Land value capture

Final report
February 2017

EVERY JOURNEY MATTERS

'Then, as the millennium was dawning, a miracle happened. The government returned every penny that I had paid in taxes over the previous 40 years. So for four decades I had lived tax free – and I had not dodged the taxman! How was this possible?

I 'confessed' in 'Taken for a Ride'. Taxpayers generously funded the extension to the Jubilee Line, one of London's Underground lines. Two of the stations were located close to office properties that I own. Those two stations raised the value of my properties by more than all the taxes that I had paid into the public's coffers over the previous 40 years.'

— Don Riley in Harrison, F (2006) *Wheels of Fortune*

In the March 2016 Budget, the Government invited Transport for London (TfL) to submit detailed proposals for funding transport projects in the city using land value capture. Additionally, in July 2016 the Mayor of London reconvened the London Finance Commission, to help the Mayor and London's local authorities improve the tax and public spending arrangements for London to promote jobs, growth and greater equality. This technical report and supporting annexes are the result of a joint study by TfL and the Greater London Authority (GLA). Their purpose is to support policy discussions with Government, the Commission and wider stakeholders. They do not represent TfL or Mayoral policy.

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Executive summary

London has achieved remarkable success as a world city, attracting people and business from across the world. This success brings challenges, with increasing pressure on transport and housing supply and affordability. Solving these issues is necessary if London is to continue to function as a globally leading city. In particular, improving and expanding transport provision is central to driving economic growth, jobs and housing. At the same time we need to make London fairer, healthier and more sustainable, and continue to make life in the city better. Substantial investment over a sustained period is needed to enable this and the question of how this is to be funded is now a pressing one.

Since public transport generates significant positive externalities, it is not efficient for fare payers to cover all capital expenditure. In the past, general taxation has funded the gap (including business rates and government grants). But as the funding requirement grows, without alternative funding sources, there is no obvious way of paying for major network upgrades and extensions, other than increasing the burden on general taxation. Land value capture (LVC) is one such alternative funding source. This report investigates ways in which the Government could work together with the Mayor of London and ourselves at Transport for London (TfL) to improve the ability to capture land value uplift to fund transport investments in the Capital.

Land value capture refers to a set of mechanisms used to monetise the increase in land values that arise in the catchment area of public infrastructure projects. Our focus in this study is on transport (and related placemaking interventions), but land value capture has wider applications.

Users of public transport schemes typically value the benefits of such schemes well in excess of the fares charged for them. This ‘consumer surplus’ is capitalised into the value of land around the access points to the transport network, in the form of a ‘transport premium’ that is freely paid for property by transport users as they compete with each other to locate as close as they can to new transport facilities. In addition, transport projects often catalyse new development opportunities in their catchment area, which generates planning gain for landowners. These are both windfall gains for those fortunate enough to own land or property in the catchment area of proposed transport schemes. LVC mechanisms seek to capture a proportion of such gains to fund the investment that gives rise to them.

London is not alone in exploring land value capture approaches. Hong Kong has long practised a uniquely successful model of land value capture, through the Mass Transit Railway's (MTR's) 'rail plus property' model, and other Asian cities such as Beijing are following a similar approach. Infrastructure Victoria (in Australia) has recently published a policy paper for consultation on expanding the use of land value capture, setting out options for reform including betterment levies and charges on development, while the Gold Coast Light Rail line in Queensland is partly funded through a tax on property owners along the line of route. Atlanta, San Francisco and Kansas City in the United States have all experimented recently with land value capture levies focused on development and real estate.

There is a vast theoretical and empirical literature that supports the idea that the benefits of transport schemes (alongside placemaking interventions) get capitalised into higher land values. There is clear evidence from Nationwide (using mortgage data) of the existence of a 'transport premium' of up to 10.5 per cent around Tube and rail stations in London.

KPMG and Savills' research for this study (using transactions data from Land Registry and local controls for background price inflation and local place effects) indicates that past projects such as the Jubilee line extension (JLE), the Docklands Light Railway (DLR) extension to Woolwich and the upgrade and incorporation of the North London line into the Overground network have produced significant land value uplifts, of 52 per cent, 23 per cent and six per cent respectively, relative to controls. While there is no clear evidence so far of Crossrail (still in construction) lifting the values of existing residential stock[1], there is evidence that it has produced uplifts on commercial property (around 1-2.5 per cent per annum relative to controls), and in enabling new residential development (with a 50 per cent increase in density of new housing within 500 metres of a Crossrail station compared to areas further away).

'Eight prospective TfL projects that cost around £36bn (including Crossrail 2…) could produce land value uplifts of about £87bn'

Looking ahead, KPMG and Savills estimate that future transport schemes in London are also likely to produce large land value uplifts, both in increasing the value of existing properties and by inducing new development. For instance, a sample of eight prospective TfL projects that cost around **£36bn** (including Crossrail 2, the Bakerloo line extension and the DLR extension to Thamesmead) could produce land value uplifts of about **£87bn**.[2]

The problem is that existing value capture mechanisms extract only a small fraction of land value gains from transport investment, in an ad hoc and poorly targeted manner. These mechanisms include: business rates on commercial premises; Stamp Duty Land Tax (SDLT) on the transfer of land or property (although this accrues to central rather than local government); over-station development; and development taxes such as the Community Infrastructure Levy (CIL) and

[1] Previous reports such as those from CBRE (2016) and GVA (2012) have forecast that Crossrail will produce significant land value uplifts. However, Savills' research for this study indicates that there is little evidence from actual property market data of such uplifts on existing residential stock during the construction period of Crossrail. This does not mean such uplifts will not materialise once the line is operational; it merely indicates that no uplift effects have been *anticipated* in the residential property market thus far.

[2] Costs and total value uplift over 30-year period from FY19 to FY48. Unless specified otherwise, all costs, uplift and funding figures in this report are expressed in present value terms.

negotiated developer contributions. Governments in the past have attempted to improve the ability to capture land value uplifts, but mainly by targeting new development, and arguably using relatively blunt approaches and high tax rates. Improvements in data, technology and research methods now enable cities to isolate the transport-induced value uplift in a more intelligent, targeted and potentially more proportionate manner.

While business rates retention offers a potential model for extracting user benefits to fund transport improvements that service large new commercial developments, there is no equivalent for residential development. This makes it difficult to fund transport-led housing expansion in London. Projects such as Barking Riverside extension and the Northern line extension (NLE) demonstrate that land value capture can provide significant funding for extending transport connectivity to areas that could support large expansions of housing. But such efforts have been episodic and opportunistic, relying on special circumstances (such as a single 'anchor' developer or the pre-existing Greater London Authority, GLA, ownership of land) that are unlikely to be replicable across the city. That is a major lost opportunity in a city like London, where residential property prices are among the highest anywhere in the world.

This study suggests ways to improve the ability to capture land value uplift systematically from major transport investments. If implemented, they should materially improve the Mayor's ability to fund our capital expenditure programme in response to local demand, and to fund transport connectivity to poorly served areas to unlock new housing supply in London. They should also materially improve the ability to support higher levels of affordable housing associated with new development around new transport investment in the Capital.

The Mayor's clear preference is that control over the major property taxes (Council Tax, business rates and Stamp Duty Land Tax) and powers to introduce new charges and levies should be devolved to London, which will make the sorts of changes described below straightforward to implement within London. For this reason, this report should be considered alongside the final report of the London Finance Commission (LFC).

To improve the extraction of land value uplifts on new and existing stock:

One The Government should explore with the Mayor a framework for assigning zonal value growth in **Stamp Duty Land Tax** receipts relative to a London-wide or local control, either as part of a wider devolution of SDLT receipts, or through a zonal SDLT assignment scheme.

Two As part of business rates reform, the Government should consider regular revaluations and full **zonal retention of revaluation growth from business rates**, either as part of the wider devolution settlement for London or through an enhanced Enterprise Zones (EZs) policy.

Three The feasibility, effectiveness and acceptability of creating a **new land value capture charge** – such as a transport premium charge as discussed in this report – should be explored further. Such a charge could capture a proportion of the premium paid to landowners by new purchasers or tenants of residential property for access to new transport facilities. This would create a mechanism to capture transport-induced value uplift that cannot currently be captured within the existing property tax system, and has the potential to be very effective in funding new infrastructure (particularly schemes that could expand the supply of housing). The introduction of such a charge is likely to be difficult, and we therefore suggest the Government works with the Mayor and ourselves to consider producing a paper for wide consultation.

This study suggests the key principles of such a charge should be that it:

- Applies in defined zones of influence around new or significantly upgraded transport facilities (such as Tube stations)
- Be based on regular transparent market-based measurement of the premium freely and willingly paid to landowners by new purchasers or renters of residential property for access to transport within such zones of influence
- Be proportionate to the measured premium paid for access to transport in each location
- Be designed so that
    - New purchasers and tenants can be given a free choice to opt in to paying the charge through their decision to locate within the zones of influence, and are given the opportunity to pay the same overall premium for access to transport with the charge that they would have been freely willing to pay without it
    - Existing residents can be entirely exempted from paying the charge

The consultation paper should set out the overall objective of land value capture, describe the need for and the basic principles of the new charge and set out the advantages and disadvantages of various design options, as discussed in the main report.

To improve the extraction of planning gain from new development:

Four For zones with low to medium development potential with multiple landowners, the Government should maintain the Mayor's powers to levy a **Community Infrastructure Levy (MCIL)** as a general development tax that makes a contribution to strategic transport infrastructure.

Five Bespoke **section 106** developer contributions should continue to be negotiated on transport-dependent developments where there is a clear, single 'anchor' landowner or developer.

Six For zones with high development potential (particularly for housing) with multiple landowners, the Government, TfL and the GLA should consider the **development rights auction model (DRAM)**, a new land value capture mechanism.

The key features of the development rights auction model are:

- The integrated planning and consenting of land use and density in a defined zone around a major new transport facility, in parallel with the planning of the transport scheme
- The introduction of a periodic development rights auction, in which development rights over land put forward (voluntarily) by landowners are auctioned in assembled packages to a competitive field of developers. Gains above a reserve price are shared between the participating landowners and the planning/auctioning authority. No development taxes (such as CILs or s106 payments) are payable under this scheme. All non-operational but developable public sector-owned land within the zone is entered into the auction as part of a standard public sector land pooling arrangement
- The introduction of a high zonal CIL for those landowners who wish to self-develop rather than participate in the auction
- The use of reformed compulsory purchase order (CPO) powers (following successful passage of the Neighbourhood Planning Bill 2016) to deal with holdout problems that threaten to stall development, together with further consideration of other options as discussed in the report

Seven The Government should consider making the process of acquiring land through **compulsory acquisition** more transparent by:

- Introducing an independent valuation panel to determine the market value of the land based on the 'no scheme' principle set out in the Neighbourhood Planning Bill 2016
- Establishing (early in the land acquisition process) an objective and transparent evidence base on alternative development potential in the absence of the scheme, for such a panel to determine 'no scheme' market values, for instance through the use of a modified section 17[3] certificate

[3] Land Compensation Act 1961

To manage the property market risks and cash flow timing mismatches likely to be associated with LVC instruments:

Eight Individual transport projects should not be significantly exposed to property market risks that they are not well placed to manage. Instead, land value capture should be **managed as a programme** run at a corporate rather than project level, so that property market risks are diversified across projects. While the programme is in trial or demonstration mode (with a small number of pilot projects), the exposure of individual projects to property market risks should be limited through appropriate contingency arrangements. This could include the deployment of the UK Guarantees scheme.

Nine Cash flow timing mismatches (between capital expenditure and LVC revenues) should be addressed by borrowing in accordance with the Prudential Code.

Finally, to test how these measures would work in practice:

Ten Following further work on detailed design and implementation issues, the land value capture instruments proposed in this study could be tested on a selection of forthcoming transport schemes in London.

These measures could release significant resources to fund transport investment.

As part of a package of reforms, our modelling indicates that a transport premium charge could potentially generate between **£13bn-£28bn** of funding across eight sample TfL projects investigated in this study, particularly from projects such as Crossrail 2 and the Bakerloo line extension (BLE). The zonal retention of SDLT value growth (relative to controls) could potentially raise **circa £6bn** while full zonal retention of revaluation growth in business rates could raise another **circa £7bn**. Revenues from a systematic implementation of the DRAM are likely to be more modest (since new development is typically a fraction of total land and property stock), but our modelling indicates it could potentially raise **circa £3bn** across the sample projects, compared to expected revenues from the existing CIL regime of **£1.5bn**. In total, the model illustrates that these mechanisms could potentially raise **circa £29bn-£44bn** across the eight sample projects, which have a capital cost of circa **£36bn**.

Although the proposals presented in this study have been developed in the context of transport investment in London, they are of more general applicability to other UK cities and other types of public investment that creates land value uplifts. Significant land value uplifts will in general arise wherever public investment generates large consumer surpluses, access to the benefits of such projects depends on location and land markets are relatively inelastic.

1. What is land value capture?

1.1. Throughout this study, we use the term 'land value capture' to mean a set of mechanisms used to monetise increases in land values that arise in the catchment areas of transport projects. We refer to the area over which such land value effects occur as the 'zone of influence'[4] of the relevant project.

1.2. This definition raises a few issues. First, how do we measure an increase in land values? Sometimes this can be observed directly from the sale of land in the market. But more typically, an increase in underlying land values has to be inferred from the value of what has been built or is going to be built on the land, ie the market prices (sale or rental) of residential and commercial properties, both existing as well as new. That is the method used in this study. We infer that land value uplift has occurred either when the market price of existing properties within the zone of influence goes up faster than that of properties outside it, or when new properties can be developed on land within the zone of influence through a change in use or densities (so that developers are willing to pay higher prices for acquiring the land from landowners) by virtue of the transport scheme.

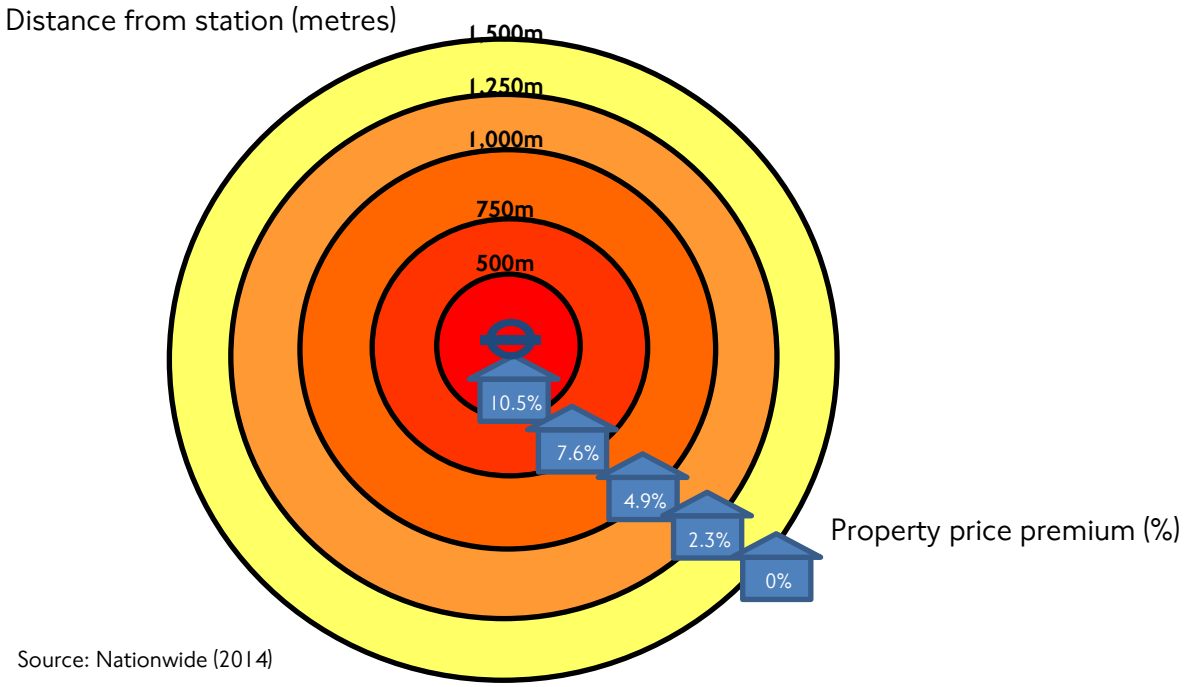
1.3. Second, why do land value uplifts arise in the catchment area of transport projects? As **annex 1** explains in more detail, transport projects produce land value uplifts because transport users compete with each other (and with non-transport users) to acquire land in proximity to transport links to access transport user benefits. This bids up the value of land in proximity to transport links. In general, how far land values go up depends on how much users value the transport benefits, and on the supply response. If a lot of developable land is available nearby and there are no significant planning restrictions on new development, the supply response would be quite elastic and the increase in land rents could be fairly muted.

1.4. But in most urban contexts (certainly in London), strict planning controls on land use and densities often make the supply response relatively inelastic. So most (if not all) of the user-benefit from a transport scheme gets capitalised into higher land values within the zone of influence of the scheme. Over time, this shows up as an observable price premium enjoyed by land and property within the zone of influence over those outside it. For instance, Nationwide (2014)[5] found (using mortgage data) that residential properties in London command a price premium of 10.5 per cent for proximity within 500 metres to a Tube or National Rail station. This premium falls to 4.9 per cent for distances up to 1,000 metres, and to zero per cent beyond 1,500 metres as shown in **figure 1**.

[4] Empirical evidence suggests that for residential properties, the zone of influence extends to a 1-1.5km radius around urban transit hubs. For commercial properties, the radius is shorter, at about 500 metres. Within the central business district (CBD), agglomeration effects are likely to dominate, and the effects on commercial property values are likely to diffuse over the entire CBD rather than be concentrated locally.

[5] Nationwide (2014) London homebuyers willing to pay a substantial premium to live near a Tube or train station. House Price Index Special Report. Nationwide Building Society, Swindon.

Figure 1 - The 'transport premium' in London property prices



Source: Nationwide (2014)

1.5. Planning control over land use and densities produces a second kind of land value uplift, known as 'planning gain'. This can sometimes be confused with the first kind produced by transport projects. Planning gain arises because a new planning consent to change use or increase the density of development on a piece of land immediately raises its value to the landowner. This happens first, because controls on use mean that the value of land in residential use is an order of magnitude higher than its value in industrial or agricultural uses. So when permission to change land use (say from industrial to residential) is given, the land immediately becomes significantly more valuable. And second, planning controls on density (particularly of housing) mean that the market values of new properties in London are usually significantly higher than their development costs, even after allowing for a reasonable profit margin for development. This 'residual' profit is capitalised into higher land values.

1.6. The connection between transport projects and planning gain arises because improvement in transport accessibility or capacity is often a necessary condition for planners to give permission to change land use or increase densities, or for development to take place at all (particularly in poorly connected areas). At the same time, the increase in land values induced by transport creates incentives for landowners to develop land more intensively. Planning gain arising from new development catalysed or induced by transport projects is therefore an indirect benefit to the landowner[6]. In such cases, it becomes possible to capture both kinds of uplift (user benefits as well as planning gain) for the purposes of (at least partially) funding transport projects (and related placemaking interventions). That is the approach adopted in this study.

1.7. Although it is implicit throughout the study that the proceeds from land value capture are used to fund the specific project that gave rise to them – and this may be an important part of

[6] While planning gain is an indirect benefit to the landowner, new development is not necessarily a net benefit to society. This depends more on whether the private and social values of development diverge. However, this nuance is not relevant from the point of view of land value capture.

making such capture politically acceptable – this is not intrinsic to the definition. In the final section of this report, we discuss the merits of taking a programmatic approach to land value capture.

1.8. Further, although there is considerable evidence that transport projects create land value uplifts, they are sometimes necessary but not sufficient conditions. They may need to be accompanied by the planning for and investments in 'place quality improvements' as part of wider regeneration programmes.[7] In this study, we define 'transport projects' broadly to include any associated investments in placemaking that is necessary to ensure that transport user benefits are actually realised in practice.

1.9. Finally, land value capture is different from 'tax increment financing' (TIF). TIF is a way of hypothecating the incremental taxes that arise from economic growth in an area for the purposes of funding a project that is a necessary condition for such growth. These may or may not be taxes on land and property, and may or may not involve uplifts in land values. Following our definition, land value capture refers to specific situations where a transport project is a necessary condition for an uplift in land values. This may or may not involve an increase in tax receipts. The distinction is seen most clearly in projects like the Northern line extension to Battersea Power Station, where both mechanisms are at work. Business rates retention is the TIF element, whereas section 106 payments and CIL receipts are the land value capture element.[8]

[7] For instance, a new Crossrail station at Old Oak Common will not produce large user benefits without the accompanying investment programme to regenerate the site.

[8] Strictly, the increase in rates income from an increase in rateable values (at revaluations) within the Enterprise Zone is also an element of land value capture, following the definition in this study. The (more dominant) element that corresponds to the increase in rates income from growth in stock is the pure TIF element.

2. Why should land value capture be used to fund public transport projects?

The core economic argument

2.1. As **section 1** noted, transport projects produce land value uplifts due to the capitalisation of direct user benefits into the value of land within the zone of influence. They are also frequently a necessary condition in the realisation of planning gain from new development, which is an indirect benefit provided to landowners.

2.2. This is the theoretical basis for using land value capture as a method for funding public transport projects. It represents the extraction of direct and indirect transport benefits that are capitalised into the value of land, to pay for project costs.

2.3. This raises a question: why wait until user benefits get capitalised into land values? Why not extract them directly by charging higher fares? This question lies at the heart of what makes land value capture significant in a public transport context. Many other infrastructure sectors generate large consumer surpluses (for instance, water networks, power plants and electric grids). But no one talks about land value capture in these contexts, for two reasons. First, locational land rents tend not to arise in these other sectors (since access does not depend upon location). And second, full cost recovery through user charges is generally both economically efficient and politically feasible, and no subsidy is required from the state. This is not the case with public transport.

2.4. The use of public transport generates large positive externalities (such as reduced air pollution, fewer accidents and lower carbon emissions). This makes it economically inefficient to set fares for full cost recovery, since the social cost of passenger journeys tends to be lower than their financial cost. And a desire to ensure that public transport is accessible to all income groups makes it politically impossible. For this reason, in the absence of any other ways of monetising their benefits, public transport projects around the world depend upon grants from their host governments to cover the difference between fares and costs.

2.5. While this explains why fares are generally not set to recover costs, it does not explain how it is that one may be able to recover costs through the property market when it cannot be done through the farebox. Since housing capacity within a reasonable walking distance of public transport access points in a city like London is limited, the property market acts like a vast price discriminating monopolist which systematically extracts the consumer surplus over the fares charged from transport users.

2.6. The fare is the same for all users in a zone, but the value of the transport benefit varies from user to user. So the property market sets up an auction of its own. It allocates proximity to transport facilities to the highest bidder in the property market, as users compete with each other to buy property close to transport links. This is why a very large part (if not all) of the consumer surplus from transport (above a given fare level) ends up in property prices as transport premia (see **annex 1**) paid by 'new entrants' to incumbent property owners.

2.7. In other words, evidence from the property market tells us that most of our customers are willing to pay more for the transport benefit we provide (for example, from network expansions or

upgrades) than the fares we charge them. However, since our farebox cannot distinguish between customers based on their willingness to pay, they pay this 'excess value' in the property market (not at the farebox), as an observable and measurable 'transport premium'. If even a proportion of this excess value could be efficiently captured from the property market, it could transform the funding of public transport in London.

2.8. Well-designed transport projects should produce significant direct and indirect benefits (in excess of their costs) that are capitalised into land values. For this reason, land value capture (if applied systematically) has the potential to reduce reliance on grants from the Exchequer while keeping fares affordable for users, and ensuring optimal usage of the public transport network.

2.9. Apart from the above, there are other arguments that support the use of land value capture as a funding instrument for transport schemes:

The equity argument

2.10. The equity argument is premised on the need to expand housing supply in order to address interregional and intergenerational inequities in the distribution of ownership of housing assets. The expansion of transport connectivity to areas that would otherwise be poorly served by the transport system raises the viability of development in such locations. By addressing the shortage of funding that exists for such schemes, land value capture can therefore provide a valuable means of securing increases in housing supply and improving overall affordability.

The fairness argument

2.11. The fairness argument is premised on the fact that land and property owners receive windfall gains through land value uplifts from transport projects[9], while the general taxpayer pays for them. Those who benefit the most from transport schemes should therefore also contribute significantly towards their funding.

The efficiency argument

2.12. Land value capture mechanisms target the element of the value uplift that arises as a direct result of transport investment. They aim to secure value uplift from all beneficiaries, both existing and new, and target the most appropriate point in time for this capture to occur.

The project selection and delivery argument

2.13. Funding projects by monetising their benefits through land value capture (and taking on controllable risks) creates strong incentives for transport scheme promoters to ensure that these benefits are actually realised in practice. In particular, land value capture approaches naturally emphasise the integration of transport planning, placemaking and real estate development.

The devolution argument

2.14. Funding mechanisms based on land value capture can allow greater devolution to occur. By extracting a proportion of localised land value gains, they can enable urban transport systems to

[9] To some extent land value uplifts may be seen as a kind of compensation to those land and property owners that are affected by disruptions associated with some transport projects. However, not all landowners who receive these windfall gains are affected by disruptions and even among those who are affected by disruption there are formal direct methods of compensation in place under the existing legislative system.

become more self-sufficient, more responsive to local demand and less dependent on the Exchequer.

3. The scale of the opportunity in London

3.1. As part of this study we commissioned KPMG and its subcontractor Savills to investigate whether major public transport investments in London in the past have produced significant land value uplifts on commercial and residential properties. The land value effects around four projects were analysed:

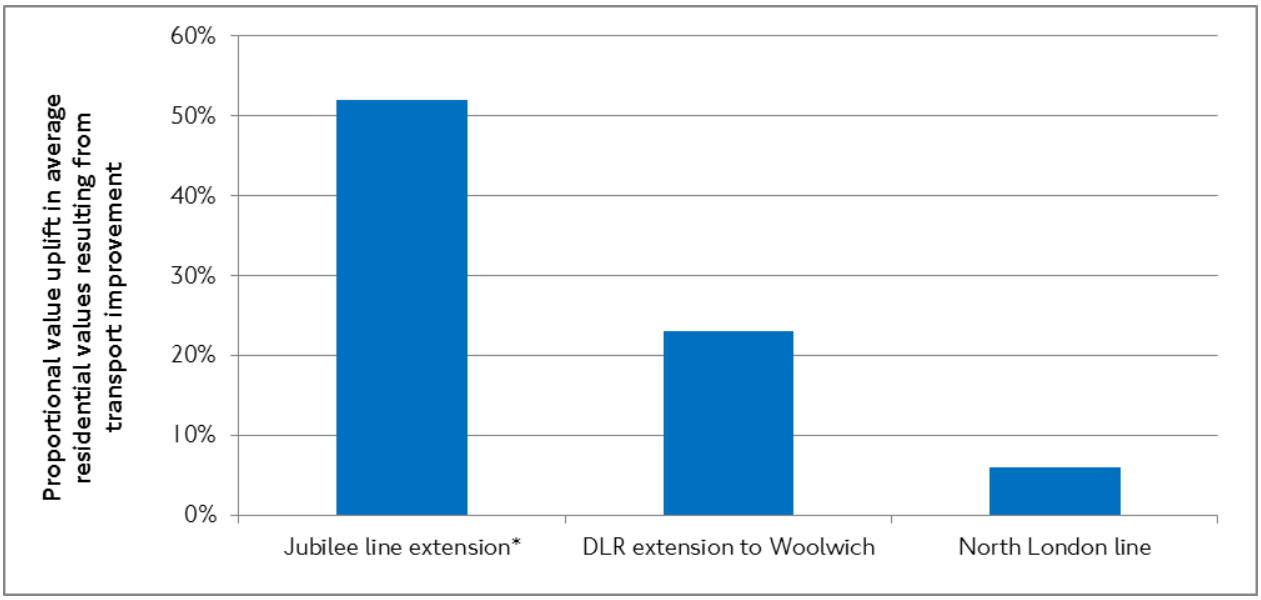
- The Jubilee line extension
- The North London line upgrade
- The DLR extension to Woolwich
- Crossrail

3.2. The detailed methodology and findings from this work are set out in **annex 2**.

Existing residential properties

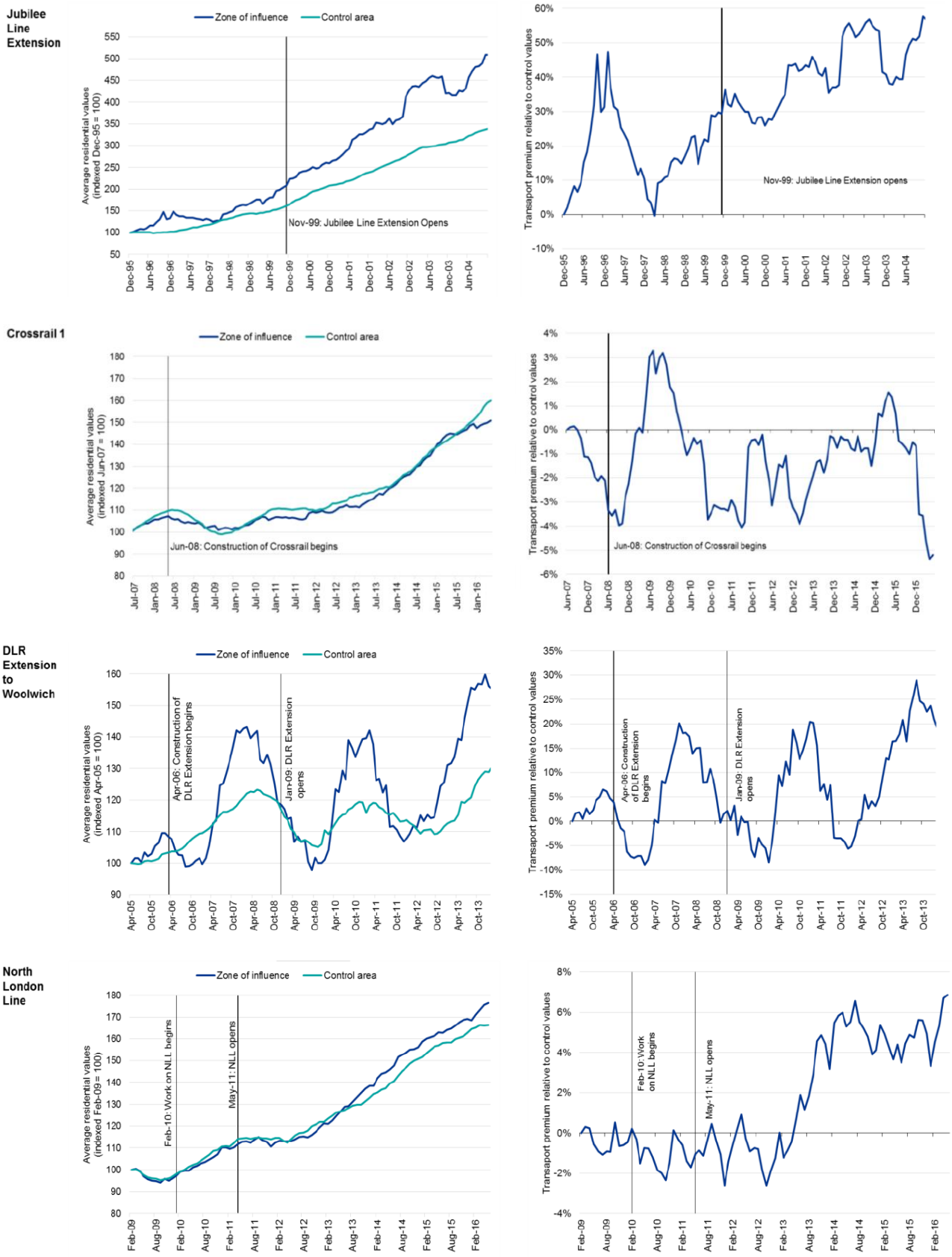
3.3. Savills extracted data from Land Registry on residential property transactions in the zones of influence surrounding the four projects. **Figure 2** below shows the cumulative residential land value uplifts associated with the completed projects. The uplift is measured from one year prior to construction starting on the project to five years after the project completion data (or from December 1995 to five years following project completion in the case of the JLE due to lack of data available prior to December 1995 from Land Registry).

Figure 2 – Total residential value uplift around historic case study projects



Source: Savills analysis for TfL; Land Registry
* Excludes stations with low sample sizes of property transactions

Figure 3 – Residential value uplift around historic case study projects – time series



Source: Savills analysis for TfL; Land Registry
Excludes stations with low sample sizes of property transactions

3.4. **Figure 3** shows:

- For the Jubilee line extension, values within the zones of influence initially grew much faster than the control areas, before falling back in line with the control areas. Over the last two years of construction, value growth within the zones of influence accelerated, leading to a transport premium of approximately 30 per cent when the JLE opened in November 1999. The values within the JLE zones of influence grew faster than the control areas for the five years after the JLE opened, allowing for some volatility

- For Crossrail 1, values within the zones of influence remained broadly static between July 2007 and mid-2011, despite construction of Crossrail starting within that period. Average values within the zones of influence have not deviated significantly from values within the control areas over most of the study period. The exception to this is the last three months of value data, which show growth in the zones of influence falling behind the control areas

- For the DLR extension to Woolwich Arsenal, values within the zone of influence were more volatile than within the control area. This is to be expected, as the zone of influence is smaller than the control area and contains fewer properties. In spite of this volatility, values within the zone of influence have grown faster than values in the control area over the longer-term study period and cumulative uplift has been positive for most of the period

- For the North London line refranchising and upgrade, there is parity between values in the zones of influence and the control areas until April 2013, two years after the upgraded line began operating. Since then, values in the zones of influence have taken a step up above control area values. Following this step change, value growth has been similar across the zones of influence and the control areas

3.5. The clear conclusion that emerges from Savills' analysis is that the JLE, DLR extension and North London line projects have produced residential property price uplifts, after controlling for background house price inflation and local place effects. These uplifts were large for the JLE, significant for the DLR extension and modest for the North London line. This is in line with the scale of the accessibility improvement in each case.

3.6. For Crossrail, no residential property price premium has been detected so far relative to local or citywide controls. Earlier studies (GVA Grimley[10], CBRE[11]) assumed there would be a significant uplift in property values along the line of route during construction, as well as once the line is operational. There is no theoretical reason that property values in the vicinity of a transport project must necessarily rise during its construction period. This depends on the extent to which the likely benefits of the project are *anticipated* by property market participants in advance of the facility becoming operational. There certainly appears to have been anticipation in the case of the Jubilee line extension, but none is evident from actual property market data around Crossrail stations. Significant value uplifts are nevertheless expected once Crossrail is operational, and the transport benefits begin to flow. A more complete analysis of Crossrail's effect on property prices will therefore follow from the joint Department for Transport (DfT)-TfL evaluation study that is expected to report in 2019, after the line is operational.

[10] GVA Grimley, Crossrail Property Impact Study 2012, http://www.crossrail.co.uk/news/articles/crossrail-predicted-to-increase-property-values-by-55-billion#.UH1T2W9sBkR

[11] CBRE Residential, The Impact of Crossrail on Property: an update 2016, https://www.cbreresidential.com/uk/sites/uk-residential/files/Crossrail%2C%20an%20update.pdf,

Box 1: Isolating the effect of transport on property prices

Property prices rise and fall for a large variety of reasons. How can one isolate the effect of accessibility to transport? The literature review in **annex 7** describes different methods to do this. Two common techniques are hedonic pricing, and the 'difference in difference' method.

Hedonic price methods consider the variation in property prices over time or space, and they use regressions to test how much of this is explained by variations in transport factors (such as accessibility and connectivity) and place factors (such as the quality of local schools or high street).

'Difference in difference' methods examine variations in property prices (usually over time) between 'treatment groups' and 'control groups'. Treatment groups are properties that are in proximity to a transport project, and so lie within its zone of influence. Many studies use a 1-1.5km radius around the transport access point (such as a Tube station) as a measure of reasonable proximity (based on a reasonable walking distance). Control groups are sets of properties that are not in reasonable proximity to the transport link, but otherwise are of similar locational attractiveness to the treatment group.

Well-designed controls should control for both background house price inflation as well as the effect of local place factors, leaving a residual which is likely to reflect a pure transport effect. For instance, good controls could be local sets of properties in a ring that lies just outside the zone of influence, or sets of properties in places of very similar locational attractiveness elsewhere in the city that don't have access to the transport scheme. Simpler controls can include a citywide house price index, which controls for background price inflation (but not for the effect of local place factors).

Savills has analysed the property price uplifts produced by the four previous London projects using a 'difference in difference' approach, with a one to two kilometre ring of property transactions as a local control. Sensitivity testing has also been undertaken to compare these results to borough price indexes. The property price uplifts reported are relative to local controls.

Existing commercial properties

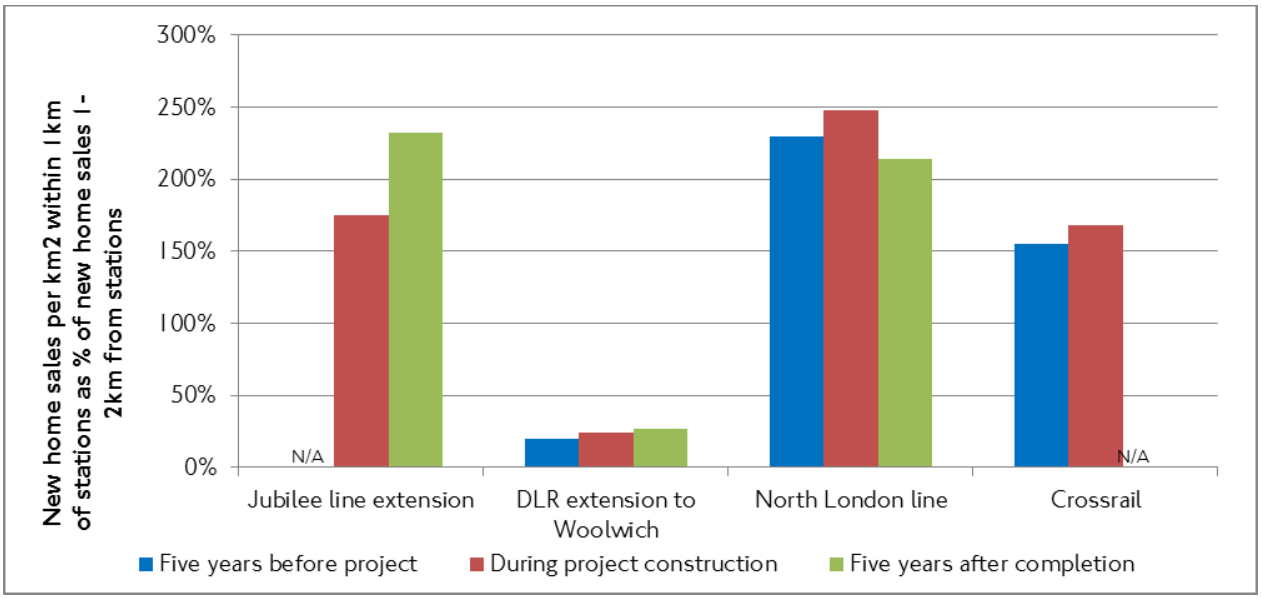
3.7. The commercial property market consists of fewer, larger units than the residential property market. There were not enough transactions around each individual station to make a similar transaction-based uplift analysis possible. Savills has therefore relied on a review of previous academic and property market research to establish the commercial property value uplift around each project, including recent work on commercial property uplifts associated with Crossrail published by London First. It reported that commercial premises within a half-mile (approximately 0.8km) radius of Crossrail stations experienced an increase in values of 8-15 per cent above that seen in properties outside this zone, following the first reading of the Crossrail Bill, and six to nine per cent following the commencement of construction. This represents an annualised uplift in values (above the baseline) of approximately 1-2.5 per cent per annum.[12]

[12] Ruth Thompson (2014). *The Crossrail Effect: The impact of the Arrival of Crossrail on Central London Commercial Property Prices.*

New development

3.8. Savills also extracted data from Land Registry on the density of new residential development adjacent to these historic projects relative to the density of new development in the surrounding areas, to help understand the extent to which the projects were associated with or induced new development in their zones of influence. **Figure 4** below summarises the findings from this research.

Figure 4 – Transport and new development in London



Source: Savills analysis for TfL; Land Registry

3.9. **Figure 4** shows that, in all cases except the DLR extension to Woolwich, the number of new homes delivered per square kilometre was greater nearer the upgraded/new station, reflecting the increased capacity for development within these areas with improved transport connectivity. For the DLR extension, one explanation for the relatively low density of new development around Woolwich Arsenal station could be the very high proportion of social housing in that area, which means there is only limited land available for private development. Higher density of new development within the zone of influence implies a higher planning gain associated with the transport project (see **box 2**).

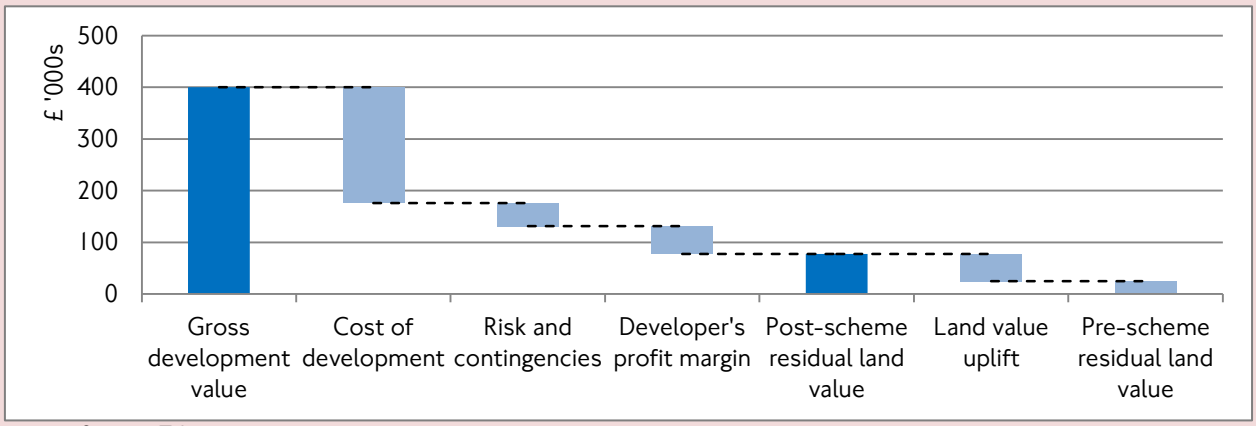
3.10. There is limited data available to assess the effect of transport projects on the density of new commercial development in the zone of influence compared to control areas for these projects.

Box 2: Transport and planning gain

How do we know that a particular transport project causes a particular planning gain? In some cases, it may be obvious. Some areas may be so inaccessible that no development could occur without transport connectivity. In the jargon, these would be called 'dependent developments'. All the development that takes place could therefore be reasonably attributed to the transport scheme. In more common urban situations, a transport scheme (for example, by creating additional transport capacity) enables higher densities of development on adjoining land, rather than being a necessary condition to development occurring at all. The challenge in such cases is isolating the effects of the transport scheme from what would have happened in its absence.

This study models the land value uplift (in the context of planning gain) as the difference between the with-scheme and no-scheme market values of land within the zone of influence. The with-scheme market values can be inferred from the gross development value, after deducting the costs of development and a reasonable profit margin for the developer (see **figure 5**). This is often called the 'residual land value'.

Figure 5 – Calculating land value uplift from residual land values



Source: TfL

The method of calculating no-scheme values is less settled. Options range from the existing use value prior to the transport scheme to the market value of the land (as observed from market transactions) prior to the announcement of the scheme. Existing use values take no account of any change in use or density that may have been possible in the absence of the scheme. Pre-scheme market values should reflect this, but can also incorporate 'hope value' associated with speculation in anticipation of the transport scheme.

The Government – in its CPO reform proposals as part of the Neighbourhood Planning Bill 2016 – has proposed the 'no scheme principle' ie what the market value would be in a world without the scheme. This is logical from the point of view of isolating the land value uplift from a given transport scheme, but it relies on a counterfactual of what development could have taken place on the land without the scheme.

In real world applications, constructing such a counterfactual is bound to be open to dispute. It is for this reason that a key component to enabling systematic and effective land value capture (from planning gain) in the UK is an objective determination (ideally from a relevant planning authority) of what use and densities of development would be permitted without the scheme; and a transparent calculation of land value based on this 'no scheme principle'.

Predicting uplift for future potential projects

3.11. Savills has used the evidence from the empirical literature, the London case studies and specific development potential studies undertaken by us to estimate (at an order of magnitude) the scale of uplift that might be produced by a sample of potential future TfL projects. This includes both the capitalisation of user benefits into land and property values, as well as the planning gain arising out of new development catalysed due to the projects. These projects, and the predicted land value uplift from each, are summarised in **table 1** below.

Table 1 – Potential future TfL projects (net present value in FY 2016/17 prices, £bn)

Scheme name	Type	Estimated cost	Value uplift on existing stock	Value uplift on new development	Total land value uplift	Uplift as % of cost
Crossrail 2	New rail line	27.5	47.8	13.1	60.9	221%
Bakerloo line extension	Rail line extension	3.3	11	7.1	18.1	548%
Crossrail 1 extension	Rail line extension	1.8	2.4	1.8	4.2	233%
Old Oak*	Regeneration	0.9	1.7	1.2	2.9	322%
DLR extension	Rail line extension	0.4	0.013	0.4	0.4	103%
Poplar	Regeneration	1.3	0	0.2	0.2	15%
A13	Regeneration/ tunnel	0.8	0	0.2	0.2	25%
Camden Town station	Station upgrade	0.2	0.045	0.003	0.048	24%
Total (rounded)		**36**	**63**	**24**	**87**	**242%**

Source: Savills analysis for TfL; value uplift over 30-year period from FY19 – FY48 (base case)

3.12. This sample of projects is diverse, including both rail and road schemes, and is reasonably representative of our project pipeline. What makes it interesting is that it is not obvious that large land value uplifts should arise in all these cases, or in the same way. For instance, Crossrail 2 and the Bakerloo line extension are clearly premised on capacity and accessibility improvements, which should lead to large land value uplifts as predicted by the theory, and in line with a project such as the JLE. But the A13 tunnel or the decking scheme at Poplar produce relatively modest transport improvements. However, they release more land for development, which presents the opportunity for value creation in the surrounding area as a result of 'placemaking'. Theory would suggest that such schemes should have a limited effect on local land rents adjacent to and near to the scheme (the 'placemaking' effect), and most of the value uplift should come instead from the planning gain associated with changing the use or densities of development on the land released by the scheme.

3.13. The modelling outputs in **table 1** illustrate this pattern. These sample projects have a total capital cost of circa **£36bn**. Altogether, KPMG's modelling suggests that they could potentially produce land value uplifts of the order of **£63bn** on existing stock, and of the order of **£24bn** on new development.

3.14. But if we focus on the individual projects, there are some clear differences. Projects such as Crossrail 2 and the BLE produce the majority of their land value uplifts from the capitalisation of user benefits into residential property prices, with Crossrail 2 (but not the BLE) generating material

uplifts also from commercial properties. In contrast, projects such as the DLR extension, Poplar and the A13 tunnel produce their impacts largely by catalysing new development.

3.15. The conclusion that emerges from this study of the past and survey of the future is unmistakeable. The scale of the opportunity to use land value capture as a method of funding transport investment is vast.

4. How well does the public sector currently capture land value uplift?

Few taxes on existing stock are sensitive to increases in land or property values

4.1. The principal mechanism available to capture value uplift on existing stock is land and property taxation. Our review (see **annex 3**) suggests that current taxes on land and property are relatively poor value capture instruments because they are not very responsive to increases in values:

- **Stamp Duty Land Tax** is directly linked to actual market values of land and property (at the time of disposal or sale). It covers both freehold and leasehold transfers. The highest rate at which Stamp Duty taxes any residential property transaction is 15 per cent,[13] but the average rate (based on the average 2015 house price in London of £500,000) is only three per cent[14]

- **Capital Gains Tax (CGT)** is applied at 28 per cent on the difference between the acquisition cost and the disposal value of residential property, and at 20 per cent for other chargeable assets. However, it exempts a homeowner's principal residence. This has the effect of excluding the majority of residential property transactions. It covers disposals, but not rentals (which are more common with commercial property)

- **Business rates** (which are charged at circa 50 per cent of assessed rateable value) do respond to value growth at (relatively infrequent) revaluations, and cover all commercial premises (whether owned or rented). However, this value growth is 'neutralised' at the national level by reducing the tax rates so that the overall national yield from rates is unaffected (in real terms). If rateable values rise in London, businesses in London only pay higher business rates to the extent that rateable value growth in London is higher than the national average

- **Council taxes** (which cover all residential properties, whether owned or rented) are charged based on property value bands, with property occupiers in higher value bands liable to pay a fixed multiple of those in lower value ones. Council Tax rates vary from one local area to another, with the average 'band D' rate in London at £1,298 per year, or about six to seven per cent of the average 2015 property rental value).[15] Council taxes do not respond to value growth at all. In England, neither the property values nor bands used for Council Tax purposes have been updated since 1991. Therefore relative changes in property values since 1991 are not reflected in changes in Council Tax charges. The banding structure of

[13] The maximum rate of 12 per cent for a primary residence plus the additional rate of three per cent for a second home.
[14] A property worth £500,000 would pay Stamp Duty of £15,000 under the new SDLT rules.
[15] The maximum band of council taxation is twice the band D rate, or about £2,600 per annum in London. The average rental yield in London is about 4.3 per cent (Joel Marsden, GLA, 2015). Therefore the imputed rental value of the average London house price of £500k would be circa £20,000 per annum. The median property in London is in band D, and so the median rate of taxation on a rateable value basis is only about six to seven per cent on the average property. In practice of course, the extraction rate is zero because properties have not been revalued for Council Tax since 1991.

council taxes also dampens any response to residential property value growth that might occur even with regular revaluations, since properties only pay more in Council Tax if they move from one band to another

There are limitations to capturing value from new development using development taxation or negotiated contributions

4.2. Value uplift on new development can be captured through development taxation and direct development by public authorities. There are, however, serious limitations with both methods.

4.3. Development taxation has had a difficult history in the UK. The **Community Infrastructure Levy (CIL)** was introduced in 2010 after many failed attempts at introducing a development tax over the post-war period. Borough CILs do not appear to have raised much revenue (yet)[16], are set at higher rates, provide a greater range of reliefs and exemptions, and do not appear to have funded significant local infrastructure.[17] Developers continue to complain that the existence of the CIL has not speeded up the development process, as they still have to negotiate lengthy section 106[18] agreements with local authorities. By contrast, the Mayoral CIL, introduced in April 2012 to help fund Crossrail, has been a relative success. It is set at a low rate, makes few exemptions, is applied broadly across London, is predictable, requires no negotiations with individual developers and has been successful in raising significant funds (circa £307m so far).

4.4. There are two principal issues with the design of the CIL (from a land value capture perspective).

- First, it is a flat rate tax on space rather than value.[19] This can make it regressive in application, as more profitable developments pay a lower share of profits compared with less profitable ones. Once a CIL rate is set, it is relatively difficult to adjust it to reflect changes in development values over time (such as those caused by the effect of a new transport scheme). CIL rates have to go through a lengthy examination in public, which introduces an element of inertia into the rate setting process

- Second, CIL rates have to be set to ensure 'strategic viability' of development across the area as a whole. When local authorities conduct such viability assessments, they tend to base them on hypothetical rather than actual developments. As a result, CIL rate setting has to include a considerable margin for error (typically 40-50 per cent) to ensure most developments remain viable, which creates a bias towards lower rates. Local authorities also have to be mindful of the cumulative burden of affordable housing requirements and CILs on development viability. The planning process allows developers to challenge CIL rates or planning obligations on viability grounds, and there have been complaints in the media that well-resourced developers are able to negotiate affordable housing requirements downwards by using pessimistic viability assessments (see **box 3**)

[16] Savills (2014). *CIL: Is it delivering?*
[17] Planning Advisory Service (2015). *S106 and Community Infrastructure Levy*.
[18] Under the Town and Country Planning Act 1990.
[19] This is not entirely a fair criticism, since local authorities can (and do) vary CIL rates according to use (for example, residential vs commercial) and geography (for example, riverside vs non-riverside).

4.5. The net result of this is that borough and Mayoral CILs together extract transport-induced planning gain in London at a relatively low rate (of between 4-12 per cent).[20]

Box 3: Problems with the current system of viability assessments

The effectiveness of the current planning system to provide specified levels of affordable housing and to extract developer contributions to pay for infrastructure provision has been called into question on numerous occasions. A 2015 article published in the Guardian newspaper[21] neatly summarised the current shortcomings of the system, arguing that developers were allowed to get away with making a minimum contribution while enjoying abnormal profits.

In essence, the planning policy on affordable housing and other developer contributions consistently fails to be enforced due to the information asymmetry between the local planning authority and the developers. At the heart of the problem lies the process of viability assessment, which determines the level of affordable housing provision and other contributions that the developer can afford to make without making their development unviable.

The Guardian article highlighted that these viability assessments are treated as commercially confidential by the developers and are not usually shared with the local politicians and the general public. While the local authority's planning officers can gain access to the assessments, they often lack the information and resources to challenge the viability figures effectively.

A 2012 addition of a clause to the National Planning Policy Framework (NPPF) stated that developer plans 'should not be subject to such a scale of obligations and policy burdens that their ability to be developed viably is threatened'. This provides sharp incentive to developers to downplay the viability of their developments.

The article suggests two ways in which viability assessments can be 'gamed'. First, many assessments use current or historical sales values rather than forecast ones. The gap between estimated and actual sales values in a fast-growth development zone can become large and widespread. Second, developers frequently use market values rather than existing use values to determine the threshold of viability. This means that as land values rise in an area due to speculation or anticipation of a new transport scheme, the 'land value uplift' from which the authority can capture value for affordable housing or infrastructure gets smaller and smaller.

4.6. On the other hand, the CIL has the considerable merits of simplicity and transparency. **Section 106** agreements are more flexible, can be tailored to individual sites and tend to raise more in resources,[22] but are time-consuming and unpredictable from a developer's point of view. Since the introduction of the CIL, the Government has curtailed the use of section 106 payments to fund strategic infrastructure (like transport). Its focus is now more on site-specific mitigations (such as affordable housing requirements – see **box 4**).

[20] Mayor of London (2011). *Draft Charging Schedule for the MCIL*. This notes that MCIL rates as a proportion of average house prices vary from 0.48 per cent to 1.13 per cent. To illustrate the relativity to planning gain, assume (in line with a common rule of thumb in the property market) that land values are a third of house prices. So MCILs would represent a tax of about 1.3 per cent to 2.3 per cent on land values. Borough CILs tend to be three to five times higher than MCIL rates, so tax land values at about 3-10 per cent. At the margin therefore, land value uplifts produced by transport would be taxed at an overall rate of between 4-12 per cent by CILs.

[21] The Guardian, 25 June 2015: 'Revealed: how developers exploit flawed planning system to minimise affordable housing', https://www.theguardian.com/cities/2015/jun/25/london-developers-viability-planning-affordable-social-housing-regeneration-oliver-wainwright

[22] DCLG (2014). *Section 106 planning obligations in England 2011-12*.

4.7. More broadly, on projects (such as rail extensions) where dependent new development is easily identifiable with a single 'anchor' developer, it is possible to capture a reasonable proportion of the value uplift through negotiated section 106 developer contributions. The Northern line extension to Battersea Power Station (circa 20 per cent of project cost met via developer contribution) and the Overground extension to Barking Riverside (circa 65 per cent of project cost met via developer contribution) are both recent examples of this.

4.8. In most projects, 'dependent developments' are not so easily identifiable, and there is often no single 'anchor' landowner or developer. This is generally the case for strategic transport projects or longer rail extensions, for example Crossrail 1 and the JLE. In these instances, the effect of transport schemes can often lead to increases in the density of development and/or acceleration of its delivery, but it is not the deciding factor in whether development takes place at all. With such major transport schemes, planning consents for new development are usually obtained after the scheme has already been announced by the Government, leaving no real incentive for developers to contribute financially. Moreover, the sheer process of capturing land value uplift via individually negotiated developer contributions across a large number of developments becomes prohibitively difficult and expensive. Transport authorities therefore have to settle for proportionately lower amounts of developer contributions in such situations, for example, £300m of section 106 contributions to Crossrail, going up to £600m if MCIL is included

Box 4: Affordable housing, development taxes and residual land value

Figure 5 above illustrates the elements that determine the scale of land value uplifts produced by transport schemes. In general, gross development values are sensitive to planning policies on use and density, and to planning obligations regarding affordable housing. All else being equal, the greater the capacity added by a transport project to a location, the greater its effect on densities of development. Higher densities will generally produce larger land value uplifts for the landowner, since unit costs of development tend not to increase with scale. On the other hand, the greater the requirements for affordable housing imposed by a planning authority, the lower the gross development value for a given cost of development, and the lower the land value uplift generated.

Affordable housing requirements (or payments in lieu) and development levies like the CIL are both well established methods used by local authorities to extract value from planning gain. The value extracted is generally used to fund the expansion of local affordable housing (to make the development 'acceptable' in local terms), and the provision of local infrastructure such as schools, parks and local transport facilities (to mitigate its impact on local public services). The implication of this is that land value capture for the purposes of funding major transport schemes interacts closely with the capture of planning gain for these other purposes.

If local planning policies (particularly for affordable housing) and development levies are not coordinated with new land value capture mechanisms being used for transport, there is a risk of conflict. Essentially, land value capture for transport should take the local planning framework (including the affordable housing requirement) as given. It should then seek to capture some of the increase in residual values accruing to the landowner from the additional development enabled (within this planning framework) by the transport scheme. For this to work smoothly, affordable housing requirements or local development levies need to be carefully coordinated with land value capture mechanisms in anticipation of the increased residual land values created by transport. Otherwise, both capture mechanisms could end up competing with each other for the same land value uplift, and there is a serious risk of rendering development unviable as a result.

(two to four per cent of project cost), or £100m (less than five per cent of project cost) in the case of the JLE.

Direct development methods are better at extracting value uplifts on new development, but the scope of such methods is limited in practice

4.9. Direct development involves the acquisition of land for development by a public authority, using either voluntary methods (for example, buying land or property at the market price from willing sellers) or compulsory land acquisition. In principle, if a public authority could acquire developable land in the zone of influence of transport projects at pre-scheme market values, it could then develop and sell that land (with new consents for use and density reflecting the effects of the transport scheme). It could then potentially fully capture the difference between the post-scheme market values of the land and its pre-scheme value.

4.10. The most obvious constraint preventing such direct development through **open market purchases** by public authorities is the need to find large land acquisition budgets, which are generally unavailable given the public authorities' borrowing constraints. The second difficulty is that open market purchases by the authority will not generally be at pre-scheme values; market values adjust quite rapidly to price in the 'hope value' of a new transport scheme, and large scale purchasing by a public authority will only accelerate this effect. Much of the land value uplift may therefore be surrendered in the high cost of land acquisition.

4.11. The main alternative to open market purchases is **compulsory land acquisition**. However, the ability of transport authorities to exploit such opportunities is severely limited in practice. For instance, compulsory purchase powers do not allow a transport authority like TfL to acquire land beyond the core transport footprint (which is usually a small fraction of developable land in the zone of influence). Even where CPO powers are available (for example, for land for stations and worksites that could then be turned into over-station development), land can be expensive to acquire under the current legislative framework since the principle in law is to pay market value, and the courts have generally interpreted this quite liberally in favour of affected landowners.

4.12. Moreover, individual projects (even if armed with large land acquisition budgets and wider CPO powers) may rationally choose not to exercise these powers in an effort to limit stakeholder objections to the core transport scheme as it makes its way through the planning and legislative stages, particularly if land value capture is not integral to the funding of the scheme.

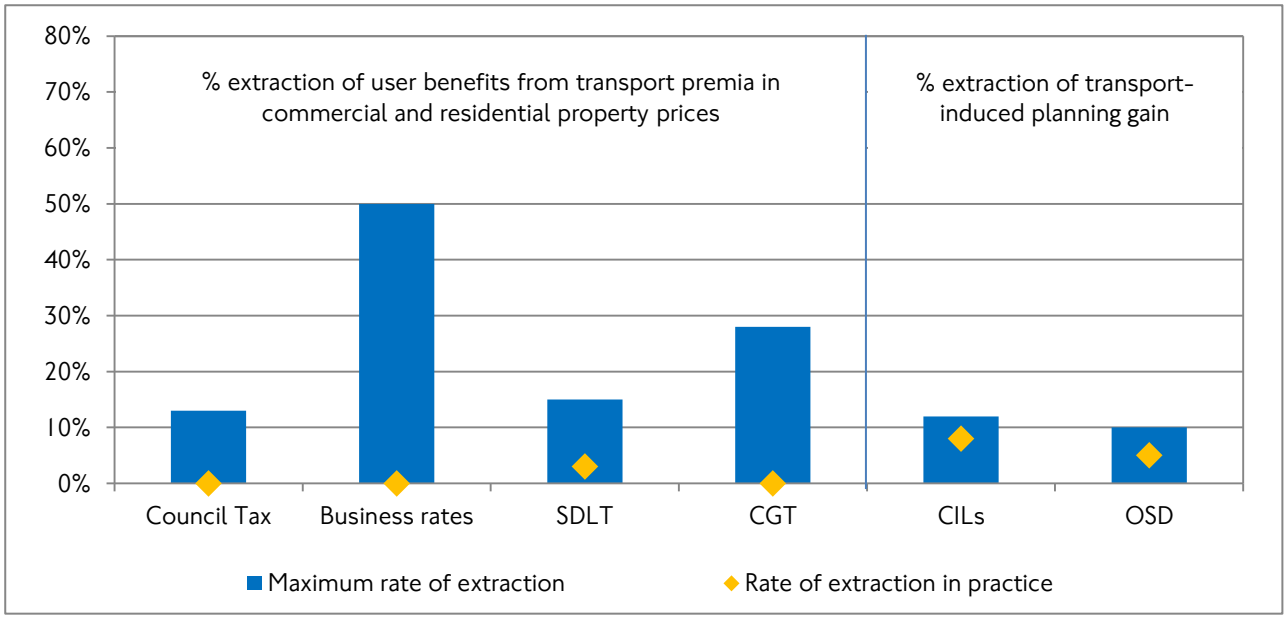
The public sector captures a small fraction of the aggregate land value uplift catalysed by transport projects with existing instruments

4.13. The net result of all of the above is that the public sector currently captures only a small fraction of the overall land value uplift from transport projects (see **figure 6**).

4.14. This is because the current value capture sources are limited to:

- Stamp Duty receipts that arise from disposals in a project's zone of influence (which capture on average only three per cent of the uplift, and only on freehold or leaseholder transfers)[23]
- The Mayoral CIL/borough CIL which currently capture between 4-12 per cent of value uplift at the margin
- Direct over-station development, (which allows air rights above stations to be exploited) but is typically a small fraction (5-10 per cent of the new development within a transport project's zone of influence)

Figure 6 – Current rates of extraction of land value uplift by existing instruments



Source: TfL estimates

4.15. In addition, although on average revaluation growth is neutralised nationally within the business rates regime, above average revaluation growth from business rates can be retained within Enterprise Zones. Bespoke section 106 contributions can also be negotiated in certain situations (particularly with single, large dependent developments).

4.16. **Table 2** summarises our analysis of the major gaps in the existing system of land value capture.

[23] SDLT receipts accrue to the Exchequer rather than to local government, and are not in general available to fund transport projects.

Table 2 – Major gaps in the existing framework for land value capture

Type of uplift	Beneficiary	Existing LVC instrument	Commentary
User benefits capitalisation	Residential property	SDLT	SDLT exists but accrues to Exchequer. Limited LVC with 3% average rate.
	Commercial property	Business rates (national non-domestic rates, NNDR)	(1) Business rates revaluation growth occurs, but is neutralised nationally (2) SDLT exists but accrues to Exchequer
Planning gain	TfL – over-station development	Over-station development (OSD)	Typically a small fraction of developable opportunity in the zone of influence
	Small developments along line of route	CIL	Preset, flat rate, limited by viability concerns, low proportion of planning gain
	Dependent, large 'anchor' developments	Bespoke s106/developer contributions	Requires clear dependence and credible threat that project will not proceed without large developer contribution
	Multiple large developments along line of route	CIL	Mayoral CIL/ borough CIL exist but very low value capture relative to opportunity

■ Major gap ■ Minor gap ■ Relatively efficient

5. How can we improve the value capture from existing land and property stock?

5.1. When user benefits are capitalised into property prices, they show up as a 'transport premium' enjoyed by residential and commercial properties in proximity to transport access points. This transport premium at any given time represents the discounted value of what property purchasers or tenants are willing to pay for the future stream of transport benefits available from that location. This section discusses various ways in which a proportion of this transport premium can be extracted from the property market.

5.2. For residential properties, the transport premium can be estimated by measuring the growth in property values within the zone of influence relative to a control, such as a ring of local properties outside the zone, or a London-wide house price index. For commercial properties, local controls can be harder to find but comparisons can be made against a wider city average or an estimated baseline counterfactual (as is done for Enterprise Zones).

5.3. The transport premium can be monetised by the property owner through renting out the property (at a premium rent), or by selling it and realising a capital gain. Those who occupy the property consume the benefit associated with the premium over time, for example as occupiers who enjoy proximity to the transport service.

5.4. There are therefore two basic methods to extract a proportion of the transport premium when it is monetised by the property owner; at or from the point of sale or disposal; or on an annual basis over time if the property is rented or leased.

A Capital Gains Tax is the best way of extracting capitalised user benefits at the point they are monetised, but it is challenging to implement

5.5. The **Capital Gains Tax** places a levy on the uplift in land and property values between its acquisition cost and its disposal value. In principle, this should be the most direct method of capturing value uplifts catalysed by transport projects (and associated place interventions) that are monetised by beneficiaries through disposals of land and property.

5.6. As noted in the previous section, the CGT in the UK does not cover an individual's main residence, and so the majority of residential transactions are excluded from its purview. If this exemption were removed, this could create a targeted way of capturing value from the 'zone of influence' of a transport scheme (by hypothecating the CGT proceeds from those zones). But such a Capital Gains Tax would capture not just the value uplift from transport, but also background house price inflation. It would therefore be difficult to justify on a zonal basis, as those within the boundary would question why they should be taxed on background inflation when those outside the boundary are not. A citywide or national application of a uniform Capital Gains Tax on the main residence could deal with this problem (with zonal hypothecation of CGT receipts). As the Mirrlees

Review[24] noted, however, this is likely to be not just politically very difficult but it could also have serious and potentially unpredictable effects on housing market activity.

The assignment of Stamp Duty Land Tax receipts is the simplest method of extracting a proportion of the transport premium at the point of sale of disposal

5.7. In extracting the transport premium at the point of sale, it may be easiest to work with what is already in place – ie **Stamp Duty Land Tax**. This instrument passively captures a small proportion of the transport premium (at an average rate of three per cent, and at a maximum rate of 15 per cent) when commercial or residential properties are sold.

5.8. A framework could be agreed in order to recycle the value uplift embedded in SDLT receipts for the purposes of funding the projects that created it. This would involve a **zonal assignment of value growth in Stamp Duty receipts**. The core economic argument for assigning value growth is that increases in property value uplifts in a transport scheme's zone of influence represent the capitalisation of transport user benefits that are additional to society, and therefore additional to the Exchequer (ie they would not occur without the transport scheme).

5.9. The obvious objection is that this is only true if value growth is measured relative to an appropriate control. A zonal assignment scheme could therefore be designed so that value growth in SDLT receipts relative to a simple control (say a London-wide or local borough-based control) is assigned or hypothecated to fund the transport scheme. Growth arising purely from background house price inflation, transaction volume growth or changes in tax rates, could continue to accrue to the Exchequer (as now).

5.10. SDLT assignment could be based on the principle that any change to SDLT receipts over time that arises purely from background growth in transaction volumes and house price inflation (or a change to SDLT tax rates) should be stripped out, leaving only the change that arises from value growth relative to the control in the zone of influence. To achieve this, a workable mechanism would need to estimate (for each year) the zonal SDLT stream that would have accrued to the Exchequer in the absence of the scheme, compare this to the estimated or actual SDLT stream with the scheme, and assign the difference to the project.

5.11. There are two ways of doing this. The first is the 'counterfactual' approach that we have taken to model SDLT assignment in this study. This involves forecasting the SDLT receipts that would have accrued in the absence of the scheme by projecting the growth in property stock in a no-scheme world, and making a set of assumptions in relation to background house price inflation and transaction volumes/turnover. The actual receipts, once the project has been implemented, can be compared with this baseline and the difference in receipts assigned to the project. In this way, only the SDLT receipts that arise as a result of the project would be assigned to it.

5.12. The main objection to this 'counterfactual' approach is that it is dependent on an accurate forecast of new development that would have happened in the absence of the scheme. Since this involves an element of judgement there could be reasonable disagreement about where the baseline should be set, which could significantly affect how much SDLT revenue is assigned to the project.

[24] Mirrlees, J et al (2011). *Tax by design*. Oxford University Press.

5.13. An alternative (simplified, more formulaic) approach that does not rely on a 'counterfactual' forecast of property stock involves the use of appropriate controls for background value and volume growth. For instance, London-wide indices for transaction value and volume growth could be used as controls. Only that element of the actual SDLT receipts that is in excess of the values produced after adjusting for these controls would be assigned to the project. **Box 5** sets out a detailed worked example of how such a 'controls-based' assignment model could be made to work in practice.

5.14. Assignment of zonal SDLT receipts would provide a significant value capture mechanism for transport projects, particularly those that enable new residential development in London. KPMG/Savills have estimated that zonal assignment of SDLT, as part of a package of reforms,[25] could potentially generate circa **£6bn** in funding relative to the **£36bn** net present cost for the sample TfL schemes. For large projects like Crossrail 2 or the BLE, zonal SDLT assignment could potentially provide funding of the order of **£4.3bn** and **£1.3bn** respectively, in present values (see **annex 6**).

5.15. The advantage of SDLT assignment is that neither property buyers nor sellers in the zone of influence are affected at all. Buyers pay SDLT on purchase values in the normal way. The only change that occurs is behind the scenes within the public sector, between HM Treasury and TfL. Its principal disadvantage is that SDLT assignment on average can be expected to extract only modest proportions of the transport premium, and it would not capture any of the value uplift on rented premises.

[25] As a standalone measure revenue would be higher, due to accounting for feedback effects in the package.

Box 5: How a zonal SDLT assignment mechanism could work in practice

A base year is selected. The baseline average transaction value is computed by dividing the total transaction values in a zone by the number of base year transactions. The indices for London-wide average transaction value and volumes are set at 100 based on their base year values. An average SDLT tax rate is computed by dividing London-wide SDLT receipts in the base year (and any future year) by the total transaction values in that year.

For each future year of the assignment scheme, a control SDLT value is calculated by:

- Indexing the base average transaction value for growth in the London-wide average transaction value index
- Indexing the base year transactions for growth in the London-wide transaction volumes index
- Calculating an average SDLT tax rate for the year in question (if there has been a change in SDLT tax rates)

The product of these three values is the control SDLT value. This is then compared with the actual SDLT receipts, and the difference in values (if positive) is assigned to the project as a grant payment for the year.

For instance, assume that for Crossrail 2, an SDLT assignment mechanism is put in place from 2021. Consider a station such as Dalston. A zone of influence could be designated (say 1.5km) around the proposed Dalston station. Assume that in the base year (2020), there were 1,000 transactions in the zone with a total value of £300m, giving a base average transaction value of £300,000. Assume that this produces a zonal SDLT stream of £9m and therefore the average SDLT tax rate is three per cent. Further assume that transaction value growth in the London-wide control area runs at two per cent per annum, while zonal transaction values in Dalston grow at five per cent per annum. Let the number of SDLT transactions in the control area (London-wide) grow at 10 per cent per annum while they grow at 15 per cent per annum in the Dalston zone. For simplicity, assume the average SDLT tax rate remains constant.

In Year 1 of the scheme, the number of control transactions would grow to 1,100. The control average transaction value would be £306,000. With the average SDLT tax rate at three per cent, this would produce a control SDLT value of circa £10m. But since zonal value growth has run at five per cent and zonal transaction volumes have grown at 15 per cent, the actual zonal SDLT receipts would be circa £10.8m. The difference – roughly £800,000 – would be assigned as grant payment for the year to the project. A similar calculation could be carried out for each station along the Crossrail 2 route to compute an aggregate SDLT assignment payment for the year.

The retention of revaluation growth in business rates similarly offers a simple method of capturing land value uplifts from occupiers of commercial premises

5.16. The marginal tax rate for business rates is already quite high (circa 50 per cent of rental values). Retaining revaluation growth therefore offers a simple and highly effective method of

capturing value uplift on commercial premises for transport projects. The only changes necessary would be regular revaluations, and the ability to retain revaluation growth that is due to increases in rateable values in transport zones of influence.

5.17. In general, retaining revaluation growth from business rates runs contrary to the existing direction of travel in the Department for Communities and Local Government's (DCLG's) consultation on the devolution of business rates. DCLG proposes that revaluation growth continues to be neutralised at the national level (so that, on the average, business rates yield is unaffected (in real terms) by the revaluation of the tax base).

5.18. Further, the proceeds from above-average revaluation growth in London are currently used to reduce business rates in non-London locations across the country, and the DCLG consultation envisages that this equalisation process will continue under the new system.

5.19. From the point of view of funding transport schemes, there is already a rates retention device available in the form of Enterprise Zones.[26] EZs are allowed to retain the full amount of incremental business rates above a baseline agreed with Government. The rates income is affected by changes to the national multiplier or poundage, but revaluation growth above the national average is retained and captured. A simple enhancement to this feature for EZs would be to enable regular revaluations of the tax base in line with the national system, but to allow the original poundage to apply throughout the period of the EZ, and not be adjusted downward with each revaluation. The system is being designed in any event with the ability to handle different charging authorities applying different rates, so this should not be a difficult task. Zonal retention of revaluation growth could then be secured simply by creating an EZ across the defined zones of influence of a transport project.

5.20. However, there is a key interaction here with the broader proposals for devolution of business rates. If Government agrees with full retention of revaluation proceeds within London (and a separate London poundage delinked from the national rate), then the proposal above would be redundant as full zonal retention of revaluation growth could be easily instituted within a devolved London system.

5.21. Our modelling indicates that the full retention of revaluation growth from business rates could potentially raise an additional **£6.7bn** in funding resources across our sample schemes, relative to their net present cost of circa **£36bn**. The majority of this funding would arise for projects such as Crossrail 2 (circa **£4.8bn**) and Old Oak Common (circa **£1.6bn**), which are expected to affect significant amounts of new and existing commercial property (see **annex 6**).

A further improvement in land value capture could come from Council Tax reform, but council taxation is not in general a suitable instrument for land value capture

5.22. If council taxes were based on regular revaluations, this would achieve at least a partial linkage to value (although banding tends to dampen the link quite strongly, since properties only pay more if they move from one band to a higher band).

5.23. A reform of council taxes to align them with business rates (so they are based on pence in the pound of estimated rental values) would create the clearest value linkage. This would also be

[26] There are also special arrangements for rates retention in certain areas such as Brent Cross and Croydon.

consistent with the recommendations of the Mirrlees Review, ie to reform Council Tax into a tax on housing services.

5.24. Once council taxes were clearly value linked (and based on regular property valuations), it would be possible to implement land value capture mechanisms within zones where transport investment takes place, by retaining the zonal revaluation growth (again, relative to a control for background property price inflation) from these taxes and recycling it to fund the projects that caused it.

5.25. However, the average Council Tax rate (even with regular property revaluations) is on average only six to seven per cent of imputed average rental values (in contrast to commercial premises, where it is about 50 per cent). It is not realistic to expect the general Council Tax rates to be raised to levels (for example 25-30 per cent) appropriate for extracting windfall property value uplifts in specific zones. Council Tax reform on its own therefore will likely deliver only modest land value capture.

5.26. A second challenge is that it will be extremely difficult to guarantee that revaluation growth in Council Tax receipts can be retained. If general house price inflation exceeds wage growth, local politicians will come under intense political pressure to neutralise revaluation growth. Moreover, council taxes are set based on the Council Tax requirement, rather than the need to capture value uplifts, and the Council Tax requirement will not in general be correlated with property values. A further complication is added by the fact that different boroughs in London have different Council Tax rates, so ensuring that revaluation growth is retained (and not neutralised) across different local authorities will become a challenging coordination exercise.

5.27. For these reasons, an effective land value capture approach for residential properties (even with regular revaluations) will likely have to take the form of a system of supplemental charges that can be levied on a zonal basis (to capture localised value uplifts). This would produce a clear, separable revenue stream that can be hypothecated to fund designated transport schemes.

Zonal value capture charges on residential property would complete the ability of the property tax system to substantively extract the transport premium

5.28. Business rates revaluation retention is sufficient to ensure effective value capture on commercial premises. But for residential premises, SDLT assignment will on average extract circa three per cent of the transport premium from property prices, but will not cover uplift on rented premises. Council taxes would cover both owner-occupied as well as rented premises, but in themselves are unlikely to be good value capture instruments for the reasons set out above.

5.29. A system of zonal charges on residential property would fill the gap on the residential side, and complete the ability of the property tax system to substantively and efficiently extract the transport premium from both residential and commercial premises.

5.30. There are three important design principles that zonal supplemental charges should aim to satisfy:

- They must be seen as fair and proportionate to the windfall gains realised by landowners
- They must be affordable for those that have to pay them

- They should not (as far as possible) distort decisions (such as between buying or renting) in the housing market, or discourage the supply of land for new development

5.31. We describe here the design of a system of 'transport premium charges' that could satisfy these three criteria.

5.32. The key features of a transport premium charge should be that it:

- Applies in defined zones of influence around new or significantly upgraded transport facilities (such as Tube stations)

- Be based on regular transparent market-based measurement of the premium paid to landowners by new purchasers or renters of residential property for access to transport within such zones of influence

- Be proportionate to the measured premium paid for access to transport in each location

- Be designed so that:

    - New purchasers and tenants can be given a free choice to opt in to paying the charge through their decision to locate within the zones of influence, and can be given the opportunity to pay the same overall premium for access to transport with the charge that they would have been freely willing to pay without it

    - Existing residents can be entirely exempted from paying the charge

5.33. The zone of influence (the 'charging zone') around a Tube station should be based on an evidence-based criterion of reasonable accessibility – this could be a simple distance metric (for example 1.5km radius) or an isochrone (for example, all points within a 15 minute accessibility from station, either by walking or by bus). Boundary effects (the risk that properties just outside the zone boundary experience similar value uplifts to those just inside) would need to be accommodated by setting appropriate threshold values below which no uplifts would be charged.

5.34. The zone could be subdivided into three concentric bands, again defined either by a distance metric (for example properties within 0-500 metres, 500 metres to one kilometre, 1-1.5km), or by isochrones (for example properties within a five minute, 10 minute or 15 minute walk) – charging zones A, B and C (see **figure 7**).

5.35. A regular assessment of the transport premium would be carried out for the duration of the scheme (for example on an annual basis). This assessment would be made as follows:

- A property price per square metre (base property value) would be calculated for the entire charging zone in the year prior to the introduction of the charging scheme (for example, by using evidence from the property market such as transactions data from Land Registry)

- A control area would be selected. For instance, this could be the London-wide property market or a local borough-based control area. A base average property value per square metre would be calculated for the control area in the year prior to the introduction of the charging scheme, and set as the base control value (using evidence from the property market)

- During the charging period, the average property value per square metre in the control area would be updated to the current control value, using evidence from the property market

- The average property value per square metre (current property value) would be calculated for each distance band or isochrones within the charging zone, using evidence from the property market

5.36. The transport premium (per square metre) would be calculated as follows:

$$\textbf{Transport premium} = \textbf{Current property value} - \textbf{Base property value} \times \left(\frac{\textbf{Current control value}}{\textbf{Base control value}}\right)$$

5.37. The measured transport premium in each location would serve as the tax base for charging purposes. A tax rate could be applied to this base, at levels commensurate with the current capital gains framework (for example, the maximum rate of Capital Gains Tax is currently 28 per cent).

5.38. If the charges were applied on the sale or purchase of properties, the charge for any property bought or sold within the charging zone in a given year could then be computed as follows:

$$\textbf{Transport premium charge} = \textbf{Transport premium} \times \textbf{Floor space} \times \textbf{Tax rate}$$

5.39. Tenants renting property in the private rented sector would be paying the transport premium on an annual basis. Accordingly, an annual charge could also be levied in such cases as follows:

$$\textbf{Annual premium charge} = \textbf{Transport premium} \times \textbf{Floor space} \times \textbf{Average rental yield} \times \textbf{Tax rate}$$

5.40. The average rental yield could be set at the latest reported average rental yield for London – this is currently approximately four per cent.

5.41. Social or affordable housing could be wholly or partially exempt.

5.42. Transport premium charges in any given year would be based on the transport premium assessment carried out in the previous year. At the end of each year, the charging authority could publish the level of charges for the forthcoming year, for both sales as well as rentals.

5.43. At each sale, the base property values and base control values could be reset accordingly for a given property.

5.44. Such a system of transport premium charges would be entirely fair and proportionate to the observed transport premia reflected in property prices. It could be made entirely affordable, since the charges could be made to apply only at or from the point at which these transport premia are monetised.

5.45. Since the charge is based on market-based measurements of the transport premia and the tax rate is set at relatively low, it should have little effect on any relative prices in the property market, and any individual sale, purchase or rental decisions. Its principal effect should be to slightly reduce the effective premia paid by purchasers or renters to incumbent landowners for access to transport, with a portion of the premium that would otherwise have been paid flowing to the transport network instead, which generated the premia in the first place.

5.46. There are a number of detailed options in terms of how the charge is designed, such as:

- Who is formally liable to pay it: the buy side of the market (property purchasers and tenants), or the sell side of the market (property sellers and landlords)

- Exemptions: should the charge only apply to new developments, or also to existing property owners? Should social and affordable housing be entirely exempt?

- The timing and frequency of payment: should it be a capital charge on sale, and an annual charge on rentals, or simply a universal annual charge on occupation?

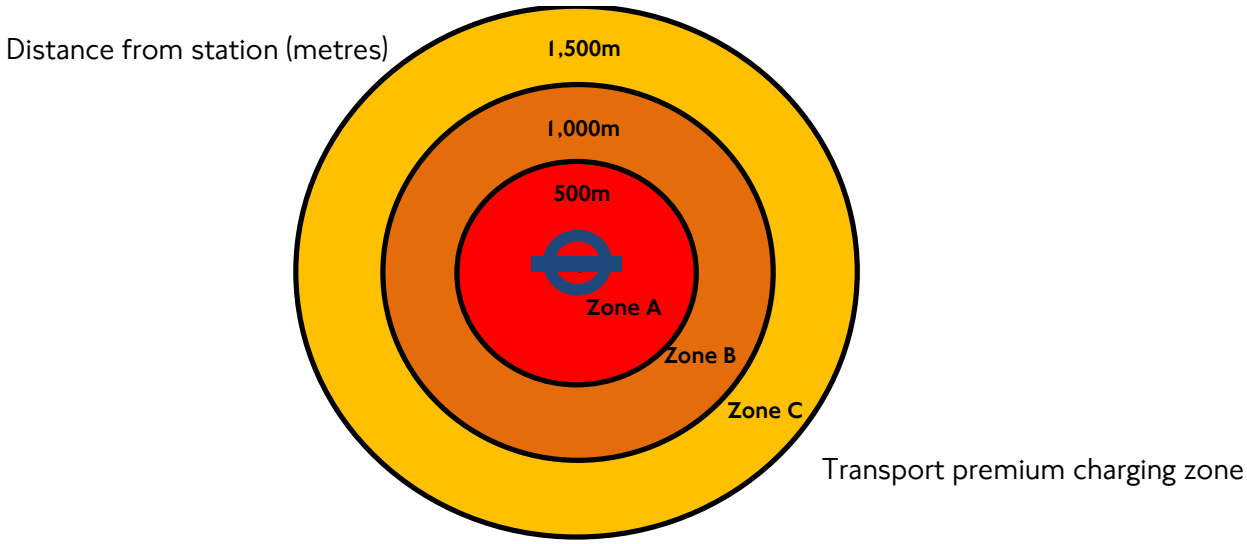
- How it is collected and enforced: a charge on occupation could be accommodated within the Council Tax system, while a charge on property purchasers could be accommodated within the SDLT system. Other options (such as direct charges on landlords and/or property sellers) will require new collection and enforcement mechanisms

- When it first becomes payable: from the start of construction, or only on service commencement?

- The duration of charges: should they be time-bound, or continue as long as the transport benefit is provided and the transport premium persists?

5.47. These are all essentially choices that reflect a trade-off between the relative complexity or simplicity of the mechanism, its accuracy and its perceived fairness.

Figure 7 – A zonal supplemental charge



5.48. **Box 6** explains (using a worked example) how such a transport premium charge might operate in practice.

Stakeholder acceptability

5.49. From a presentational perspective, it is likely to be more acceptable if the design for transport premium charges locates the incidence on those who benefit directly from the transport premia generated by transport projects – ie property owners, whether they are landlords or owner-occupiers. At the same time, it is likely to be more acceptable if the timing of payment is aligned with when the beneficiaries monetise this windfall gain, through sale or rental of property. Both

these considerations argue in favour of locating the liability to pay on property sellers and landlords, at the time of sale for the former, and on a monthly or annual basis for the latter.

5.50. The principal challenge with placing the liability in this way is that incumbent property owners could well view it as a kind of Capital Gains Tax on the main residence. This could increase stakeholder resistance to projects, especially if these are the same groups who are negatively affected by the noise and other environmental impacts of the construction of major transport schemes. A second drawback is that a new collection and enforcement system would need to be devised for this purpose.

5.51. The alternative is to levy the charge on tenants and property purchasers, and rely on them to 'price in' the charge into the values that they are willingly prepared to pay for renting or buying property in the area. This would still locate the charge (in terms of eventual incidence) on the property owners/landlords, but indirectly. This may help to reduce stakeholder resistance to it significantly.

5.52. Tenants and property purchasers would be given a free choice on whether or not to pay the charge (based on their decision on whether or not to locate in the area in the knowledge of the charge). They would also be afforded a free opportunity to price the charge into the premium they are willing to pay for access to transport within the zones of influence. So the overall effect of placing the liability in this way should be that they pay no more in overall transport premia with the new charge than they would have been freely willing to pay without it. The only change would be that a portion of the premium they were willing to pay would now be routed to the transport network, with the remainder continuing to flow as a windfall gain to the incumbent property seller or landlord.

5.53. However, placing the liability on tenants or property purchasers is less intuitive (given the eventual windfall gains accrue to landlords and property sellers). People may perceive the charge as making property in the area more expensive to rent or buy, even if in the counterfactual without it, they would have been willing to pay higher rents or property purchase prices. It would therefore be very important to first, explain the logic of such an arrangement to the public in an extensive consultation phase, and second, establish a very transparent demonstration (based on market data) of the premium that purchasers and tenants are *freely willing* to pay for access to new transport as the *basis* for charging.

Box 6: How a transport premium charge might work in practice

Consider a station such as Tottenham Hale (in the London Borough of Haringey) on the Crossrail 2 route. A 1.5km charging zone is established around the station, with residential properties divided into three concentric rings: Properties within 500 metres of the station, properties between 500 metres and one kilometre, and properties that are 1-1.5km away.

Assume that the base property value (per square metre) in Tottenham Hale is currently circa £3,500. For simplicity, assume that the base control value is the same. Further assume that background property value growth runs at two per cent per annum, while value growth in the innermost ring runs at 10 per cent per annum, followed by five per cent per annum in the middle ring, and 2.5 per cent per annum in the outer ring. Assume the rental yield is four per cent, and that no uplift is anticipated during construction, so that all the value growth above the background occurs only in the year following service commencement. Assume the construction period is 10 years.

In the first year of service commencement, the current property value will be £4,700 in the inner ring, £4,480 in the middle ring, and £4,370 in the outer ring. Meanwhile, the current control value will be £4,270. Therefore, the transport premium for the first year of service commencement will be £430 for the inner ring, £210 for the middle ring and £100 for the outer ring.

Based on this, the owner of an average 100 square metre property in the inner, middle and outer charging rings would expect to realise transport-related windfall gains on sale of £43,000, £21,000 and £10,000 respectively. Similarly, landlords renting out this average-sized property in these rings would be expected to realise an average windfall increase in rental values of £1,720, £840 and £400 per annum.

With an effective tax rate of 30 per cent, the transport premium charge would therefore amount to circa £12,900, £6,300 and £3,000 as a capital charge on sale or purchase, and £515, £250 and £120 as an annual charge for rentals. At a lower tax rate of (say) 15 per cent, the charges would be correspondingly lower at £6,450, £3,150 and £1,500 as a charge on sale or purchase, and £260, £125 and £60 as an annual charge on rental values.

Legislative changes required

5.54. There are no existing powers to apply a transport premium charge of the sort described above. Such powers (for the Mayor or TfL) would need to be enacted through primary legislation, for example by amendment to the GLA Act 1999.

Value capture potential

5.55. Our modelling shows that a transport premium charge could raise very significant revenues for transport investment. Across our sample of TfL projects, modelling suggests that a zonal charge that captures 30 per cent of the value uplift on all residential properties within the zone of influence could potentially raise between **£13bn-£28bn** in present value terms (compared with a net present project capital cost of circa **£36bn**), as part of a package of reforms. For major schemes such as Crossrail 2 or the BLE, modelling indicates the transport premium charge, in a base case scenario, could potentially raise up to **£8bn** and circa **£4bn** respectively.

Objections to the transport premium charge

5.56. The first objection to a transport premium charge is that it could require a new collection and enforcement mechanism, if the locus of liability is the property owner rather than occupier. A database of property owners will be required for each charging zone, and this will have to be updated with each change in ownership over time. Unpaid charges will need to be followed up and enforced as debts. This is likely to incur costs, although these should be modest in proportion to the potential sums that can be raised. In particular, if unpaid charges are attached as debts to property, then it would be possible to rely on the conveyancing process to ensure that the charges were properly paid.

5.57. This would not be a problem if the liability to pay is placed on tenants or property purchasers, since there are existing administration systems (such as Council Tax and Stamp Duty) that could be used for this purpose.

5.58. A second objection to the charge could be its relative complexity, compared to simpler mechanisms such as a supplement to the Council Tax or the SDLT.

5.59. For instance, to calculate the transport premium charge described above, the charging authority needs to know four things about an individual property to determine the charge payable:

- Whether it is rented, or owner-occupied
- When it is sold
- Whether it is in one of (say) three charging bands from the train or Tube station
- The gross internal floor area of the property

5.60. This is undoubtedly more complex than (say) a simple supplement on Stamp Duty or Council Tax. However, it is considerably better targeted and proportionate to the actual value uplift (and hence more efficient) than these simpler but more generic mechanisms could be.

5.61. Further, the information required to levy such charges should not be difficult to assemble. It is relatively straightforward to assess the internal floor area of properties within the charging zone. Similarly, building a database of which properties are in the two or three betterment charging bands is not a difficult task, given the geospatial mapping tools available today. Possibly the most challenging administrative feature of this charge is the need to keep track of changing ownership of properties, and whether they are rented or owner-occupied. But again, this should be possible to achieve through an annual listing of sale transactions from Land Registry (which tracks ownership) combined with the Council Tax database (which tracks occupation). The technical challenge involved in writing some software that – given the postcode of a property – produces a number for the charge payable by it, should not therefore prove insurmountable.

5.62. A third objection may come from charge payers who object that *actual* transaction values (whether sales or rentals) could be different from the average values assessed using the market measurement method described above. The proposal above is to use averages within each charging band (rather than individual property valuations) to determine the charge payable. The logic of taking an average is to remove the effect of individual property characteristics on transaction values. The average transaction values per unit area relative to the controls are a much better measure of the transport premium than the individual transaction value per unit area, since the latter may be distorted by individual property characteristics.

5.63. A final objection to such a charge is the need for primary legislation. However, the scale of potential funding that could be raised from it suggests the proposal is worthy of serious consideration and might merit the effort involved in securing the enabling legislative change.

Interaction with other instruments

5.64. The introduction of a transport premium charge is likely to reduce zonal SDLT receipts. For the purposes of this study, we have assumed that SDLT receipts will reduce in proportion to the rate at which the transport premium charge is levied. Since our modelling of the charge assumes a tax rate of 30 per cent, we have assumed that zonal value growth in SDLT revenues (which the SDLT assignment mechanism is designed to capture) will also reduce by a similar 30 per cent. This is admittedly a relatively crude calculation, and further work should examine the interaction effects in more detail and with more sophistication.

Next steps

5.65. To improve the extraction of user benefits resulting from transport investment:

One The Government should explore with the Mayor a framework for assigning zonal value growth in Stamp Duty Land Tax receipts relative to a London-wide or local control, either as part of a wider devolution of SDLT receipts, or through a zonal SDLT assignment scheme.

Two As part of business rates reform, the Government should consider regular revaluations and full zonal retention of revaluation growth from business rates, either as part of the wider devolution settlement for London or through an enhanced Enterprise Zones (EZ) policy.

Three The feasibility, effectiveness and acceptability of creating a new land value capture charge should be explored further, such as a transport premium charge as discussed above. Such a charge could capture a proportion of the premium paid to landowners by new purchasers or tenants of residential property for access to new transport facilities. This would create a mechanism to capture transport-induced value uplift that cannot currently be captured within the existing property tax system, and has the potential to be very effective in funding new infrastructure (particularly schemes that could expand the supply of housing). The introduction of such a charge is likely to be difficult, and we therefore suggest the Government works with the Mayor and ourselves to consider producing a paper for wide consultation.

This study suggests the key principles of such a charge should be that it:

- Applies in defined zones of influence around new or significantly upgraded transport facilities (such as Tube stations)
- Be based on regular transparent market-based measurement of the premium freely and willingly paid to landowners by new purchasers or renters of residential property for access to transport within such zones of influence
- Be proportionate to the measured premium paid for access to transport in each location
- Be designed so that
    - New purchasers and tenants can be given a free choice to opt in to paying the charge through their decision to locate within the zones of influence, and can be given the

opportunity to pay the same overall premium for access to transport with the charge that they would have been freely willing to pay without it

- Existing residents can be entirely exempted from paying the charge

The consultation paper should set out the overall objective of land value capture, describe the need for and the basic principles of the new charge and set out the advantages and disadvantages of various design options, as discussed in the main report.

6. How can we improve the value capture from new development?

6.1. In **section 4**, we noted the limitations of development taxation as a method to extract the planning gain from new developments enabled by transport projects.

- There is an inherent trade-off between flexibility, administrative cost and yield. The most flexible instruments (like section 106 payments) are better at capturing value, but require bespoke negotiations and are administratively burdensome. The least flexible (such as CIL) are administratively simple, but cannot easily be tailored to the specifics of individual developments,[27] and are normally set at a level that ensures that most development in the area stays viable (a 'lowest common denominator' approach)

- Currently, the process for updating CIL charging schedules is time consuming. It is difficult to keep charges in line with fast moving property markets and to anticipate value uplifts produced by new transport schemes. As a result, CILs do not presently yield large sums in relation to the planning gain. The Mayoral CIL appears to strike a kind of interim balance. It is non-negotiable and initially low, cheap and quick to administer but still yields a significant sum across all of London when the development market is healthy

- Bespoke negotiations are possible (and yield higher proportions of the planning gain) when there are developments that are clearly 'dependent' on the transport project, and it is credible that the project would not proceed without a very significant contribution from those developments. Both the Northern line extension and the Barking Riverside extension are good past examples of this, and among our sample future schemes, the DLR extension to Thamesmead (which will mainly serve land owned by the Peabody Group) may also fit this pattern

6.2. The major gap is in the context of major transport schemes that serve multiple locations, and induce a large variety of new developments along their route, but don't have a clear 'anchor' developer. The JLE and Crossrail are past example of such schemes, and among our sample schemes, both Crossrail 2 and the BLE appear to fit this pattern. Here, it is more difficult to conduct bespoke negotiations with the numerous developers and landowners involved, nor is it credible to maintain that the project could not proceed without a large contribution from any individual developer. Unsurprisingly, such major projects (where the aggregate value uplifts from new development are actually quite large) struggle to attract large sums by way of developer contributions.[28]

6.3. Such 'high development zones' (particularly for housing) also tend to be the sort of locations where coordinated planning and consenting of the real estate alongside the transport can produce much better outcomes than fragmented private sector development responding over time to opportunities created by the new transport link. This kind of proactive approach – common in

[27] CIL rates can be varied by geographical area or land use, but cannot be set to reflect the value potential of specific development sites.

[28] The Crossrail Supplementary Planning Guidance (SPG) charge is a way of capturing additional developer contributions from commercial property along the line of route but it produces relatively modest sums. It also does not target residential development.

places like Hong Kong – has not historically been the approach adopted in London. But it is becoming more common with the deployment of Mayoral Development Corporations (MDCs) in areas such as Stratford and Old Oak Common; an increasing emphasis on zonal development plans around high potential corridors such as Old Kent Road; and an increasing emphasis on maximising regeneration opportunities from schemes such as Crossrail 2.

6.4. With that context in mind, we consider three avenues of reform:

- Higher or better development taxation
- Improved or enhanced direct development by transport authorities
- A combined approach called the 'development rights auction model'

Higher or better development taxation

Zonal Community Infrastructure Levy

6.5. In the zone surrounding a new transport initiative, a high CIL rate (much higher than the sum of existing borough or Mayoral CIL) could be applied to anticipate increased viability for new development induced by the improved accessibility. This could be a variation of the Mayoral CIL rate on a zonal basis (with the borough CIL rate turned to zero by agreement with the local authority). It might also be possible to use a Mayoral Development Corporation to act as a CIL setting authority in the new zones.

6.6. Such a measure would be simple to implement and easy to understand. A charging authority has to balance the desirability of funding infrastructure from CIL against the effect that the proposed CIL would have on the economic viability of development.[29] Setting this balance is largely at the discretion of the charging authority and needs to be justified at an examination in public.

6.7. Present policy indicates that charge rates should be set by reference to the viability of development. This was designed to avoid, as far as possible, any conflict with State aid requirements. In fact, the regulations allow differentiation by zone, intended use, area of development or number of homes.[30] It would be possible, in law, to set charges in ways that better reflected the value uplift associated with transport investment if the differences in rates in different areas or for different intended uses could be objectively justified.

6.8. Differentiation could be done on a zonal basis to take into account the expected effects of the transport scheme on development densities and land values. However, developers will almost certainly complain of viability issues (particularly in the current environment where affordable housing requirements are being strengthened at the same time). And even if the examiner can be persuaded that the high CIL rates will be offset by higher land values created by the transport scheme, developers are likely to apply for exemptions on viability grounds.

6.9. The CIL regulations allow for relief in exceptional circumstances to be given to chargeable developments if they can prove that the published CIL rates will render their development

[29] CIL Regulation 14(1).
[30] CIL Regulation 13(1).

unviable.[31] In such circumstances, the charging authority has an absolute discretion about whether it accepts an application for exceptional circumstances relief. The authority could hold its ground and refuse to provide exemptions or reliefs, but the developers may simply hold back from development.

6.10. The problem here is twofold. First, there is an information asymmetry between the charging authority and the developer. The authority does not have information on the true costs and profitability of the development in question. Second, the developer can simply choose to delay development until either the authority relents and reduces the charge, or until sales prices rise enough to offset the higher CIL charge being demanded. There is nothing the charging authority can do to avoid this 'holdout' problem.

6.11. A zonal CIL, more closely referenced to future viability and land value uplifts, is feasible within the existing CIL regulations. However, much higher zonal CIL rates are unlikely to be effective on their own, without some solution to the information asymmetry and holdout problems.

Zonal planning gain supplement

6.12. A shortcoming of the design of the CIL is that it is based on the area of development rather than value, even though CIL rates can be varied for different zones and uses, as rough proxies for value. Even so, within a CIL charge category, the levy is regressive – more profitable developments pay a lower proportion of their profits (per unit area) compared to less profitable ones. Since CIL rates are also normally set keeping the least profitable developments in mind, there is an in-built bias towards low rates of value capture. Finally, CIL rates cannot at the moment be changed quickly to reflect increased development values and viability – revision of CIL rates requires a rerun of public consultation and a public examination. In the meantime, speculative anticipation of land value uplifts can cause land values to rise quickly so that much of the value uplift leaks away.

6.13. These shortcomings could be addressed by replacing the CIL with a value-linked charge. For instance, a levy could be based on the difference between the consented and existing land-use value for new developments in zones surrounding new transport projects. This was the proposed design of the Planning Gain Supplement (PGS), the principal alternative approach to development taxation at the time the CIL was introduced.

6.14. Historically, this version of development taxation (PGS) has not found favour with the developer community. Their principal objections to it have been: scepticism that the money will be used to fund productive infrastructure; fear that the tax rate would be set too high; concern that valuations of the tax base may be subjective, arbitrary and prone to error; and alarm that administration of such a levy could be complex and time-consuming.

6.15. Many of these objections can be overcome – a new zonal PGS could be clearly hypothecated to funding transport schemes (like the MCIL); the tax rate could be set at a relatively low level (for example 20-30 per cent) and administration could be made relatively efficient by standardising the derivation of residual land values from the development permitted by new consents, so the levy is easy to compute and predictable (like the current CIL). This would sacrifice some scope for value capture, in the interests of simplicity and viability.

[31] CIL Regulation 55. At present the Mayor has chosen not to make relief for exceptional circumstances available. Note that it is presently a precondition of an application for relief that there is a section 106 of the Town and Country Planning Act (TCPA) agreement relating to the development. Most medium and large-scale developments will satisfy this requirement but it would be worth exploring the justification for the qualification.

6.16. In principle, such a streamlined approach could make the PGS as simple or simpler than the CIL. But two problems would remain. First, a formulaic approach (like the CIL) cannot account for site specifics – for instance, a brownfield site may have to spend a lot of money on land remediation, and arguably such site specifics ought to be taken into account in the valuation of land with new planning consents. But allowing the principle of site specifics opens the door for every landowner/developer to negotiate the amount of the levy, which may reduce the levy to a series of bespoke negotiations over site specific features, not very different from section 106 negotiations. And if site specifics are ignored, there is a risk that a PGS could make many developments unviable. The fundamental problem of information asymmetry remains unsolved.

6.17. Second, as with the high zonal CIL charge, there also remains a holdout problem. Developers faced with a new charge that produces a higher burden than the existing CIL rate may choose simply to delay development. Given the history of the PGS, there is a particular risk that developers may wait to see if such a new charge would actually survive a change of Government.

Improved or enhanced direct development ('rail plus property')

6.18. The global leader in transit-led direct development is probably the Mass Transit Railway Corporation in Hong Kong. It is a famous example of successful, direct land value capture – so successful that the MTR not only requires no grants from its host Government, but actually returns a healthy dividend to it each year.

6.19. The MTR has built a substantial portfolio of valuable properties around Hong Kong, with profits from development over time used to fund new transport investment. This so-called 'rail plus property' model has enabled the MTR to fund its capital expenditure entirely from internal cash generation. However, this kind of direct land value capture is a long-term investment – the profits from land and property development have built up over a few decades, starting from a low base.

6.20. There are two factors that drive the MTR's ability to realise significant revenue from real estate development associated with its transport investments:

- First, the Hong Kong Special Administrative Region (SAR) Government gives the MTR exclusive rights over new development in defined catchment areas along the route of new transport schemes. It is able to do this because the Government already owns the land, which it leases to the MTR at pre-scheme existing use values. The MTR then retains all the uplift in land value from rezoning and new development, when it sells development rights at post-scheme values to private developers (see **figure 8**)

- Second, the MTR works with the Government's planners to maximise value creation from transport and related real estate development by planning the two together from inception. The Government has a financial interest in getting this right, as it is a majority shareholder and benefits from dividends. This in part incentivises a planning framework that encourages high density (and high value) development around the MTR's transit hubs

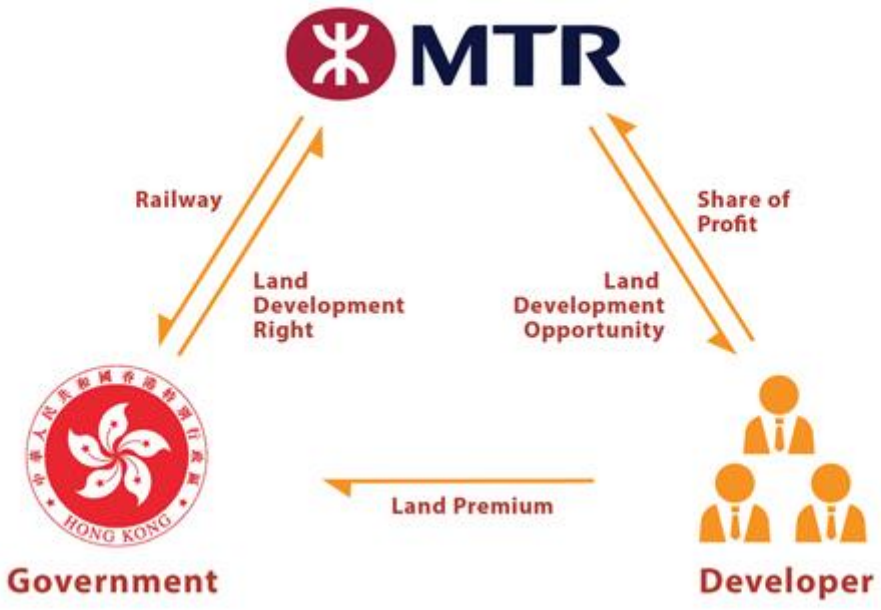
6.21. These two factors are not easy to replicate in the UK:

- The Government (or the public sector more broadly) in the UK does not own all the land in the zones of influence surrounding transport schemes

- Maximisation of land value creation has historically not been a priority for city or transport planners. Planning is devolved to local authorities, which react to planning applications from

the private sector and do not, in general, wish to have planning decisions influenced by financial considerations

Figure 8 - Hong Kong MTR (Mass Transit Railway) rail plus property model



Source: MTR website

6.22. These problems are not insurmountable. Transport authorities in the UK (just as in Hong Kong) can capture value uplift from new development around new transport schemes by developing the land themselves. We already do this in a limited way on our own land and by way of 'over station development'. It could go further.

6.23. Like the MTR, we could seek to develop land surrounding new transport links. This would include surrounding land across the zone of influence, where changes in use or densities are catalysed by the transport investment, in addition to land used directly for the new transport link (exploiting air rights above stations, for instance).

6.24. This land could be acquired through voluntary or compulsory means. We have investigated two voluntary land acquisition models in this study:

- Strategic land acquisition for development by transport authorities on open market terms
- Land pooling arrangements across public and private landowners

Strategic land acquisition

6.25. Strategic land acquisition involves authorities buying land (or options on land) in the pre-planning stages of a transport scheme, along the intended route and on open market terms. If the scheme is funded and announced, land values will go up and the authority can profit by selling the land in the construction phase, potentially with new development consents enabled by the transport scheme. This profit could directly be channelled into funding the construction phase of the project, reducing the borrowing requirement.

6.26. This approach has the considerable benefit of simplicity, and it requires no regulatory changes. However, authorities would need to finance strategic land acquisition, fund interest costs

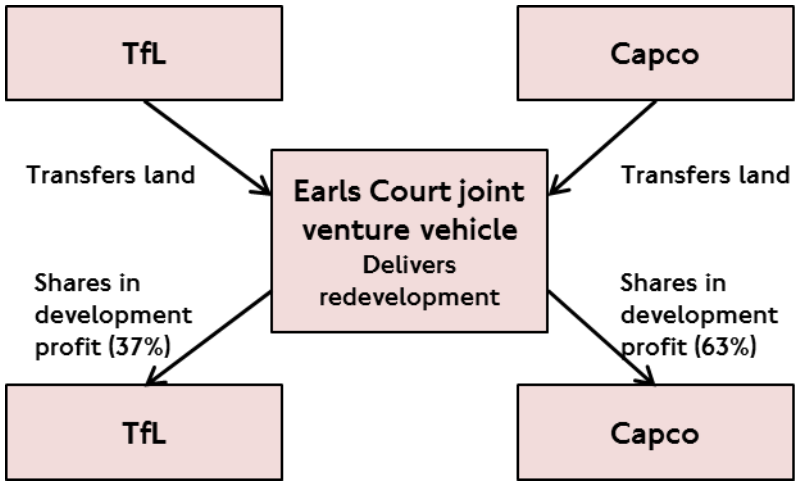
and overcome other Prudential Code considerations; they would need to take the risk that the scheme does not proceed and land values do not rise; and it is highly likely that such strategic acquisition by a public authority on any scale would soon be anticipated by speculators in the land market, driving up prices as soon as it was observed that the authority was starting to buy up parcels of land in an area.

Land pooling

6.27. Land pooling is an approach that involves the voluntary pooling (via commercially negotiated joint venture arrangements) of non-operational public sector land with private sector land, in the hope of creating marriage value through larger and more integrated sites for development.

6.28. The Earls Court redevelopment is one example of this approach. This deal involves the delivery of 7,500 new homes as well as the development of a new primary school, a new leisure centre, new health facilities and community spaces. We are the freehold owner of the exhibition centres, while Capital & Counties Properties Limited (Capco) is the owner of the leasehold interest, as well as the owner of other adjacent land interests (including the Northern Access road) which will be contributed to the joint venture. We own 37 per cent of the shares, while Capco owns the residual 63 per cent. The shareholding reflects the property interests contributed by each of the shareholders, but with the marriage value of pooling embedded in the valuation. Capco has been appointed as the delivery manager responsible for delivering the masterplan for the integrated site. Over time, we hope to realise profits from our share of the joint venture (see **figure 9**).

Figure 9 – Earls Court joint venture structure



Source: TfL

6.29. There may be other opportunities for such land pooling arrangements, particularly connected to over-station and around-station developments. However, our direct ownership of land is likely to be a small fraction of the developable land in most situations (unlike the Earls Court case), so other non-operational public sector land and private sector land would need to be brought into the pool to capture marriage value. But although there is a significant amount of public sector land adjacent to many transport hubs, the proportion of it that is non-operational and therefore suitable for land pooling is likely to be quite low. Equally, unless there is clear and significant marriage value from pooling (as there was in pooling the freehold and leasehold interests for Earls Court), voluntary participation from private sector landowners is also likely to be quite low. Deals like Earls Court are therefore more likely to be happenstance than habit.

Compulsory land acquisition

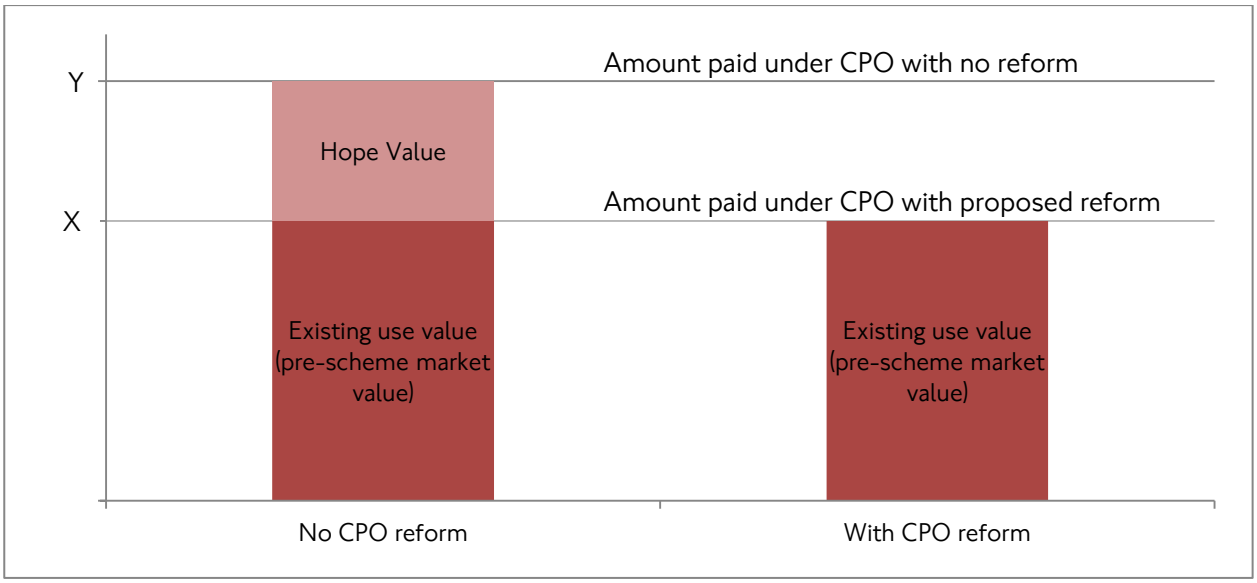
6.30. Compulsory land acquisition offers a third possibility for land assembly, so long as it is in the public interest and the last resort. Proposed reforms, as set out in the Neighbourhood Planning Bill (introduced in the House of Commons for the First Reading on 7 September 2016), should make compulsory acquisition easier and fairer, and improve the ability to capture land value uplift.

6.31. The bill seeks to enable the GLA and TfL to make joint CPO applications where there is a strong regeneration case. In principle, this may allow compulsory acquisition of land for wider development (beyond transport) across a project's zone of influence, at least in certain regeneration contexts.

6.32. A second reform proposed in the Neighbourhood Planning Bill is equally significant. A key feature of the MTR model is the ability to acquire land at the pre-transport scheme (existing use) values. In the UK, a long-established legal principle (set out in the Land Compensation Act 1961) is that land acquired compulsorily should be acquired at market value (ie what a willing buyer would pay for the land in an open market sale), not at the existing use value. But the computation of this market value has historically been a source of considerable dispute, and land valuation tribunals have generally favoured the landowner whose land is being acquired. The 'market value' has tended to gravitate towards the post-scheme market value, negating any opportunity for land value capture.

6.33. The Government is now proposing (as part of the Neighbourhood Planning Bill) to amend the Land Compensation Act to make it clear that the 'market value' should be based on a 'no scheme principle'. In other words, no account should be taken of the effects of the proposed scheme on the value of land being acquired. In principle, this should make it possible for transport authorities to acquire land for regeneration schemes at 'no-scheme principle' market values (see **figure 10**).

Figure 10 – Market value of land with and without the proposed CPO reform



6.34. These changes would be welcome. But three challenges arise in the use of CPO powers as a mechanism for land value capture:

- Land value capture is not in itself a sufficient public interest justification for the use of CPO powers

- Even where there is a regeneration context and a credible public interest justification, private landowners can avoid compulsory acquisition by agreeing to develop their land, and keeping the planning gain for themselves (subject of course to paying any CIL or section 106 charges)

- Even where a compulsory purchase order can be secured for the wider development of a zone, the determination of the 'no scheme' principle market value is likely to be difficult. Past experience suggests the courts will continue to favour the landowner in deciding compensation.[32] In the absence of a clear set of rules on how to compute it, it is likely that this compensation will simply be based on recent market transactions in the area which may quickly adjust to reflect post-scheme market values. As a result, land acquisition is likely to remain expensive, require large compensation budgets and much of the opportunity for land value capture could be lost

6.35. Some commentators, such as the Centre for Progressive Capitalism,[33] which recently published a report on the use of land value capture to fund infrastructure in the UK, argues that the Land Compensation Act should be amended further to set compensation payments clearly at existing use value of land. It proposes taking account of any pre-existing consents for development on the land, but not of any prospective planning permissions that *might* have been obtained at some point in the future in the absence of the scheme.

6.36. Such a reform would certainly provide clarity and certainty on how compensation should be calculated on the basis of the 'no scheme' principle. But it would be unfair to landowners whose land could realistically have been developed to a more valuable use in the absence of the scheme.

6.37. We suggest an alternative approach to provide greater clarity on how to compute the market value based on the 'no scheme' principle. This would require establishing early in the land acquisition process what level of development would have been permitted by the relevant planning authority in a 'no scheme' world; and undertaking an independent valuation of the 'no scheme' value of land on the basis of this objective evidence base.

6.38. For instance, an objective assessment of alternative development potential could be secured by a modification of section 17 of the Land Compensation Act. This section enables an acquiring authority or a landowner to seek a view from the relevant planning authority on what alternative land use would have been permitted in the absence of the scheme. Section 17 does not cover alternative densities. It also comes quite late in the acquisition process (after a CPO has been granted).

6.39. Our proposal is that:

- Such a section 17 certificate should be made available early in the land acquisition process

- It should specify both alternative land use; and if the alternative use could have been residential or commercial development, the allowable densities of development in the absence of the scheme

[32] Aubrey, T. (2016) cites the case of *Rooff vs Newham Borough Council/London Development Agency*, where industrial land was being acquired for the 2012 Olympic and Paralympic Games. The landowner argued for compensation at full residential use values, whereas the council contended it should be based on industrial use values (an order of magnitude less in value terms). Although the initial tribunal decision was in favour of the council, this was overturned on appeal and the landowner awarded full compensation at residential use values.

[33] cf. Aubrey, T. (2016). *Bridging the infrastructure gap: Financing infrastructure investment to unlock housing.* Centre for Progressive Capitalism. London.

6.40. The latter reflects the likely effects of a transport scheme on land use. It can either lead to changes in land use (in which case, the 'no scheme' use would be agricultural or industrial, and land values should be simple to compute); or (more typically) they can lead to higher allowable densities of residential or commercial development (in which case, determining a 'no scheme' value would require knowledge of the alternative densities of residential or commercial development without the scheme).

6.41. Once an objective evidence base is established as above, the acquiring authority should be able to apply to an independent panel of expert valuers to calculate the 'no scheme' market value of the land. The expert panel will owe duty of care to both the acquiring authority and the landowner, which means that both parties could rely upon an impartial valuation of the land.

6.42. The timing here is important. If the 'no scheme' principle market value is known to both parties in advance of the start of the formal CPO process, there will be more incentive for the landowner to agree a sale by voluntary negotiation (at a small premium to the no-scheme value) rather than through a lengthy and expensive CPO.

6.43. That said, compulsory purchase of land is a very blunt instrument, and can have very negative impacts on landowners. While the reforms outlined above will assist in improving the process of land acquisition where it is necessary, it is unrealistic and undesirable to base land value capture on a systematic use of such powers. They are helpful to have in the background, to be used as a last resort where there is a clear public interest. But a workable method of land value capture requires the assembly of land based on choice and cooperation rather than compulsion.

A combined approach: the development rights auction model (DRAM)

6.44. So far we have discussed pure development taxation or direct development approaches. Development taxation has some clear pros and cons: it does not require the expense of land acquisition, but suffers from the two basic problems of information asymmetry and holdout. Direct development solves both problems, but at the considerable cost of land acquisition and development. Unlike taxation-based approaches, direct development methods also have the potential to *create* additional value in the land through masterplanning and placemaking, and by assembling sites to release the 'marriage value' from more coherent and integrated parcels of land. However, with the exception of a widespread (and politically untenable) use of CPO powers, it is not obvious how land can be acquired for direct development at 'no scheme' values.

6.45. We now develop a model that combines taxation and direct development approaches, and explores the middle ground between purely voluntary and purely coercive approaches to extracting planning gain. It is called the **'development rights auction model' (DRAM)**. Like development taxation, this model has the advantage of not requiring the expense of land acquisition. And like direct development, it solves the information asymmetry and holdout problems, and creates the same opportunities for value creation through placemaking and site assembly. However, the price paid to achieve this is that the authority does not seek to capture all of the value uplift; instead, it aims to leave the majority of the gain with the landowner as a major incentive to participate voluntarily.

Key design features of the DRAM

6.46. The model begins with a transit authority working with urban planners to prepare an integrated zonal development plan for zones of influence around the station locations on a new rail

project, where the potential for development is high. The zonal development plan sets desired uses and densities for developable sites across each zone to maximise land value creation from the improvement in transport accessibility (subject to minimum affordable housing requirements) and to maximise regeneration. All outline planning consents across the zone are obtained via the zonal development plan by the authority alongside the planning and consents for the transport scheme. This closely follows the MTR approach in Hong Kong. At the same time, the planning authority (either the borough or the Mayor) determines what alternative development (use and density) would be permitted on the site in the absence of the transport scheme, and calculates the market values of land across the zone based on the 'no scheme' principle.

6.47. The authority then offers three choices to landowners who wish to realise land value uplift from their land (see **figure 11**). Landowners can either:

- Join an authority-led development rights auctioning scheme, under which development rights on their land are pooled with those of other participating landowners and auctioned (say on an annual basis) as assembled packages. The auction sets a reserve price equal to the 'no scheme' market value of land. If the auctioned value is greater than this, landowners simply share the gain with the authority (say in a 60:40 ratio). Planning obligations are factored into the zonal development plan and auction design process, so no other development levies (CIL or section 106) are payable

- Develop the land themselves, subject to payment of a zonal CIL charge[34] (with CIL rates set so that revenues across the masterplanning zone are broadly equivalent to what the authority would expect to receive through the auction)

- Continue to have quiet enjoyment of their land and make minor developments or home improvements, provided they do not change the density or use of the land. Pre-existing planning consents are not affected in any way

6.48. The rights auction model involves developers bidding in open, transparent competition for the right to develop the land entered by the landowners in the zone, on the basis of the new outline consents secured by the authority. It performs three functions:

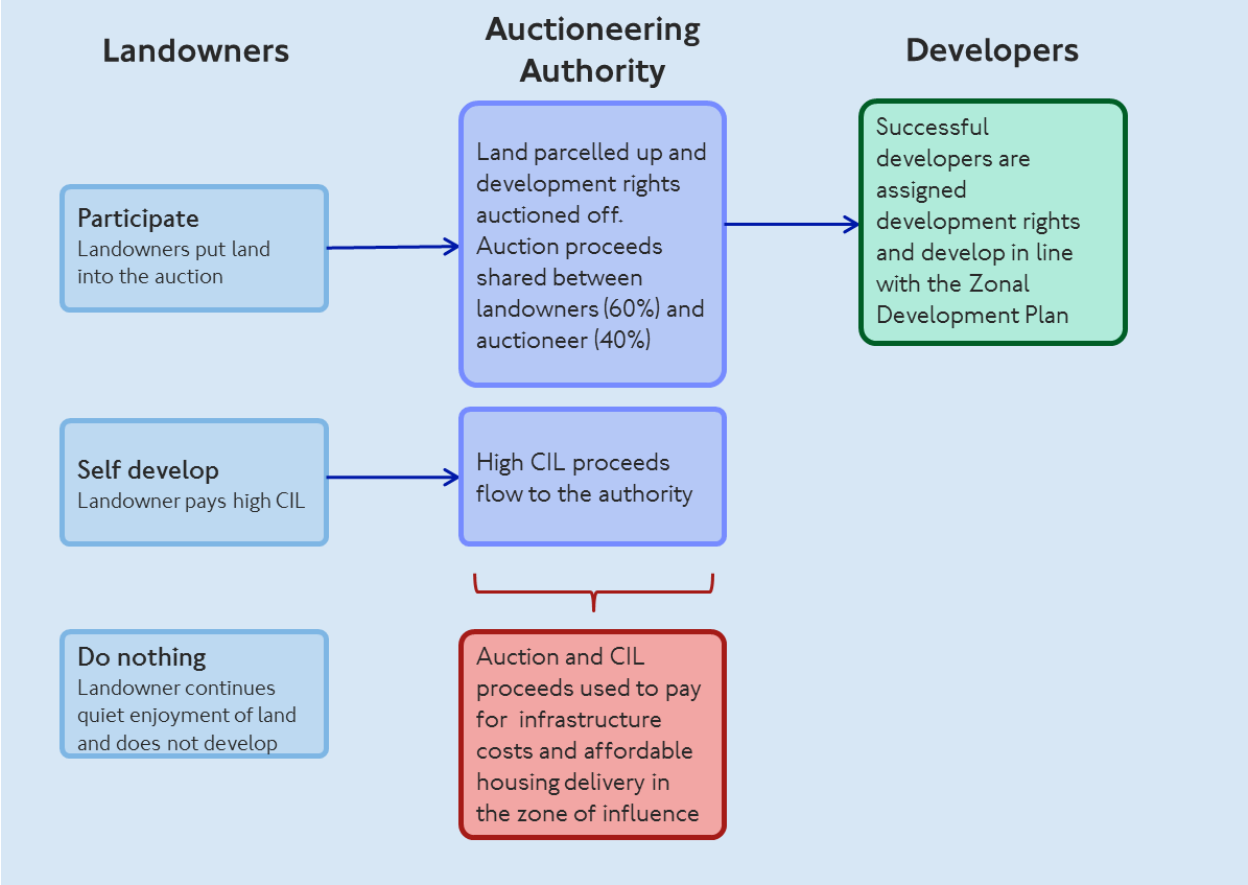
- It makes it very easy for landowners who are not developers to monetise the uplifted value of their land

- It makes it very easy for developers who are not landowners to secure new development opportunities in the zone, without the need to take upfront planning stage risks or undertake speculative land purchases

- For landowners who are developers, and wish to self-develop but believe the high zonal CIL charge is unviable, the auction provides a transparent, market-based mechanism to test development viability

[34] This zonal CIL charge would need to cover both a contribution to transport infrastructure, as well as to other local infrastructure needs identified by the local authority. In other words, it would be a consolidated CIL charge (covering both Mayoral and borough CILs).

Figure 11 – Diagram of development rights auction model



6.49. For landowners that are not developers, this model has the considerable advantage that they have to do little work to realise significant gain. All the relevant consents are obtained by the authority. It also assembles a competitive field of developers to price pooled packages of development, so the interest and quality of competition is likely to be greater than individual landowners could secure themselves. Land pooling through the auction creates opportunities for marriage value from bringing together larger land parcels. All the landowner has to do is consent to participation in the auction, and they have the reassurance that if the auction clears below the 'no scheme' reserve price, they do not have to share any gains with the authority. Landowners would receive a majority share of the gain above the reserve price, as well as a similar share from standard overage paid by the winning bidder in the event there are any further development consents issued for the site (that were not anticipated at the time of the auction).

6.50. For developers who are not landowners, a major advantage of this approach is that it completely removes land acquisition and planning stage risks. Outline planning consents are obtained by the authority. It can also negotiate and settle rights of light and existing land use covenants prior to the auction. Section 106 obligations can be clearly specified in advance, as can any minimum affordable housing requirements, site specific mitigations and financial contributions required to be made towards enabling site infrastructure. Developers therefore get to price the development opportunity on a clean basis, where the only risks they are asked to take are site preparation, construction and sales. This significantly reduces developer risk. In particular, the developer no longer bears the risk that they acquire the land at a premium and then find that planning obligations or development levies imposed on them by the planning or charging authority reduce the residual land value below their acquisition cost.

6.51. Finally, landowners who are developers are likely to wish to self-develop. As discussed earlier in this section, they are likely to respond to the high zonal CIL charge by challenging it on viability grounds. With the auction feature, there is no need for lengthy and expensive negotiations between the authority and the developer, with armies of advisers on both sides. If landowners wish to challenge the high zonal CIL, they can do so simply by participating in the auction (in fact, there is no reason why a landowner should not be allowed to bid in the auction as a developer). If the landowner is correct, the auction will clear at a value lower than the equivalent CIL rate (in extremis, it may not even clear at the reserve price, suggesting a viable CIL of zero). But if the authority is correct, it will clear at the same or higher values, and the landowner-developer will need to accept this result as transparent, fair and equitable.

Advantages of the DRAM over pure taxation and direct development

6.52. From the public authority's perspective, the DRAM has two clear advantages over pure direct development.

- First, while it preserves the value-creating potential of direct development through masterplanning and site assembly, the DRAM's principal advantage is that it requires (in principle) no land acquisition, and therefore no land acquisition budgets. Land can transfer directly from the landowner to the developer at the end of a successful auction

- Second, since the DRAM model requires the planning of real estate to march in lockstep with the planning of the transport scheme, it has the potential to accelerate receipts from new development. The transit authority receives upfront revenue from auctions that can begin early on in the construction programme, and does not necessarily need to wait until CIL receipts come in at the start of construction on new development, or from over-station development after the transport scheme has been completed

6.53. Compared to pure development taxation (ie a high zonal CIL on its own without exceptional circumstances), the main advantage of the DRAM is that it completely solves the information asymmetry problem, and guarantees development viability. However, the auction feature on its own cannot resolve the holdout problem.

Additional measures necessary to address the holdout problem

6.54. To resolve the holdout problem, the auction feature would need to be complemented by one or more of the following measures:

- A targeted underdevelopment levy

- An escalating CIL charge, and/or a declining reserve price over time

- The credible threat of compulsory land acquisition, where non-participation of a particular site threatens to stall the wider development and regeneration of the zone

6.55. An underdevelopment levy could be placed on all land holdings above a threshold size for which new development consents have been issued as part of the zonal development plan (ie avoiding small residential homeowners or owner-occupiers). The levy could be based on the difference in land values between the 'no-scheme' market values and the authority's assessment of the post-scheme market values of land. It would be payable as long as the landowner neither participates in the auction, nor proceeds with self-development and the payment of the zonal CIL

charge. The levy could be calibrated so that, in general, landowners are likely to make less money if they hold out than if they proceed with development.

6.56. Such a levy is a logical way of introducing a cost to holding out, but it could have some unintended consequences, particularly if (in certain situations) it would be rational to wait rather than proceed with development. For instance, there may be swings in the property market cycle, temporarily weakening demand for housing or office space. Furthermore, an underdevelopment levy would require primary legislation, and is likely to prove extremely controversial.

6.57. For this reason, we suggest the holdout problem should be resolved through the other two routes: an escalating CIL charge and/or declining auction reserve price; and a credible threat of compulsory purchase (or mandatory auction participation) in holdout situations. CPO requires a public interest justification (which in this case would be the delivery of the zonal development plan and area regeneration) and a demonstration that it is the last resort (which in this case would be demonstrated by the fact that the landowner is not voluntarily proceeding either with self-development or via participation in the rights auction).[35]

6.58. In order to discourage speculative land purchases from undermining the DRAM, it is important that the model be announced and discussed with industry well in advance of implementation on a trial basis, so that land values take its existence into account from the outset.

Objections to the DRAM

6.59. The principal objection to a development rights auction model is the proactive, 'interventionist' role of the public sector. Landowners may object on the basis that they are better judges of what should be developed on their land than a 'masterplanning' authority. Developers may feel that the auction feature has the potential to introduce delays into the process, since an open competition has to be run. Both objections are readily answered by the fact that the option to self-develop (and for landowners and developers to do bilateral deals outside the auction) remains freely available, subject to payment of the high zonal CIL charge.

6.60. A second objection could be the legislative change required to implement the model. We have carried out a preliminary assessment of how far the arrangements above could be incorporated under existing legislation.

6.61. A high zonal CIL charge can be implemented under the existing regulations, for instance as a zonal component of the Mayoral CIL or an MDC CIL. There is also the flexibility within the CIL regulations to provide exceptional relief for certain developments from the charge on the grounds of viability. These provisions could be used to introduce the auction feature as a standardised way of exempting landowners who participate in the auction from having to pay an additional zonal CIL charge.

6.62. We do not therefore consider at this stage that any change in primary legislation would be required to implement this model. However, some modifications to the existing regulations may facilitate a smoother implementation. These modifications could include:

[35] It is possible to avoid (or at least minimise) the need for large acquisition budgets by auctioning the development rights immediately after securing a compulsory purchase order. For example, the London Borough of Southwark carried out a number of compulsory acquisitions of properties that were in a poor state. The council auctioned the properties immediately after compulsory acquisition and received payment well ahead of any need to pay out compensation to property owners.

- Exempting the zonal CIL from an examination in public if it is accompanied by the ability to test viability through the auction (or at least to allow CIL charging schedules to be updated rapidly to take account of anticipated transport improvements without a lengthy examination process)

- Removing the precondition for an application for relief that a section 106 agreement applies to the development

- Requiring the application for exceptional relief to be made to the Mayor rather than to the charging authority, for consistency

- Enabling the zonal CIL charge to be indexed to house price inflation rather than tender price inflation, if necessary to address the holdout problem

- (Assuming successful passage of the Neighbourhood Planning Bill) establishing a clear and transparent method (for example, through guidance or secondary regulations) for determining market values of land on the basis of the 'no scheme' principle (as suggested above)

- Clarifying TfL's powers to engage in real estate development planning and designing and operating development rights auctions

6.63. We consider that most of these legislative tweaks could be made either by amending the CIL Regulations or by using the 'planning freedom' scheme under section 154 of the Housing and Planning Act 2016.

6.64. A third objection is capacity and expertise on the part of the public sector (including authorities like ourselves) to engage in integrated real estate and transport planning and delivery on the scale required. Even 10 years ago, this could have been a fatal objection. But today, we are already engaged in a major way in real estate development on our own land holdings. We have set up a very competitive framework of property development partners, and are rapidly assembling in-house expertise and capacity for real estate development. Implementing something like the DRAM on a major scale would require a significant increase in capacity (both on the planning and commercial development fronts), but there is no reason that the required capacity and expertise cannot be assembled from across the GLA Group, local government and the real estate industry.

6.65. A final objection is likely to be public sector budget constraints. Although the DRAM in principle removes the need for land acquisition budgets, it still requires some budgets to be put in place for real estate planning and securing outline consents on real estate alongside the transport scheme. It may also require some budgets to be put in place to create a credible threat of compulsory acquisition in holdout situations (unless a mandatory participation in the auction process can be secured through section 154 of the Housing and Planning Act 2016).

Value capture potential from the DRAM

6.66. The extent to which the DRAM will improve the value capture from planning gain depends on the extent of participation in the scheme from landowners, either by way of joining the rights auctions or by paying the high zonal CIL charge.

6.67. Assuming a 40/60 split of the value uplift between the masterplanning authority and the landowner, we have modelled the effect of securing a participation rate of 80 per cent from landowners in the zone of influence of our sample projects. Compared to an extraction of circa

£1.5bn using the existing CIL regime, the DRAM has the potential to extract **£3.3bn** (as part of a package of reforms[36]) or nearly twice as much. This makes intuitive sense: if the current CIL regime extracts value uplift at a rate of about 8-10 per cent, and the DRAM is successful in increasing that extraction rate to 40 per cent (in the context of transport investment), it is plausible that it should be able to produce that order of multiple of the existing CIL revenues, adjusting for participation rates and feedback effects.

Next steps

6.68. To improve the extraction of planning gain from new development:

Four For zones with low-to-medium development potential with multiple landowners, the Government should maintain the Mayor's powers to levy a Community Infrastructure Levy (MCIL) as a general development tax that makes a contribution to strategic transport infrastructure.

Five Bespoke section 106 developer contributions should continue to be negotiated on transport-dependent developments where there is a clear, single 'anchor' landowner or developer.

Six Zones with high development potential (particularly for housing) with multiple landowners, the Government, TfL and the GLA should consider the development rights auction model (DRAM), a new land value capture mechanism.

Seven The Government should consider making the process of acquiring land through compulsory acquisition more transparent by:

- Introducing an independent valuation panel to determine the market value of the land based on the 'no scheme' principle set out in the Neighbourhood Planning Bill 2016

- Establishing (early in the land acquisition process) an objective and transparent evidence base on alternative development potential in the absence of the scheme, for such a panel to determine 'no scheme' market values, for instance through the use of a modified section 17[37] certificate

[36] As a standalone measure revenue would be approximately £5bn. This is due to accounting for feedback effects in the package.
[37] Land Compensation Act 1961

7. Financing and risk management

7.1. In the preceding sections of this report, we have suggested five ways to improve the range of instruments available for systematic land value capture in London. Of these, four involve the use of new or improved land value capture instruments:

- A new (zonal) transport premium charge on residential property
- Zonal assignment of Stamp Duty Land Tax revenues
- (Zonal) retention of growth in business rates income from the increase in rateable values of commercial property
- A new development rights auction model for capturing value from planning gain

7.2. The first three target the capitalisation of transport user benefits into property values. Since in general these benefits flow only after the transport project has been completed, one should expect these revenues to start after service commencement.[38] This introduces **cash flow mismatches**, in that projects then need to borrow to finance the expenditure during the construction period, on the expectation that these revenues will service the debt after service commencement. Borrowing capacity in turn is likely to be constrained by the requirements of the Prudential Code and the need to fund interest costs from current revenues, as well as any borrowing limits agreed with Government (in the case of TfL).

7.3. Revenues from a rights auction could occur on a more accelerated basis. In the MTR model, the premium paid by auctioning development rights is used to finance capital expenditure during construction. There is no reason a similar approach cannot be taken in the UK. The timing of the revenues from the auctions depends entirely on the timing of the auctions, which in turn depend on the time it takes to complete a zonal development plan, secure the necessary planning and landowner consents, and package the site for auctioning.

7.4. Certainly, it is possible for real estate development to proceed in parallel with the construction of the transport project. One only needs to walk along Battersea Park Road/Nine Elms Lane to see the hive of development activity around the corridor while the Northern line extension is being constructed, including on the Battersea Power Station site where one of the rail stations is being built.

7.5. In other words, the property-tax based instruments will assist in making economically viable transport projects financeable, but they will not in general reduce a project's borrowing requirement. However, proceeds from the rights auction may be able to do so. The relative scale of these effects is best ascertained by experimenting with these measures on one or more suitable projects.

7.6. Cash flow timing mismatches (between capital expenditure and LVC revenues) should be addressed by borrowing under the Prudential Code. For large projects with long construction

[38] SDLT receipts may be an exception, if the property price uplift from transport is anticipated during construction, and reflected in the sale price of new and existing stock.

periods (such as Crossrail 2) – where borrowing capacity is inefficiently constricted by the need to meet interest costs from current revenues – we suggest that the Government consider a new LVC loan product (provided by the Public Works Loan Board) which provides a principal and interest holiday during construction, with a stepped-up interest rate during operations (that can be serviced using LVC revenues).

7.7. There is a separate issue around **risk and volatility**. As we have pointed out in the literature review and in the theory section in **annex 1**, it is not axiomatic that a transport project must necessarily produce land value uplifts. For the capitalisation of user benefits into property values to occur, the following three conditions must hold:

- The transport project produces significant local benefits that are valued highly by users
- Access to these benefits depends on location, and the local demand for housing in those locations rises as a result
- The local supply of land is inelastic, so an increase in local demand for housing (even while inducing some new supply) causes land rents to rise

7.8. Similarly, for transport projects to catalyse significant planning gain from new development, they must be accompanied by a supportive planning policy framework that encourages high-density development around transport hubs. Moreover, proceeds from a rights auction will depend heavily on its timing relative to a property market cycle, and the participation from landowners. In expansionary conditions, rights auctions (or the equivalent high CIL charges) could produce very large gains, but in recessionary conditions, they may produce much less.

7.9. These factors add an inherent element of risk to proceeds from land value capture. Some of these risks – such as the production of transport benefits that will be valued by users – are within the control of transport projects. Others – such as the state of the property market, or the relative participation of landowners – are less so. For this reason, the flows from land value capture should be consolidated into a programme run at a corporate rather than project level, so that property market risks are diversified across projects, and the proceeds from land value capture – even where they do not reduce the borrowing requirement for the project that generated them – can be used to fund the capital expenditure of future projects, thereby reducing the borrowing requirement for the programme taken as a whole. This seems to us to be one of the central lessons from the experience of the MTR in Hong Kong.

Next steps

7.10. To manage the risks and cash flow mismatches arising from the use of LVC instruments:

Eight Individual transport projects should not be significantly exposed to property market risks that they are not well placed to manage. Instead, land value capture should be managed as a programme run at a corporate rather than project level, so that property market risks are diversified across projects. While the programme is in trial or demonstration mode (with a small number of pilot projects), the exposure of individual projects to property market risks should be limited through appropriate contingency arrangements. This could include the deployment of the UK Guarantees scheme.

Nine Cash flow timing mismatches (between capital expenditure and LVC revenues) should be addressed by borrowing in accordance with the Prudential Code.

8. Implementation

8.1. The measures discussed in this study range from continuation of existing practice, to modest changes to existing mechanisms, to more ambitious reforms. It is possible to grade them as follows:

- Continue existing practice: over-station development, MCIL, s106 bilateral negotiations with anchor developments
- Modest tweaks: SDLT assignment and zonal revaluation retention of business rates
- Ambitious reforms: the DRAM (in place of CIL) and the transport premium charge

8.2. The first category requires no change by definition, and therefore raises no implementation issues.

8.3. The second category involves modest reforms and do not require any major changes to legislation or regulations. We suggest the Government works with ourselves and the GLA to agree the details of these mechanisms, with a view to trialling them on current projects such as Crossrail or forthcoming projects such as Crossrail 2 and Bakerloo line extension, or the Crossrail extension at Abbey Wood.

8.4. The third category represents ambitious reforms. The DRAM does not require any major legislative changes (although the details of regulatory tweaks that might facilitate smoother implementation should be drawn up and agreed). However, it represents a new business model both for TfL/GLA as well as for the development industry. It will therefore require considerable consultations with stakeholders (particularly the development industry), with a view to trialling this on projects such as Crossrail 2 if possible once stakeholder buy-in has been secured.

8.5. The transport premium charge is the most ambitious proposal in this study. If Government are minded to pursue it, the proposals sketched out here will require detailed development into a White Paper for consultation, followed by a lengthy legislative process. Although politically sensitive, the charge has the potential to raise the maximum resources from land value capture across our sample schemes, and so the effort may be warranted. Projects such as Crossrail 2 and the Bakerloo line extension are good candidates for this charge, but a trial will need to wait until consultations and legislation are in place.

Next steps

8.6. To test how these measures are likely to work in practice:

Ten Following further work on detailed design and implementation issues, the land value capture instruments proposed in this study could be tested on a selection of forthcoming transport schemes in London.

9. Next steps

9.1. This technical report and supporting annexes are the result of a joint study by ourselves and the GLA. Their purpose is to support policy discussions with Government, the London Finance Commission and wider stakeholders. They respond to the invitation by Government in the 2016 Budget to submit detailed proposals for funding transport projects in the city using land value capture, and a request for evidence by the Commission.

9.2. This report and its annexes should be considered alongside the final report of the London Finance Commission.

Box 7: London Finance Commission

In parallel with this study, the Mayor of London re-formed the 2016 London Finance Commission to review, refresh and revise its original recommendations in the light of changed circumstances; in particular the referendum vote to leave the European Union (EU), the Mayor's new priorities, and the progress on devolution that has been made since the 2013 report: Raising the Capital.

On 27 January 2017, the Commission published its final report, 'Devolution: a capital idea'. In addition to recommending greater fiscal devolution, the Commission recommended the Government should work together with the boroughs, the GLA and TfL to develop a consultation paper on the objectives, principles and design options of a land value capture charge. It also said:

- 'The Government should work with the Mayor to develop a framework for localising the portion of Stamp Duty attributable to transport-catalysed value uplift'
- Short of full devolution of the business rates system, interim measures, such as allowing the growth in business rate yield following revaluations in particular zones, could assist in extracting value uplifts
- 'The GLA and TfL should work with the Government, local authorities and the development industry to improve the consolidation of public and private land for development around major transport investments such as Crossrail 2, including through innovative land pooling and auctioning arrangements, with an equitable sharing of risks and rewards between the private and public sectors'

The Commission also recommended a land value tax pilot on undeveloped land.

The Mayor endorsed all of the Commission's recommendations. The report and working documents are available at: https://www.london.gov.uk/what-we-do/business-and-economy/promoting-london/london-finance-commission

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