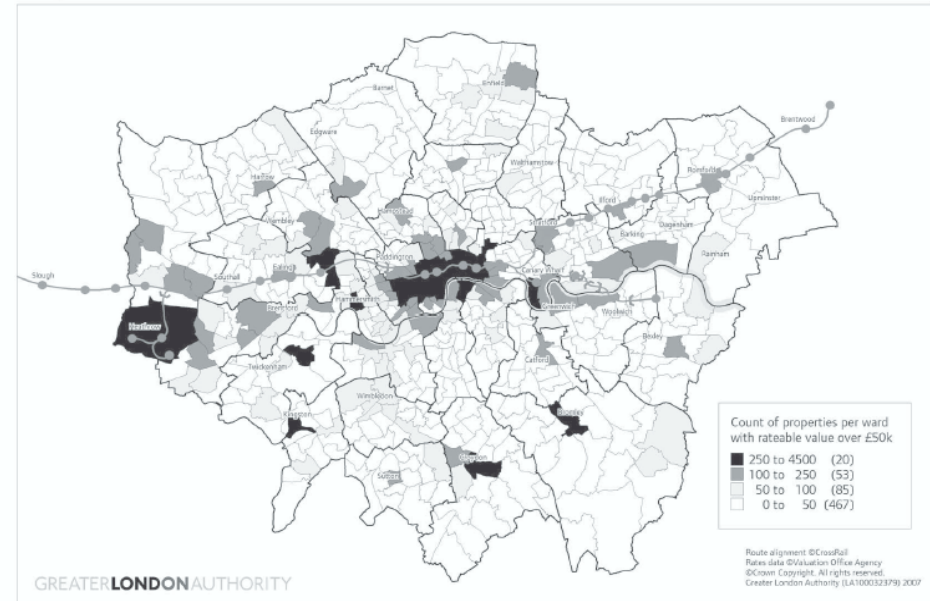
4. London Crossrail Financing: a case study

1. The total cost of the infrastructure is set at £14.8 Billion.
2. Business activities located in London contribute to finance the cost of the infrastructure by CIL, Section 106 and Supplementary Business Rate.
3. **Crossrail Business Rate Supplementary (BRS)** is the largest element of contribution to finance the cost of the infrastructure.

Table 1. Crossrail fund sources

Crossrail Financing	
Estimated capital cost	14.8
Sources of Funds	
<u>TfL & GLA</u>	
Total	7.1
<u>Department for Transport and BAA Grants</u>	
Total	5.1
<u>Other</u>	
Total	2.6
Total Sources	14.8

Properties With Rateable Value Over £50k



- **BRS Act (2009)** gives decision making power to local authorities to impose a levy to finance local projects to promote economic development.
- The London Mayor imposed a **2 Pence per Pound** of rateable value across London businesses with rateable value above £55,000.
- BRS is expected to raise **£4.1 billion**: £3.5 billion allocated to secure borrowing of GLA and 0.6 billion are used to finance construction cost directly.

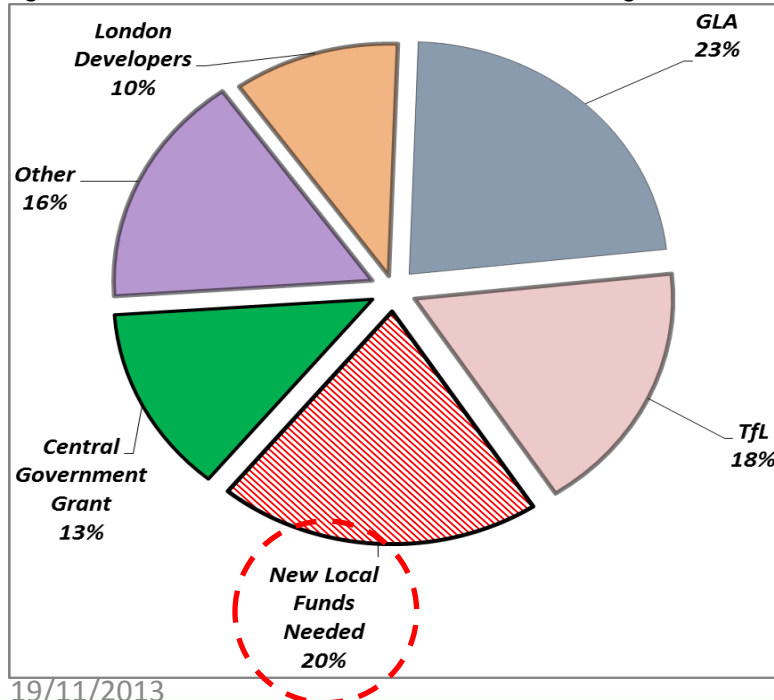
4. London Crossrail Financing: assumptions

Logical Structure of the analysis:

- Reduction of State grant provision by 20% (£1.02 Bln)
- ↓
- GLA needs to find a new way to raise funds
- ↓
- Alternatives: government loan (PWLB) and capital market.



Figure 1. Crossrail Fund Sources: the Central Government Budget Reduction



- GLA secures its bond issue with additional BRS revenue.
- The additional revenues are pledged exclusively to repay the municipal bond issue.

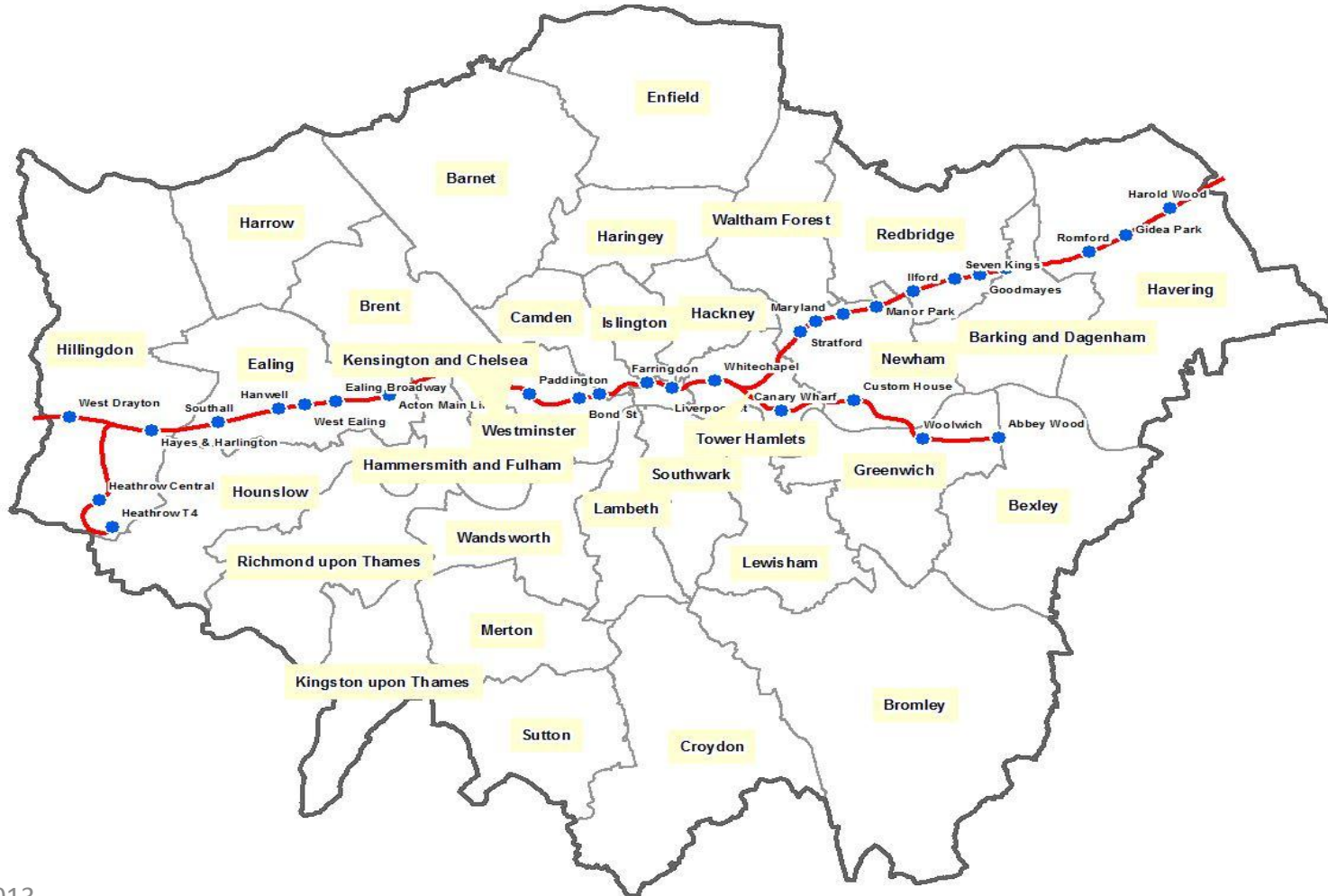
4. Objectives

The study proposes **two strategies** to address a hypothetical reduction in central government grants. The study is articulated through three steps:

1. **Evaluate** if London authorities are able to raise additional funds by implementing a progressive BRS tax rate to bridge a funding gap (£1.02 billion) left open by a reduction of central government grants (**Strategy 1**).
2. **Assess** whether additional BRS revenues, generated by Strategy 1, can be pledged to the repayment of a municipal bond (**Strategy 2**).
3. **Fiscal Burden Test** if the increase in BRS tax rate leads to a drop in the tax base which offsets the benefits achieved in **Strategies 1 and 2**.

5. Strategy 1: London Crossrail Additional Funding through BRS

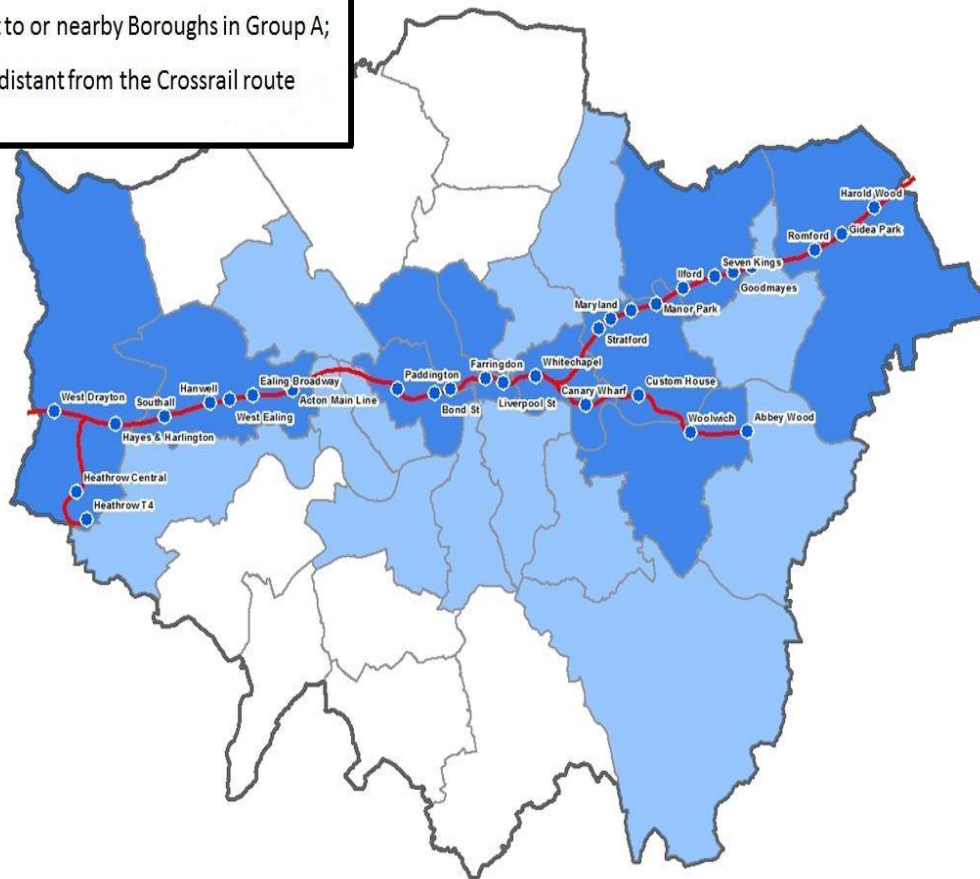
- BRS is an additional 2 pence per pound paid in Business Rate;
- The BRS tax rate assumes that all GLA boroughs receive the same benefits from Crossrail;
- Despite the distance from Crossrail infrastructure.



5. Strategy 1: Additional BRS Scheme

To overcome this drawback, **Strategy 1** suggests an additional tax rate which makes **BRS progressive**. **Six different Scenarios** are proposed.

- Group A: Boroughs that have Crossrail stations located within them;
- Group B: Boroughs adjacent to or nearby Boroughs in Group A;
- Group C: Boroughs that are distant from the Crossrail route Boroughs;



<i>Scenario</i>	Zone A	Zone B	Zone C
1	0.01	-	-
2	0.01	0.005	-
3	0.0075	-	-
4	0.0075	0.0025	-
5	0.005	-	-
6	0.005	0.001	-

5. Strategy 1: Data analysis and discounted cash flow simulations

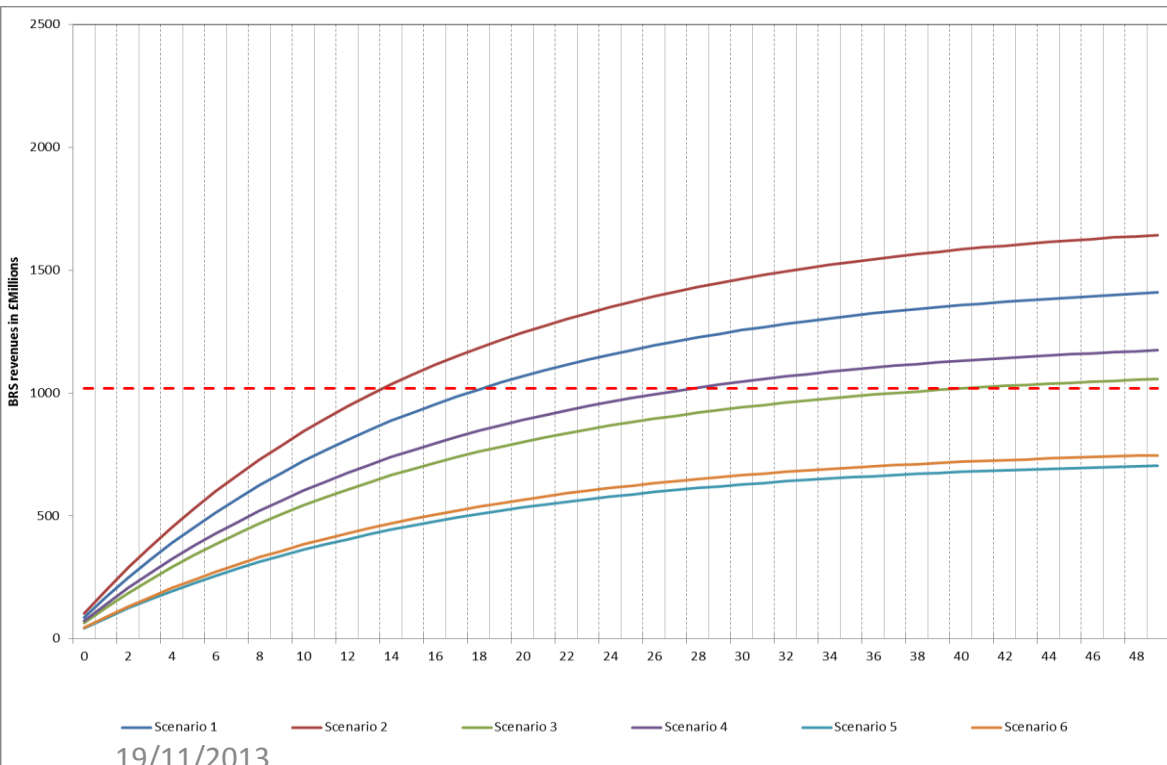
Table 2. BRS revenues per year

	Scenario 1	Scenario 3	Scenario 5
TAX RATE	0.01	0.0075	0.005
Total BRS Revenues	87.538	65.6535	43.769

Table 3. BRS revenues per year

	Scenario 2		Scenario 4		Scenario 6	
TAX RATE	0.01	0.005	0.0075	0.0025	0.005	0.001
Total	87.538	13.1415	65.6535	6.91225	43.769	2.6283
Total BRS Revenues	102.126		72.9475		46.3973	

Discounted Cash flow analysis to evaluate feasibility of scenarios



Discounted cash-flows interest rate of 6.29%, used in the current GLA calculation to discount BRS future revenues.

Scenarios 5 and 6 are not feasible at this stage.

Scenarios 1 and 2 raise the money needed in less than **18 years**.

A more **balanced solution** is achieved by **Scenario 4**.

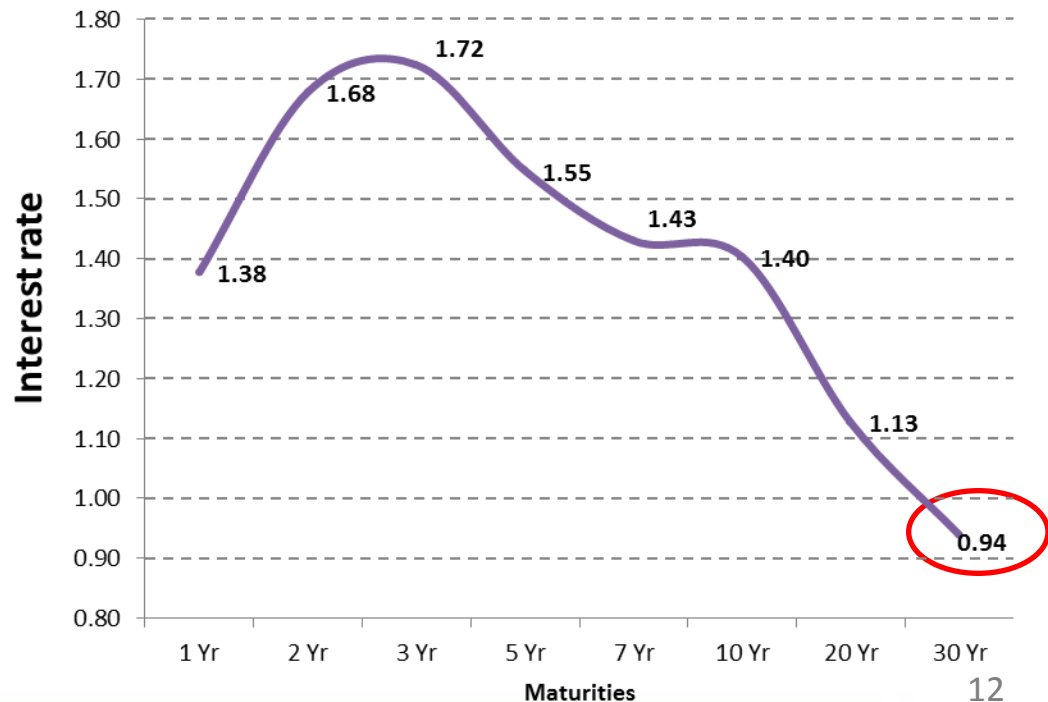
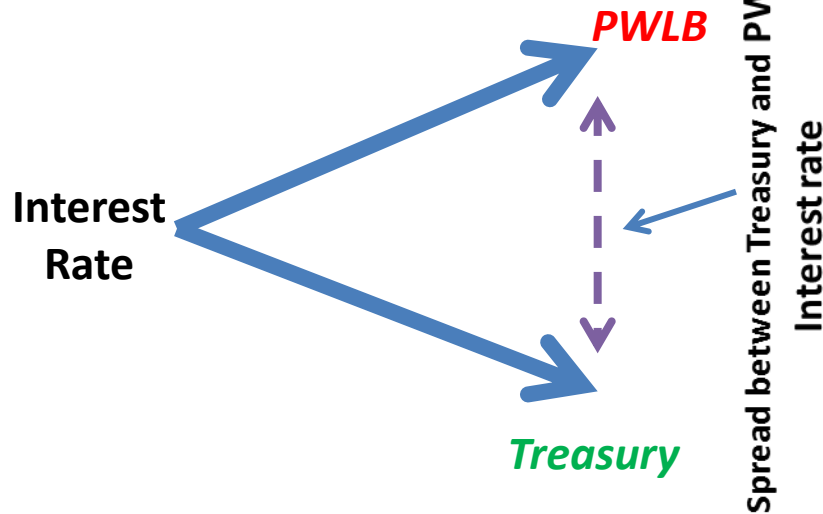
Scenario 3 is viable only if a 38 year investment period is considered.

6. Strategy 2: assumptions

Assumptions:

- 30 year maturity
- Central Government grant reduction 20% (1.02 Billion)
- Municipal Bond issue repaid by additional BRS revenue over 30 years
- Quantify the interest rate savings achieved under the scenarios of Strategy 1.

Borrowing costs: ceiling vs ground:



6. Strategy 2: Municipal bond backed by BRS

According to the GLA data, the new scenarios will provide these additional revenues:

Table 2. BRS revenues per year

	Scenario 1	Scenario 3	Scenario 5
TAX RATE	0.01	0.0075	0.005
Total	87.538	65.6535	43.769

If the revenues generated over 30 years are used to repay the cost of a municipal bond, the GLA can achieve the following interest rate savings:

Table 3. Total saving per scenario and Basic Points

Savings	BP Savings	0	10	20	30	40	50	60	70	80	90
	<i>Scenario 1</i>	-	20.31302	41.07215	62.28958	83.97784	106.1499	128.8191	151.9992	175.7043	199.9492
<i>Scenario 3</i>	-	15.23476	30.80411	46.71718	62.98338	79.61242	96.61431	113.9994	131.7782	149.9619	
<i>Scenario 5</i>	-	10.15651	20.53608	31.14479	41.98892	53.07495	64.40954	75.99958	87.85216	99.9746	

6. Strategy 2: Municipal Bonds backed by BRS

According to the GLA data, the new scenarios will provide these additional revenues:

Table 4. BRS revenues per year

	Scenario 2		Scenario 4		Scenario 6	
TAX RATE	0.01	0.005	0.0075	0.0025	0.005	0.001
Total	87.538	13.1415	65.6535	6.91225	43.769	2.6283
Total A+B	102.126		72.9475		46.3973	

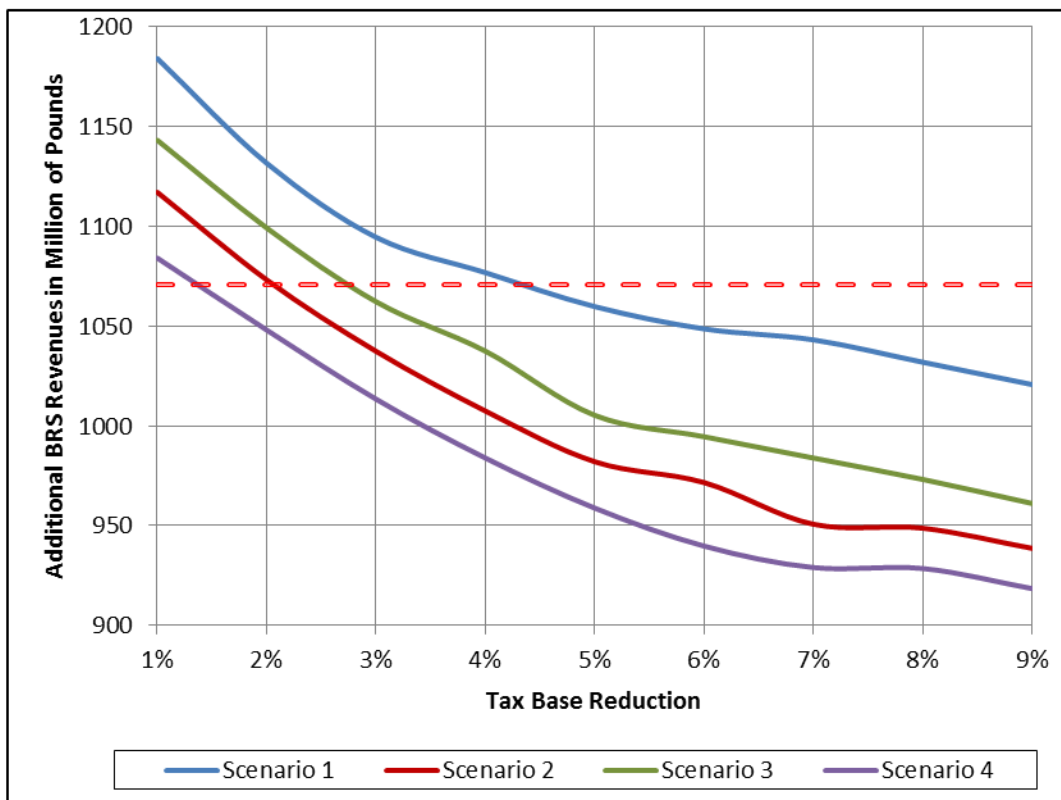
If the revenues generated over 30 years are used to repay the cost of a municipal bond, the GLA can achieve these interest rate savings:

Table 5. Total saving per scenario and Basic Points

Savings	BP Savings	0	10	20	30	40	50	60	70	80	90
	<i>Scenario 2</i>	-	23.35962	47.23519	71.63785	96.58203	122.0826	148.155	174.8149	202.0788	229.9634
<i>Scenario 4</i>	-	16.84306	34.05161	51.64006	69.61883	87.99864	106.7905	126.006	145.6567	165.7548	
<i>Scenario 6</i>	-	10.77114	21.774	33.01975	44.51507	56.26681	68.28203	80.56804	93.13236	105.9828	

6. Additional BRS schemes and analysis of Municipal Bond potential savings

- Evaluate the validity of the schemes presented in the former models.
- Strong assumption that an increase in the BRS rate does not influence the economic and fiscal activity of London.
- Business flight and an increasing tax burden makes the location unattractive to new business.



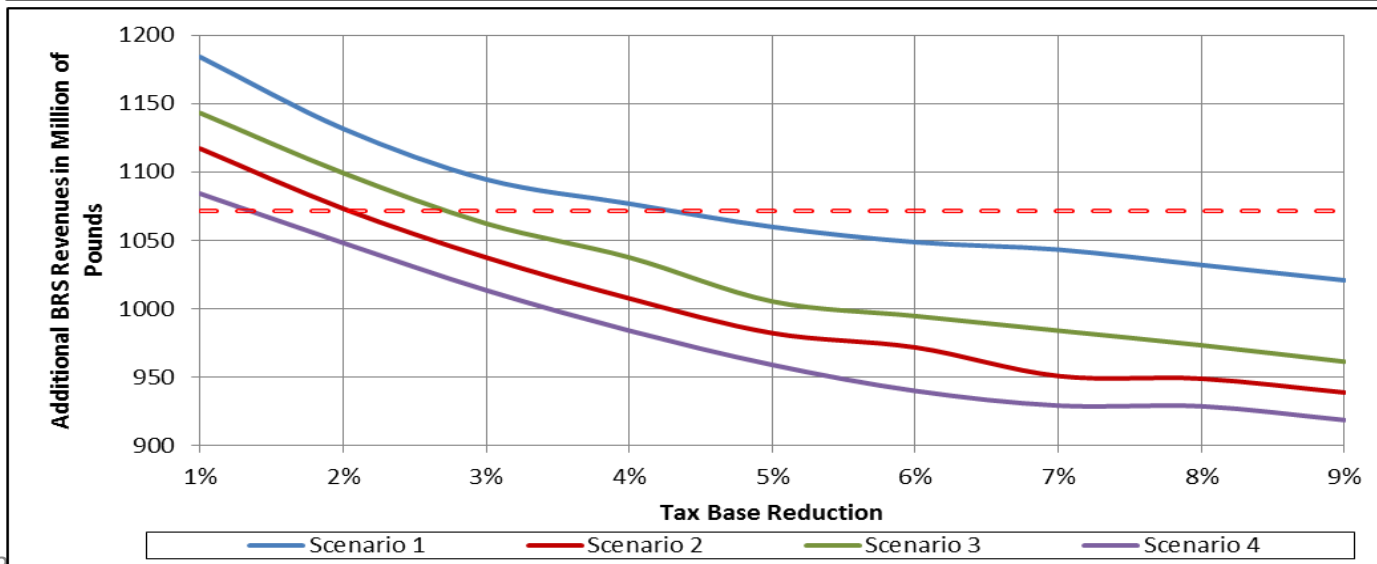
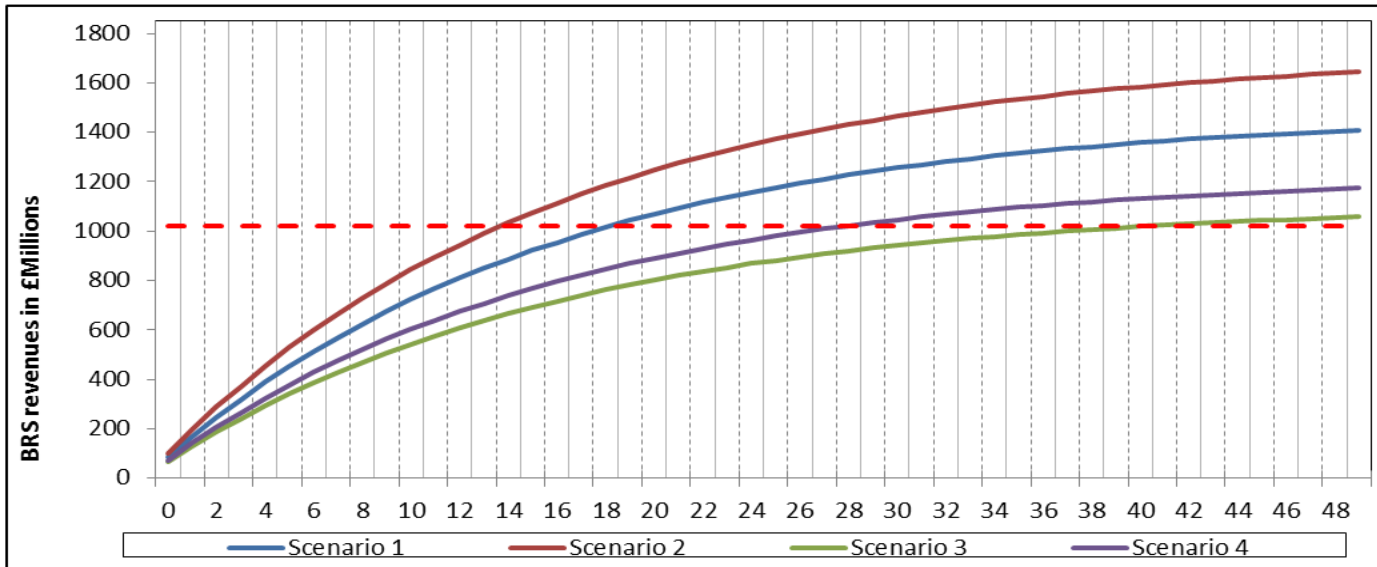
The schemes proposed are still viable, although a substantial tax base reduction occurs

The tax base drop undermines the validity of the BRS schemes, and another solution needs to be proposed



BRS additional scheme validity should be **screened** before the implementation, and **monitored** during the application.

6. Strategy 1 vs Strategy 2: a comparison



7. Conclusions

1. Land Value Finance (LVF) and Business Rate Supplement (BRS) are flexible fiscal tools at the disposal of local authorities which can be used to secure municipal bond issues.
2. According to the estimation in Strategy 1, BRS progressive raises between £1.5 billion and £0.8 billion to fill a hypothetical financial gap left open by central government cuts.
3. In Strategy 2, the results indicate that using municipal bonds backed by BRS enables GLA to save, on average, £90 million, or reduce the BRS life by two years.
4. However, an increase in the fiscal burden can undermine the validity of the BRS strategies: above a reduction of 4% in real estate values induces business flight and consequently shrinks the tax base, thereby cancelling the benefits gained through the BRS.

7. Policy Recommendations

Land Value Finance is a valid tool for raising financial sources for transport infrastructure.

However, it needs to be tailored to the context and fiscal regime in the city under consideration.

An excessive tax burden undermines the Land Value Finance mechanism's validity and leads to a distortion in the market, thereby inducing business flight and consequently shrinking the tax base.

Thank you

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