

Capturing Value

New Funding Strategies for Transport Infrastructure

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Abstract

Federal and state governments struggle to balance their investments in building and maintaining the “right” infrastructure. Investing too much or in the wrong kinds of infrastructure can hinder economic growth for many years by foreclosing more productive investments options. Investing too little or in the wrong places can strangle private sector initiative and result in lost opportunities. These challenges are compounded by rising expectations among the public for more and better quality services and diminishing funding sources for infrastructure investment, maintenance and renewal.

Value capture methods can contribute to better infrastructure decision-making and investment. Although not well understood or widely practiced in Australia, value capture methods are used extensively overseas to help fund transport infrastructure projects. This paper first explains what value capture is, what common sources of revenue are captured, and the quantum of revenue that can be captured from well-planned and delivered transport infrastructure projects.

To make the case for introducing value capture methods, the paper identifies trends and conditions that should compel Federal and state agencies in Australia to adopt funding innovations and reforms such as value capture. For example, fundamental changes are occurring in the global economy that will influence Australia well into the future. Urbanisation is occurring more rapidly among our Asian trading partners than it is in Australia. These trends require new funding sources and strategies if our standard of living is to be maintained.

In order to remain competitive, Australian cities must make greater investments in productive infrastructure. Crossrail, a \$30 billion expansion to London’s public transport network, is used to illustrate how the UK is improving productivity.

Drawing from Crossrail and the author’s international experience, the paper identifies key success factors of value capture programs. The paper concludes with actions for Federal and state agencies to take in implementing value capture programs in Australia.

1. Introduction

Well-planned and maintained public infrastructure is the foundation of modern society. It supports productive enterprises, enhances quality of life and underpins economic prosperity.

Smart infrastructure investment, however, is challenging. Recent reports by the Productivity Commission and Infrastructure Australia have underscored the urgent need for reform and innovation in the ways infrastructure is procured, financed and delivered in Australia.

This paper examines the potential use of value capture to contribute to better infrastructure decision-making and investment. Value capture supports smart decision-making by focusing on **self-supporting** and **synergistic** infrastructure investment. For example:

- Infrastructure can be **self-supporting** by incorporating methods that capture some portion of the value it creates to help fund the investment.
- Infrastructure investment can be **synergistic** by targeting and attracting other complementary public and private sector investments, thereby generating wider benefits to stakeholders and the surrounding community.

This focus of this paper is on urban transport infrastructure and its role in supporting urban development. When carefully integrated with land use planning, transport infrastructure has the potential to leverage the public's infrastructure investment to achieve other complementary benefits. Although the report draws heavily from experiences in NSW, the examples, key findings and recommendations are relevant throughout Australia and internationally.

The paper is organised in four sections following this introduction, as follows:

- Section 2 provides background to value capture principles and explains its use as a both funding model and a decision-making tool. An indication of the quantum and types of revenue sources is also provided.
- Section 3 examines a number of “big picture” reasons for considering this funding model, including global economic conditions, state infrastructure spending patterns, urbanisation and productivity.
- Section 4 provides a brief case study of how some of the key issues discussed in previous sections have been taken into account on Crossrail, a major expansion of London's public transport system.
- Section 5 lists key success factors of value capture programs based upon the author's experience.
- Section 6 makes recommendations for Federal and state agencies to take in advancing value capture in Australia.

2. Value capture defined

2.1 Background

It is now widely accepted that investment in well-conceived transport infrastructure generates economic benefits that exceed costs. A study by the Australian Bureau of Infrastructure, Transport and Regional Economics (BITRE) estimated that public investment in 128 road and rail projects in Australia returned \$2.65 for every \$1 invested and had a present value of net benefits of \$62 billion (BITRE 2014). In the UK, London's Crossrail project – an eight station, 21 km addition to the metropolitan area's commuter rail network currently under construction – is expected to generate a benefit - cost ratio (BCR) of between 3.05:1 and 4.91:1 as a result of its impact on:

- Sustainable economic development and population growth, by increasing transport capacity and reducing congestion on the transport network
- Improved transport connectivity through journey time savings
- Enhanced accessibility thereby improving people's access to jobs, schools and other facilities
- Improved transport safety with reduced road accidents

- Environmental improvements, including a reduction in CO2 emissions.

Working with UK transport agencies and local businesses, the City of London introduced innovative funding methods to capture these benefits to help pay for the project, including direct contributions to capital costs and a Business Rate Supplement (BRS). The BRS collects 2% of the value of non-domestic properties in London having a rateable value of over \$102,950. These funds will be collected over 30 years and used to finance \$7.6 billion (26%) of the \$29.6 billion project (Department of Transport 2010).

Unlike in London and other global cities, Australian transport agencies have not adopted similar innovative funding mechanisms. Funding sources for infrastructure projects in NSW are typically funded from Commonwealth grants, state taxes, council rates, user charges and development levies. These sources have several shortcomings:

- Commonwealth grants, state taxes and council rates apply to all taxpayers within a given jurisdiction, so there is no nexus between the investment and its beneficiaries.
- User charges and fare-box revenues are generally insufficient to cover the large capital costs of long life infrastructure assets, such as light rail projects.
- Developers generally pay development levies as a lump sum, up-front payment, thereby increasing housing costs, reducing affordability and diminishing intergenerational equity.
- Investments in transport infrastructure and urban renewal are long-term propositions, require large upfront costs, and may take years or even decades to fully amortise and recoup the initial investments.
- None of these methods target the indirect benefits of infrastructure projects.

The indirect benefits of infrastructure projects, referred to as “positive externalities”, include increased tax revenues received by public agencies and financial windfalls received by property owners and businesses located near a transport project. For example, recent improvements to Sydney’s suburban rail network around Epping station nearly tripled the value of nearby single dwelling properties from an average of \$1.2 million to over \$3 million each (Collier 2014).

Studies of the Mandurah Line expansion in Perth found that increased property values and tax revenues from similar commuter rail projects there were also substantial. In that study, increased tax revenues over 30 years resulting from the Mandurah Line amounted to 42% of the project’s capital costs. If smart growth principles had been implemented with the expansion, tax revenues would have exceeded 60% of the capital costs of the project (McIntosh 2014). These benefits would have produced from higher public transport patronage, higher density development, more housing choices, and better use of existing infrastructure, as explained below in Section 2.3.

While the financial windfalls from these examples were the direct result of the public’s investment in transport infrastructure, no equitable mechanism exists in NSW, Western Australia or any Australian state or territory to capture indirect benefits to help pay for the infrastructure or related costs associated with the improvements. Rather than obtaining a financial benefit from its infrastructure investments, the Australian public is in effect paying an inflated price for land around transport infrastructure as a result of its investment, and the uplift in value solely benefits nearby property owners. This inflated cost is then passed on in the form of higher taxes, high housing costs and higher public transport fares. This is occurring throughout Australia despite an increasing gap in infrastructure funding.

2.2 Value capture as a funding method

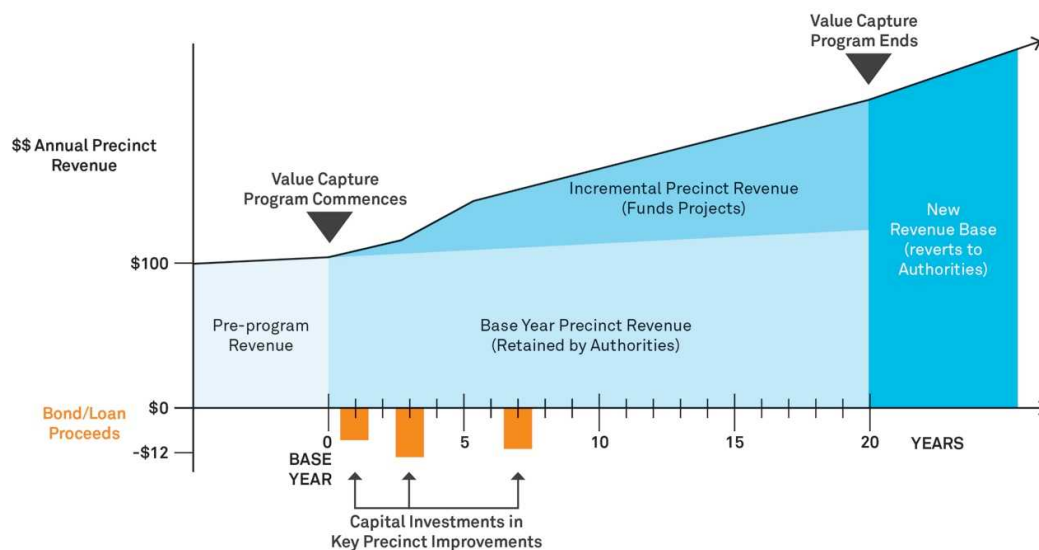
Value capture funding methods identify and collect an equitable portion of the value released through new zoning and other public improvements so the communities that create this value share in the wealth it generates. There are a number of proven approaches that help reach the goal of sharing outcomes equitably with the public, investors and developers. The funds thus collected are deposited into dedicated accounts for a set time period and are used to contribute to the cost of projects and other public improvements to the civic realm.

Value capture is not a new tax. It allocates the uplift in benefits from public investments in ways that do not affect current or future tax rates. The “beneficiaries pay” principle lies at the heart of successful value capture programs. Importantly, these programs capture revenues that would not otherwise exist without the public investment, and can permanently increase the levels of revenue to the taxing authorities (CDFA 2009). A study of 26 Tax Increment Financing (TIF) districts in Denver, Colorado found that these programs earned a Return on Investment (ROI) of 140 per cent on investment and had an average payback period of 12 years. These increased tax revenues have continued after the programs ceased and are expected to be permanent (Sheehan 2015).

Figure 1 illustrates how tax revenues increase over time as well-planned capital investments are made within a value capture precinct. As capital investments are made within the precinct, tax revenues increase above Base Year revenues as existing businesses expand and new businesses and residents are attracted into the precinct. The increases in revenue above the Base Year are collected for a set time period, say 20 – 25 years, and used to repay loans or infrastructure bonds that pay for upfront site and infrastructure improvements. At the end of the program, the full tax revenue stream is returned to the taxing authorities.

The New Revenue Base shown in Figure 1 combines Base Year Precinct Revenue plus Incremental Precinct Revenue generated by the infrastructure. The Incremental Revenue is directly attributable to the infrastructure it funds, and would not have been generated or collected without the infrastructure investment combined with a value capture program.

Figure 1 Value capture funding model



In addition to being used for transport infrastructure investments, value capture revenues have been used to pay for a variety of costs associated with unlocking the development potential of urban renewal sites, including:

- Environmental remediation of contaminated sites
- Property acquisition and site consolidation
- Demolition and site preparation
- Rehabilitation and renovation of historic structures
- Construction of new or improvements to existing civil infrastructure

Although new revenues from a public investment might extend beyond its immediate location, such as the wider community benefits of light rail or road improvements, value capture programs should be carefully limited to high impact locations. This simplifies the process of identifying beneficiaries and equitably capturing project-related revenues. Spreading taxable activities over too wide an area reduces the overall efficiency and effectiveness of the program.

2.3 Value capture as a decision-making tool

Value capture has evolved to become both a funding mechanism and a decision-making tool for public infrastructure. As a decision-making tool, the key objectives of value capture programs are to:

- Maximise property value uplift within a designated improvement precinct and,
- Contribute to an investment strategy that attracts complementary public and private sector investment.

Value capture programs contribute to public infrastructure decision-making by promoting “smart growth” principles. “Smart growth means managing urban development patterns and transportation networks to minimise environmental impacts and maximise the social and economic health to the community while making prudent use of capital and operating expenditures” (Tomalty 2007). Smart growth principles include:

- Stemming the spread of urban areas
- Concentrating growth in already urbanised areas
- Making better use of existing infrastructure
- Revitalising central business districts
- Enhancing transit facilities
- Shifting the emphasis to green buildings and energy sources
- Creating affordable, walkable and bike-able neighbourhoods.

Smart growth increases land value, the major source of incremental tax revenue growth illustrated in Figure 2, by:

- Recognising the value creation potential of integrated transport and land use planning, and
- Driving changes in land use and transport within a defined improvement precinct to leverage the public’s infrastructure investment.

Numerous studies demonstrate that well-planned urban renewal programs that integrate land use and transport infrastructure produce significant increases in land values (Smith and Gihring 2012). A 2006 study of 89 value capture districts spread across 67 municipalities in the Chicago metropolitan area found that mean annualised property values in these districts increased by 35 per cent between 1983 and 1993, compared with a six per cent increase in overall municipal property values (Byrne 2006). Industrial and CBD districts experienced the highest median increases, growing by 32 and 26 per cent, respectively.

These increases are caused by improved access to jobs and housing, more efficient and productive uses of land and infrastructure, and the ability of employers and employees to specialise in order to produce high value services and products. In essence, smart growth programs not only revitalise our cities but also enhance public tax revenue over the long term.

2.4 Value capture's potential contribution to capital costs

International experience demonstrates that well-planned public transport can increase land market values by up to 50 per cent (McIntosh 2014). The extent of value uplift varies depending upon the nature of the infrastructure, the distance of a property from the infrastructure, accessibility, urban design amenities, and numerous other factors. A review of more than 100 papers by BITRE found that the average value uplift from transport projects ranged from 6.9 per cent to 9.7 per cent, with a range of -42 per cent to +40 per cent (BITRE 2015). Value capture programs hypothecate a portion of this land value increase to help pay for the infrastructure.

The contribution that value capture programs can make to a project's capital cost as a result of value uplift also varies. For example:

- A study by KPMG for the Sunshine Coast light rail project indicated that a “well designed and articulated value capture strategy” could contribute in the order of 10% to 20% of that project's \$1.8 billion cost.
- The Denver Union Station redevelopment project in the US State of Colorado, which serves as the transport hub for Denver's light rail network, captured \$135 million of its \$446 million cost through value capture (Langley 2013), or roughly 30% of the project's capital cost.
- Hong Kong's MTR (Mass Transit Rail) transit system is fully funded by property development gains. In this example, MRT acquires land for stations at values based on a no-rail scenario and improves the land with infrastructure, including transit stations. Development sites around the station are then leased at higher values with the infrastructure in place.
- In Paris, the metro system is undergoing a major 200km extension costing €30 billion. The vast majority of funding will be from a regional tax on commercial buildings allocated directly to the project.

Clearly, value capture's potential contribution has a wide range. Using a fully integrated transport operating and property development model in a densely developed urban environment, Hong Kong's public transport system pays for itself. Given international experience in less densely developed cities in North America discussed in later sections of this report, it is reasonable to assume that a well-conceived and managed value capture program in Australia could contribute between 10% and 30% of directly related infrastructure costs within a defined improvement district. The actual contribution could be higher or lower, depending upon a number of key success factors which are considered in later sections.

2.5 Revenue sources

Value capture programs originated in California in the 1960's as a means of revitalising blighted commercial centres. Traditional value captures programs:

- Establish a clear nexus between the beneficiaries of the investment and the charges applied to those beneficiaries.
- Hypothecate only the *increase or some portion of the increase* in property values and public revenues attributable to public investments, and are therefore cost-neutral to property owners because increases in taxes paid are offset by a corresponding increase in property values.

- Pay for only predetermined urban renewal projects and programs for a fixed time period, usually 20 to 30 years, thereby allowing their return on investment to reach full maturity.
- Fund investments that would not have been made but for a clearly documented public need, such as urban blight.

After over 40 years of use in the US and other countries, value capture methods have expanded and evolved to include methods that do not always adhere to the objectives and characteristics in the original legislation. For example, legislation in Queensland refers to some forms of additional property taxes used to fund infrastructure as “value capture”, when in fact they are simply additional taxes and have no stated or implied nexus to value (Department of State Development, Infrastructure and Planning 2014). The Gold Coast light rail transport levy, a \$111 annual charge against all ratepayers, is an example. This distinction is important because infrastructure funding methods tend to be regressive unless:

- They capture additional value over and above a “without investment” scenario; that is, they are based upon a net increase in surrounding property value or tax revenues created by the infrastructure, and
- They hypothecate only the resulting increase in tax revenues to fund the infrastructure, not the underlying pre-investment tax revenue.

Funds come from a variety of sources in overseas value capture programs. The following list describes common funding sources, some of which are currently in use in traditional Federal, NSW and local government funding programs. Not all of these sources would be appropriate or supported in a NSW value capture program, but are listed for completeness.

Table 1 Potential value capture revenue sources

Retail sales taxes (GST)	Transfer (stamp) duty	Payroll taxes
Property taxes	Council rates	Development contributions
Voluntary planning agreements	Special rates	Sale of bonus gross floor area
Sale / lease of air rights	Sale / lease of development sites	Parking levies
Hotel taxes	Capital gains taxes	Property development

3. Why we must consider value capture now

There are a number of compelling reasons why value capture funding methods should be considered now. Fundamental changes are occurring in the global economy that will influence the Australian economy and society well into the future. The daily evidence of these changes can be seen around us, but we remain as complacent as a frog in a slowly heating saucepan to these changes. In order to grasp the magnitude of changes that are occurring and begin to undertake the significant reforms required to deal with those changes, we need to act now or be willing to accept a steadily diminishing quality of life for future generations.

Australia’s future economic well-being will be heavily influenced by three factors:

- Economic alignment with global growth sectors
- The productivity of our cities
- Demographic changes affecting our workforce.

These factors will have an increasing impact on state budgets, the shapes of our cities and our ability to compete successfully with our international trading partners. Infrastructure will play an important role in meeting these challenges. As competition for limited budgets increases, it is important for public agencies to consider how additional funding can be equitably generated from infrastructure to meet the public expectations for improvements in service quality. This section examines some of these issues.

3.1 Global context

The global economy has grown significantly over the past decade, with output more than doubling from US\$30 trillion to US\$74 trillion between 2000 and 2013. Growth in Australia's Gross Domestic Product (GDP) has generally been above three per cent per annum since 1993, except during the Global Financial Crisis, when it dipped to 1.5 per cent (Infrastructure Australia 2015).

In the near term, the major world economies, excluding China, are projected to return to a 3.6 per cent average GDP growth rate by 2014-15. Beyond 2019, global economic growth is expected to taper off to around three per cent per annum. China's GDP is expected to stabilise from a recent high of 13 per cent to around seven per cent, before steadily declining to around six per cent by 2031 (Reserve Bank of Australia 2015).

Significant shifts in global markets will affect Australia's economy in the future. Past domestic growth has been driven by numerous large-scale resource projects, particularly those supplying raw materials and energy to China. As China's economic growth has declined, new suppliers from South American and Africa have entered the global resources market. This means that global resource suppliers, including Australia, will be competing for a diminishing demand for raw materials. Australia's growth in the future is therefore expected to be less influenced by China's energy and resource needs, and relatively more affected by wider global economic trends.

The Australian economy is projected to grow at less than three per cent per annum over the next two decades. If Australia is going to achieve or exceed this rate of growth, it will need to become more productive, exploit its natural advantages and continue to transition away from sectors where it no longer holds a competitive advantage.

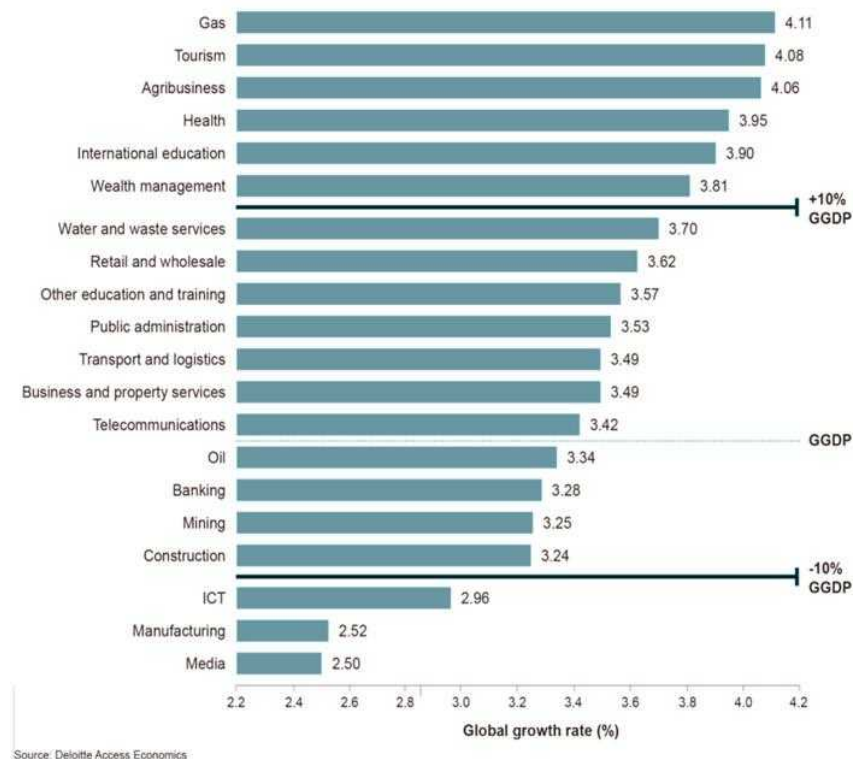
A recent study by Deloitte Access Economics (Deloitte 2013) highlighted five advantages Australia has when compared with its trading partners:

- World-class resources in land, minerals and energy
- Proximity to the world's fastest growing markets in Asia
- Use of English, the world's business language
- A temperate climate
- Well-understood tax and regulatory regimes.

Based on the forecast growth in global gross domestic product (GGDP), the study identified the following industry sectors offering Australia the most promise in the future:

- Gas
- Tourism
- Agriculture
- Health
- International education
- Wealth management.

Figure 2 Global GDP Growth Rate - 2013 - 2033



As shown in Figure 2, these sectors are expected to grow by over 10 per cent globally in the future. Four of the top six growth sectors – tourism, health, international education, and wealth management – are sectors where Australia currently holds a competitive advantage over some Asian competitors. However, this advantage is slipping as countries throughout east Asia transition from “developing” to “developed” economies, and their social and economic infrastructure begins to compete with slower growing developed countries, including Australia, Japan, the US, the UK, and the EU. In contrast, mining and manufacturing, Australia’s traditional sources of growth, are expected to grow by less than four per cent.

These trends require Australia to realign infrastructure investment at the intersection of our natural advantages and future global growth sectors. Improvements in international freight, internet bandwidth and manufacturing technology will enable lower cost overseas providers to compete directly with local suppliers for high value products and services. An unproductive investment in one location will negatively affect our ability to make productive investments elsewhere. As explained below, urban centres generate 80 per cent of Australia’s economic activity and are the main locations for four of the six fastest growing sectors listed above. Investment decisions in our urban centres will therefore significantly influence Australia’s economic growth trajectory in the future.

3.2. State context

States and territories throughout Australia are ramping up infrastructure investment to build new infrastructure, maintain and repair deteriorating assets, support population and employment growth, and boost economic performance. For example, in its 2014/15 budget, the NSW State Government announced a record \$61.5 billion program of transport and urban renewal projects across the Sydney metropolitan area.

In contrast, large-scale infrastructure spending in the resource sector across Australia is projected to experience a pronounced decline. This will put more pressure on state governments to make better use of alternative measures to fund major projects, such as asset recycling, improved procurement practices, and funding and financing reforms. Gaining acceptance from the electorate for some of these measures will take time and is not assured, as evidenced by the 2015 Queensland and 2014 Victorian state elections.

The 2014-15 NSW budget proposes a four-year infrastructure expenditure plan of \$61.5 billion on productive infrastructure (Constance 2014), including \$1.63 billion in the current year for:

- North West Rail Link - \$863 million
- South West Rail Link - \$103 million
- CBD South East Light Rail - \$265 million
- WestConnex motorway - \$398 million

The NSW Government expects to fund some of these costs from the leasing of 49 per cent of its electricity distribution assets, which will be recycled into the Rebuilding NSW program (ANZ Research 2015).

These commitments by the NSW Government will generate long-term benefits to the national, NSW and metropolitan economies. But as shown from examples in other countries, opportunities remain for the NSW Government to capitalise on these investments. If just 10% of the value on the four projects listed above could be captured from passive beneficiaries and dedicated to an infrastructure fund, \$163 million would be available to offset infrastructure costs to NSW taxpayers. If value capture methods could be applied in a similar manner with similar results to the four-year infrastructure investment plan, NSW taxpayers would recoup \$6 billion over the coming decades to help fund infrastructure investments. Given these examples, Commonwealth and state government agencies should be encouraged to seriously consider value capture funding methods.

3.3. Urbanisation

“Cities”, according to the World Economic Forum, “are the lifeblood of the global economy” (World Economic Forum 2015). It is estimated that an additional 2.5 billion people will move to urban areas by 2050. In order to maintain their competitiveness, cities need to improve their productivity against their global peers.

Urbanisation is a worldwide phenomenon, with the fastest growth in cities occurring among Australia’s Asian trading partners. Currently, over 80 per cent of Australians live in urban areas and over 80 per cent of economic activity takes place in cities. Globally, 52 per cent of the world’s population resides in urban areas, but this is rapidly changing, particularly in Asia. Around 4 out of 10 cities over 5 million people are located in Asia, and China’s biggest cities are growing at 3.9 per cent, twice the rate of the rest of the world. By 2050, over half of the world’s urban population will live in China (United Nations 2014).

Because of their faster rates of growth and larger scale, Asian cities are expanding rapidly in greenfield locations, allowing their governments to build at higher densities and with modern public transport and civil infrastructure. For example, Taipei and Kaohsiung, Taiwan’s two largest cities, are linked by a new high speed rail line. The high speed train makes the 340 km journey in 96 minutes (Wikipedia 2015) and opened up new areas for urban growth. The line eliminated commercial air travel between these cities within five years of commencing service. In contrast, Australia’s slower rate of urban growth is taking place primarily in existing capital cities, requiring redevelopment of the existing urban footprint and upgrading of existing commuter rail networks first constructed in the 1890s. The Federal government’s

2014 investigation of high speed rail in Australia is based on services commencing in around 2035 if justified by a variety of future conditions (Department of Infrastructure and Transport 2013).

As Asian cities grow and become more advanced, they will increasingly compete with Australian cities as providers of high value products and services, eroding our historic competitive advantages. In order to offset the decline in mining and manufacturing, Australia must make its cities more competitive on a global scale. High-density employment centres, accessible and affordable housing, modern infrastructure and efficient transport systems will play critical roles in this effort.

3.4. Population, Productivity and Participation

The *2015 Intergenerational Report* identifies the key drivers of the economy as population, participation and productivity. Following a long and steady increase in these factors over past 40 years, the Australian economy is entering a period of lower growth over coming decades. For example:

- Population growth will drop to an average annual rate of 1.3 percent from 1.4 percent
- The participation rate, which measures the working status of persons aged over 15, will drop from 64.6 per cent in 2014-15 to 62.4 per cent in 2054-55
- Australia's productivity will decline to an average annual rate of 1.5 per cent from a high of 2.2 per cent in the 1990's.

Australia's global competitiveness ranking fell from 21st in 2014 to 22nd in 2015, compared with New Zealand, which rose from 18th to 17th and the UK, which rose from 10th to 9th during the same period (World Economic Forum 2015).

Demographic trends, including an aging workforce and increasing dependency ratios, will become an increasing drag on the economy. Many economists believe the best way to respond to these trends "is to support strong, sustainable economic growth. Economic growth will be supported by sound policies that support productivity, participation and population — the '3Ps'" (Commonwealth of Australia 2012).

Slight changes in these trends over the next 40 years will have major impacts on Australia's economy and competitiveness. Value capture funding methods help address a number of challenges in making Australian cities more competitive, by:

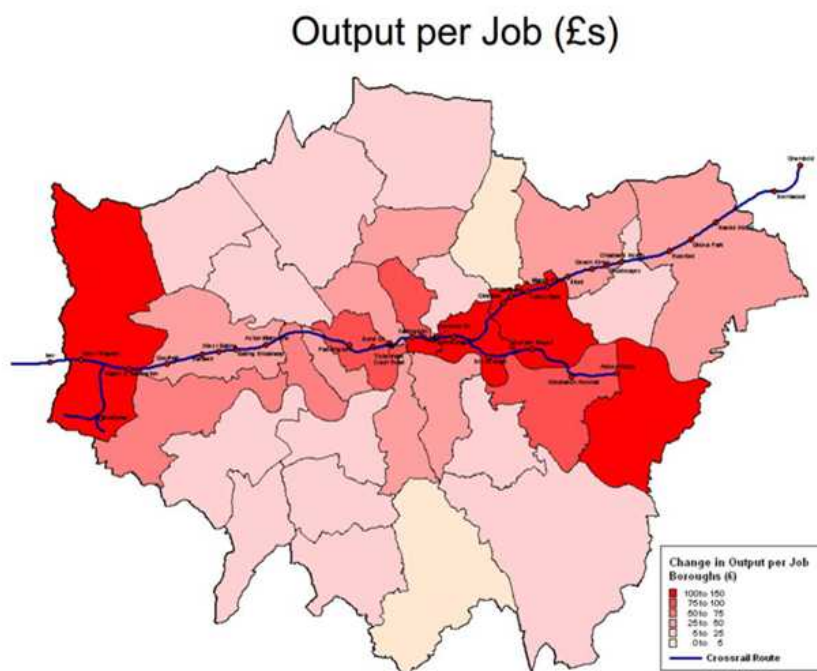
- Increasing productivity
- Closing the infrastructure funding gap
- Integrating land use and transport planning
- Improving the return on investments from infrastructure

4 Crossrail case study

In the UK, the City of London and transport agencies are investing in Crossrail to support the country's sustained economic growth by improving access to jobs. Crossrail is Europe's largest construction project, costing \$29.6 billion. The first services through central London will start in late 2018, eventually serving 200 million annual passengers (Department for Transport 2010).

Crossrail will increase London's transport capacity by 10%. It will bring an additional 1.5 million people to within 45 minutes of central London and link London's key employment, leisure and business districts – Heathrow, West End, the City, Docklands. This will allow more workers to find jobs and companies to deliver more specialised, higher value services.

Figure 3 Crossrail impact on output per job



Source: Crossrail

The business case for Crossrail is being underwritten by capturing increased property values in locations served by the project and by transport benefits generated for business and commuters, including:

- Faster journeys
- Less congested trains and stations
- Reduced need to interchange
- Improved quality of services

London's transport benefits arise from the pure agglomeration effects of Crossrail, which captures the increase in productivity workers will experience from improved accessibility to jobs and housing.

These benefits are measured as Gross Value Added - the additional value of output generated by organisations resulting from employees' increased productivity. The London boroughs that are projected to experience the most significant changes in accessibility to jobs will have the highest change in output per job, indicated by darker shades in Figure 3.

Australia will confront major challenges in the coming decades as global markets for goods and services become more competitive, infrastructure budgets become squeezed by competing demands, and demographic changes ripple through the national and state economies. The UK's Crossrail project presents an example of how these challenges can be met. By making our cities more competitive and our workforce more productive - and by focusing infrastructure investments in those sectors where Australia holds natural competitive advantages - infrastructure funding and delivery reforms can play important supporting roles in these efforts.

5. Key success factors

Ex-post studies of infrastructure projects in Australia and value capture programs overseas reveal some common success factors as well as persistent obstacles to reform and innovation in infrastructure investment. Key success factors and guiding principles for an Australian value capture program are explained in Table 1 (Langley 2015).

Table 2 Key success factors

Key success factors	Guiding principles
Comprehensive, longer term planning and funding strategies	Infrastructure and urban renewal projects and programs supported by value capture methods should be based upon a minimum time horizon of 20 years to allow for funding sources to realise their full potential.
Genuine and robust stakeholder engagement	A genuine and robust public consultation program, developed and implemented by specialists in that field, is an integral part of successful value capture programs. Business and community participation and membership at various levels in consultative committees and boards and in the decision-making process should be encouraged.
Precinct-based planning and funding	Value capture programs should be carefully ring-fenced within a defined precinct. The precinct should encompass complementary community activities and assets that would benefit from the infrastructure investment and that could be leveraged to generate wider economic benefits.
Transparent and balanced governance frameworks	Local government in NSW should become a key partner in precinct-based infrastructure and urban renewal planning, decision-making, funding and delivery. A general transfer in responsibilities and powers from state agencies to better resourced local government should be pursued as a mid to long-term policy objective.
Understand and balance risks and reward	NSW Government should reinvigorate infrastructure reforms as recommended by the Productivity Commission and Infrastructure Australia, and seek genuine partnerships with the private sector based upon an equitable balancing of risks and rewards.
Use incentives to attract private investment and better design	Successful value capture programs use financial and other incentives to attract private investment and engage businesses and residents in related programs that improve property values, neighbourhood amenity and economic activity. In this way, value capture programs can generate broadly based community benefits and become self-funding.
Stronger urban renewal powers	Local government and urban renewal agencies need stronger powers if they are going to make meaningful improvements in housing approvals and affordability, infrastructure investment, and broad scale regeneration of industrial precincts, commercial centres and neighbourhoods.
Recognise and incorporate wider economic benefits	It is recommended that Commonwealth and state governments collaborate to develop a common framework

	and commission pilot projects to assess the wider economic benefits of infrastructure and urban renewal projects. Pilot projects should be undertaken in partnership with state and local government agencies, professional associations, research institutions and the private sector.
Focus on value rather than cost	Commonwealth, state and local agencies with the responsibilities for funding, developing, evaluating and delivering infrastructure and urban renewal should incorporate value for money guidelines in project appraisals as proposed by Infrastructure Australia and Infrastructure NSW.
Secure consistent and coordinated leadership	Consistent and coordinated leadership is non-partisan, evidence-based and in the long-term public interest. The leadership model for a given project must be tailor-made and established before the project is introduced.

6. Recommendations

The following recommendations are made to address the infrastructure funding challenges and opportunities identified in this paper:

1. The Commonwealth Government should establish a Minister for Cities and Urban Development in recognition of the key role that cities play in the national economy. The Ministry should work with state planning and infrastructure agencies to set national standards and guidelines, support research on national urban policy issues, and develop model legislation for state, territory and local governments.
2. Commonwealth and state governments should undertake practical research into value capture methods as a funding supplement for transport infrastructure and urban renewal projects. This could be accomplished in part by establishing pilot programs in conjunction with state agencies, local councils, professional associations, research institutions and the private sector. The aims of the pilot program should be to:
 - Provide a consistent approach and common guidelines for considering and evaluating value capture and related funding and financing reforms.
 - Develop a national forum and database for sharing research and information on urban funding and financing reforms.
 - Develop model enabling legislation to assist state and local governments, urban renewal authorities and other stakeholders considering value capture methods.
3. Commonwealth and state treasuries should redouble efforts to implement infrastructure funding and financing reforms recommended by the Productivity Commission in its 2014 Public Infrastructure Report and by Infrastructure Australia in its 2013 National Infrastructure Plan to maintain Australia's global competitiveness and reduce our growing infrastructure backlog.

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