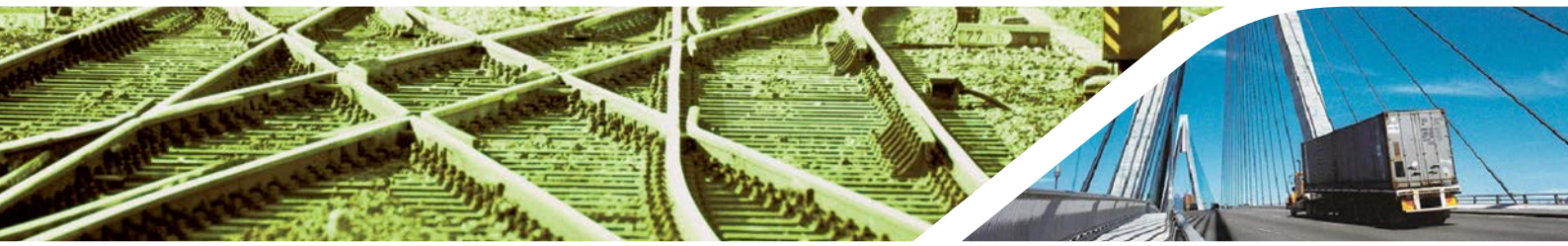
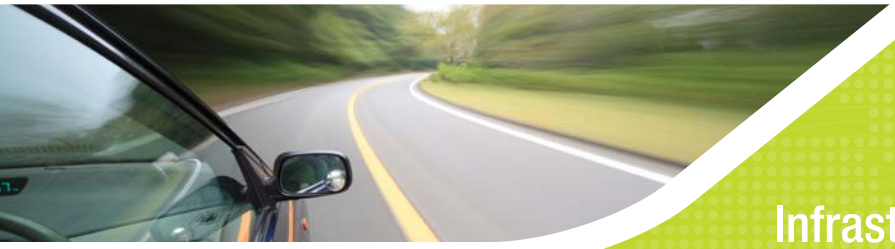
Attachment A

Australian Government

Department of Infrastructure and Regional Development





Trends

Infrastructure and transport to 2030

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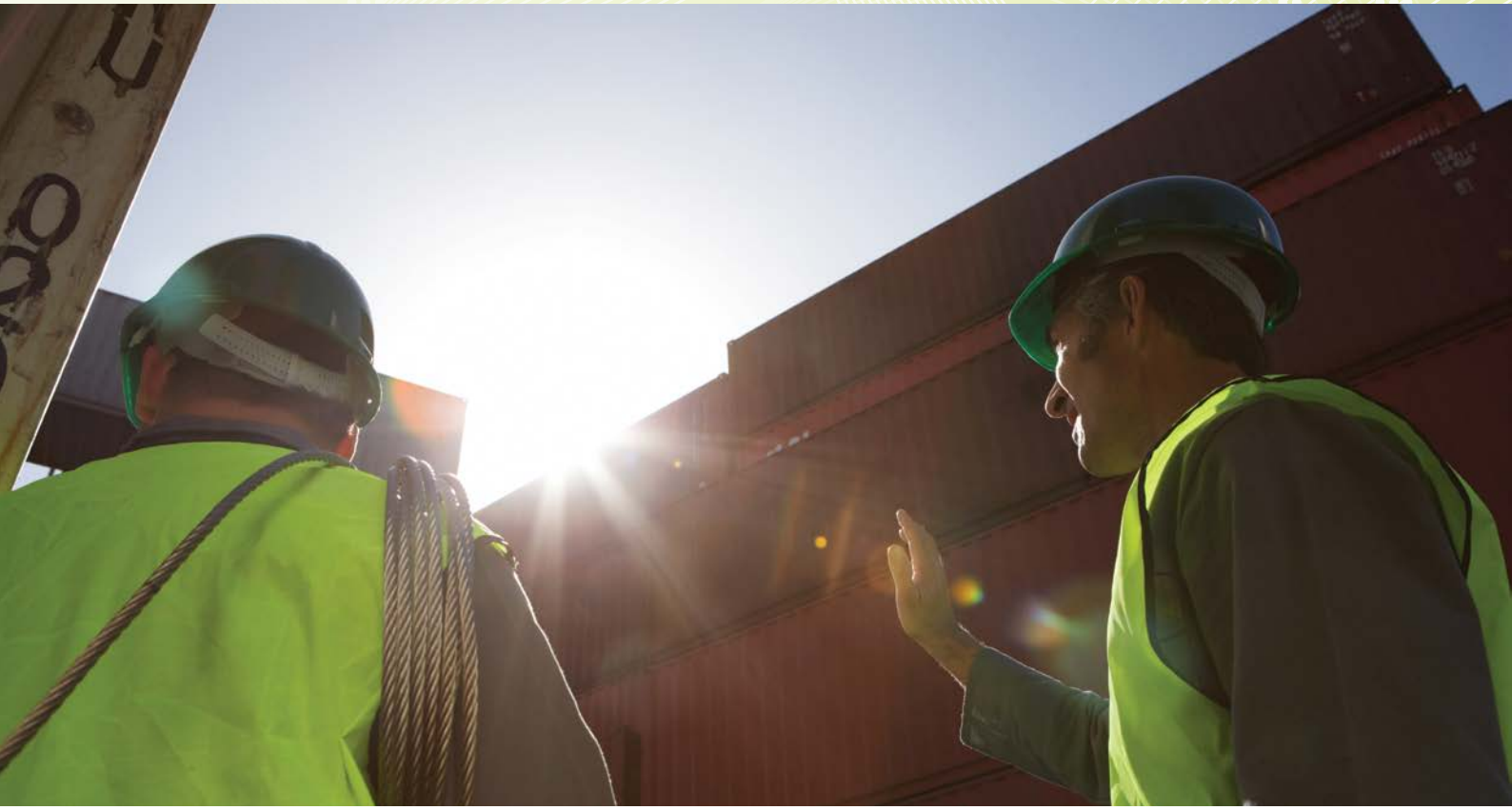


PURPOSE

Drawing on research by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) and other government and industry sources, this report distils analysis and forecasting to outline the most significant impacts on the infrastructure and transport sector through to 2030 including:

- economic conditions, trends in the global economy and the outlook for the Australian economy;
- infrastructure investment trends;
- Australia's transition, including industry, demographic, and spatial changes;
- modal trends in the movement of goods and people;
- regulatory trends for the portfolio; and
- other significant challenges and opportunities including energy efficiency, climate change and technological innovation.

The Australian infrastructure and transport sector has been through a period of transition with infrastructure investments and regulatory reforms, but the sector will face significant challenges in the future. The role that government plays in the long-term responses to these challenges will have a clear impact on national prosperity.

(This report does not set out policy issues, priorities or Government commitments.)

Despite strong economic growth, the Australian economy faces challenges and opportunities.

ECONOMIC CONDITIONS

Global Economy

International economies are slowly recovering from the Global Financial Crisis (GFC), although moderated by regional uncertainties. International financial conditions have stabilised and equity prices have risen globally. Capital flows to emerging markets have also remained strong. However, the International Monetary Fund considers that this upturn will be more gradual than that following past downturns.

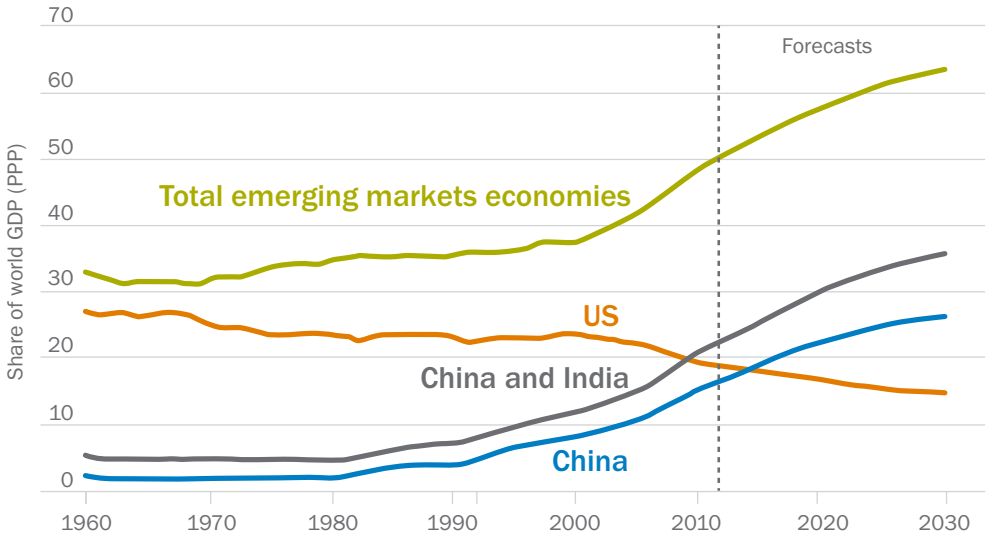
In the past 20 years, there has been a transformative shift in the global economy. By 2025, the Asia–Pacific region will account for almost half the world's economic output. In the last 20 years China and India have almost tripled their share of the global economy. China is Australia's largest merchandise trading partner and some predict that it could overtake the United States (US) as the world's largest economy as soon as 2016,[1] although more recent assessments have put this transition some further years away.

> *In the last 20 years China and India almost tripled their share of the global economy.*

Many of the risks to Australia's economic outlook are external, particularly volatility in the world economy and its potential negative impacts on emerging economies like China and India. Economic resilience in the Asia–Pacific region has improved over the last decade, although economic interdependence remains a risk.

The US, United Kingdom and Japan remain Australia's largest foreign direct investors — investing $271.9 billion in Australia in 2012.[2]

Global economic transformative shift



Source: The Conference Board Total Economy Database, Maddison (2010), IMF World Economic Outlook Database and Treasury

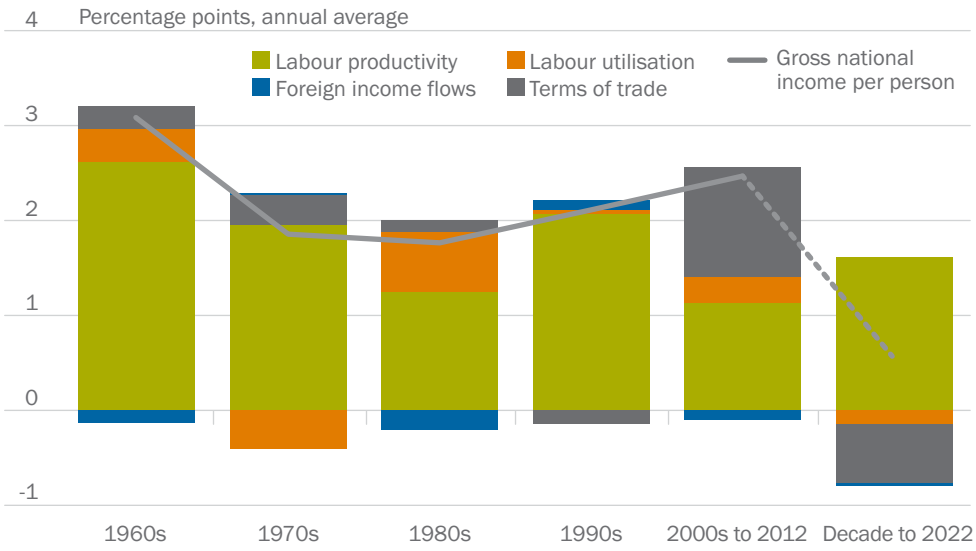
Australian Economy

The medium-term outlook for the Australian economy is positive. Trade remains Australia's key economic strength — around 40 per cent of Gross Domestic Product (GDP) in 2012. However, recent falls in commodity prices and Australia's terms of trade have impacted nominal GDP growth with a significant impact on expected tax receipts.[3]

Although Australian GDP is currently expected to continue to grow faster than every major advanced economy, the changing structure of the Australian workforce will see real economic growth slow to 2.7 per cent per year over the next forty years as the population ages.[4]

With negative terms of trade becoming the norm, average annual growth in income will be less than what Australians are used to.

Contributions to economic growth in average incomes



Source: Treasury calculations based on ABS Catalogue Numbers 5204.0, 6202.0 and unpublished ABS data

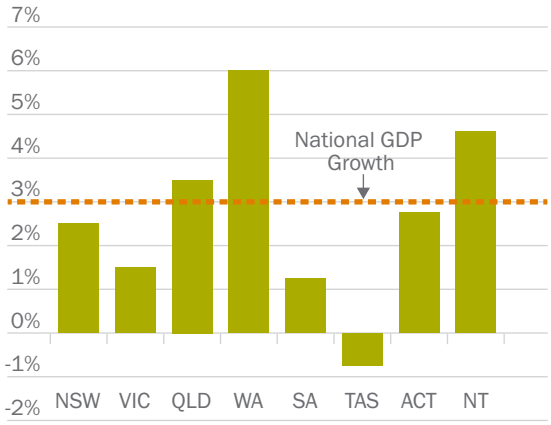
Over the past decade, multifactor productivity growth has slowed to 1.4 per cent, compared with 2.1 per cent in the 1990s. Productivity growth has historically been the primary driver of income growth. Domestic investments in infrastructure can help enable productivity benefits within the sector and more broadly, but these investments will have minimal impact as stand-alone policies.[5]

States and territories are projected to face funding difficulties and have pared back budgets, making public funding of large infrastructure projects more difficult — particularly in light of increasing health, education and welfare costs.

Between 1989–90 and 2011–12, transport sector total factor productivity growth averaged 1.3 per cent per annum, compared to 0.9 per cent per annum for the national market sector. However, over the last decade, transport sector productivity growth has been slowing in line with the broader economy.[6]

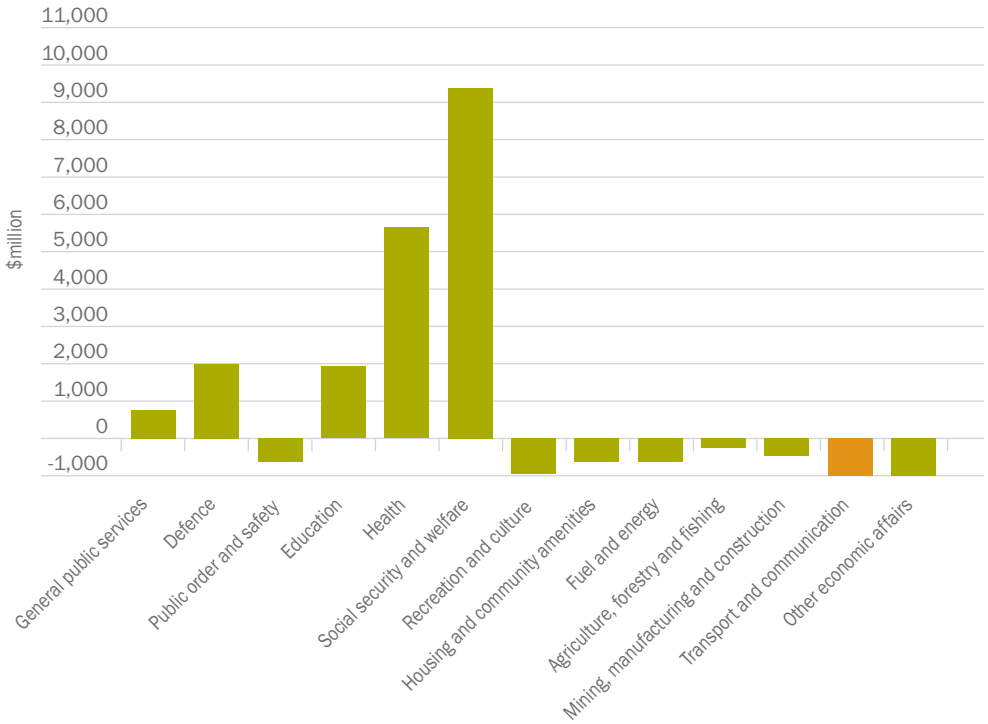
> *Productivity has slowed to 1.4 per cent compared to 2.1 per cent in the 1990s.*

Gross state product growth, 2012–13



Source: State Budget Papers 2013–14

Total real Government spending growth by function, 2013–14 to 2016–17



Source: The Australian Government, 2013, Budget Strategy and Outlook Budget Paper No. 1, Australian Government, Canberra

INFRASTRUCTURE INVESTMENT TRENDS

Australia's private and public infrastructure expenditure, as a percentage of GDP compares favourably to other OECD countries. While slipping during the GFC, the private sector is now contributing about 50 per cent of Australia's infrastructure investment.[7]

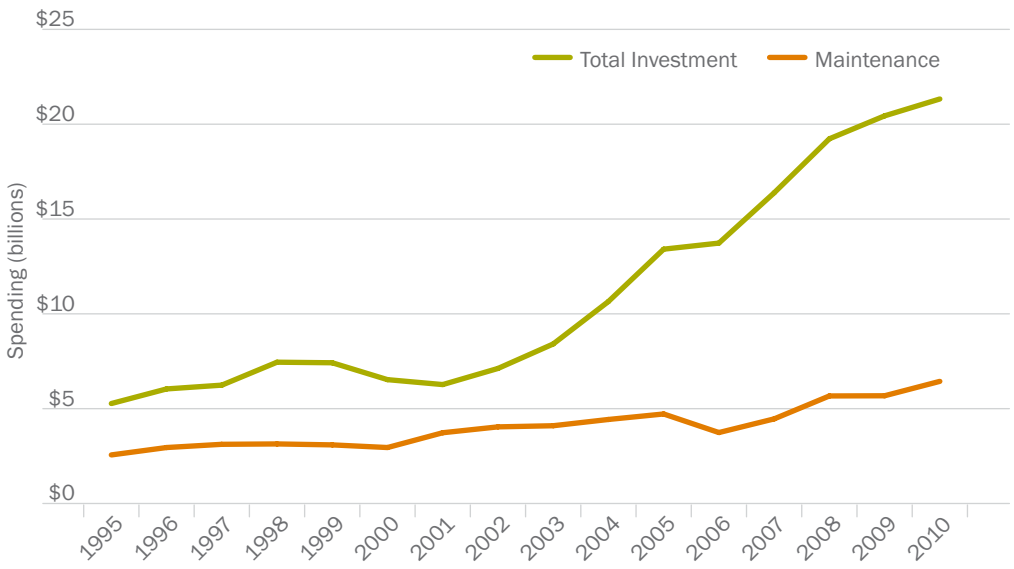
The ratio of maintenance to investment expenditure has been shifting. In part, this is due to construction costs in major cities being higher due to increasing urbanisation. For example, almost 90 per cent of New South Wales population growth over the last ten years has been in greater Sydney — creating pressures for infrastructure. There is also evidence that state and local government investment in maintenance is not currently optimised.

As Australia's economy transitions to a broader industry base, with less dependence on the resources sector, infrastructure construction employment is forecast to decline. The level of public infrastructure investment, particularly in a tightening fiscal environment, may directly affect employment rates.[8]

Historically, Australian governments have been responsible for funding much of the infrastructure and transport task. Reforms in the 1980s and 1990s drove productivity improvements and price benefits for service users.

Privatisation of government (predominantly state) assets has raised significant revenue — for example, in April 2013 the 99-year lease of Port Botany and Port Kembla raised $5.07 billion.

Australian public spending on transport infrastructure maintenance and investment



Source: OECD Dataset: Transport infrastructure investment and maintenance spending

AUSTRALIA IN TRANSITION

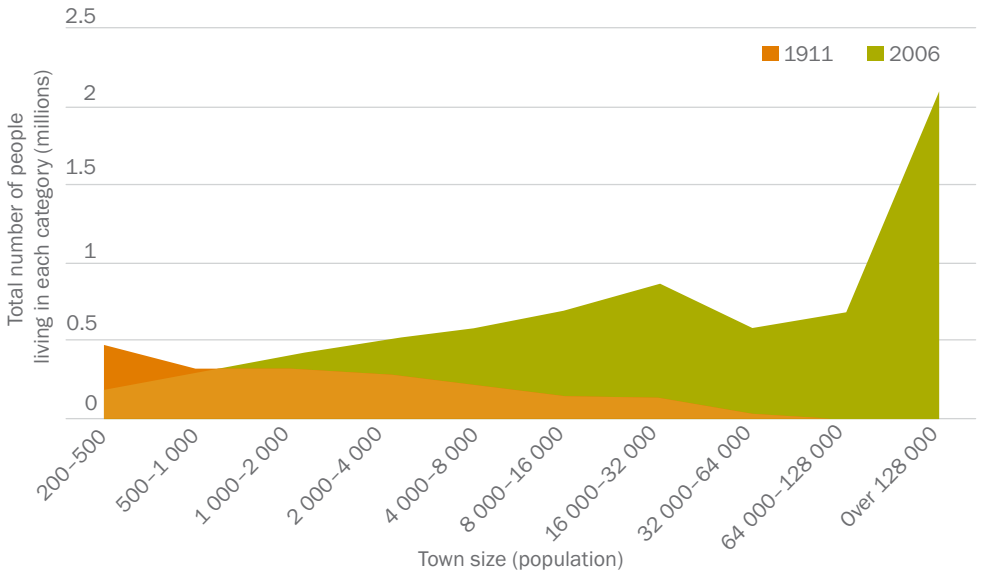
With the Australian economy in a period of transition, there has been considerable structural adjustment across the economy.

Commodities continue to be important to the economy, generating export earnings of nearly $38 billion[9] from agricultural sector exports, and $177 billion[10] for minerals and energy in 2011–12. Primary industries, concentrated in regional Australia, make up over two-thirds of our exports. Global food demand is expected to rise by around 35 per cent by 2025 from 2007 levels, with most demand coming from Asia. Such growth will place Australia's freight network under increasing pressure to meet demand.[11]

Today there are five working age people for every person aged over 65 years, by 2050 it will be only 2.5.

By 2030, Australia's population will grow from 23 million to almost 30 million — with a very different demographic profile and spatial distribution to today.[12] Today there are five working age people for every person aged over 65 years, by 2050 it will be only 2.7. This will put pressure on budgets as government revenues fall relative to expenditure. Immigration programs will have only a marginal impact on the ageing population profile.

Figure 8: Distribution of regional population by town size grouping, 1911–2006



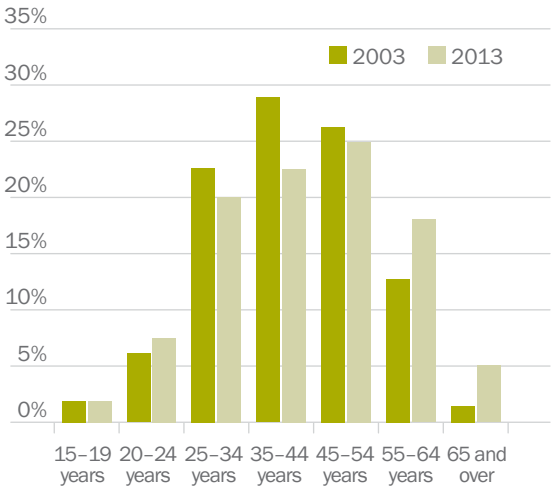
Source: BITRE Analysis of ABS Census Results

Spending on health, age-related pensions and aged care will rise from a quarter to almost half of government spending by 2049–50, further constraining governments' capacity to fund other more discretionary areas, including infrastructure.[13]

Transport currently has the second oldest industry workforce profile (behind agriculture, forestry and fishing) with the consequential risk of skills shortages constraining productivity — sometimes offset by technologies that reduce the number of staff required (for example aircraft maintenance).

In 2010–11, transport and storage recorded the highest serious workplace health and safety incidence rate, nearly twice the average across all industries.

Transport, postal and warehousing – employed persons by age group, 2003 and 2013



Source: Based on ABS Labour Force, Australia, Cat no: 6291.0.55.003

MODAL TRENDS

Road

Over 70 per cent of all domestic passenger movements within Australia occur on roads. Driving remains by far the preferred means of transport within cities and for trips up to 400 kilometres. This when combined with increasing population in larger centres, is resulting in suboptimal energy efficiency and a congestion cost to the economy of $15 billion. Based on current trends, congestion will increase, imposing burdens on those living in Australian cities, those seeking to move goods through Australian cities and to the national economy. Particular constraints on freeways and highways will emerge, constraining productivity within cities and regions.[14]

Over 80 per cent of non-bulk domestic freight is carried on roads, dominating freight movements between Sydney, Melbourne, Brisbane and Adelaide.

Truck traffic is predicted to increase by 50 per cent to 2030. Governments face challenges gaining community acceptance of larger heavy vehicles and funding road infrastructure improvements to service a larger freight task and growing light commercial vehicle task. The volatility of oil prices will continue to impact sector competitiveness.

Rail

Rail dominates freight movements between Perth and the eastern states. Rail freight, mainly supporting commodity exports, is expected to jump by 90 per cent by 2030 putting particular pressure on cities on the eastern seaboard.[15]

Rail traffic on the Brisbane, Sydney and Melbourne route faces capacity constraints around Sydney with dedicated rail freight lines to the south and the north required to deliver a larger modal share to rail. Deloitte Access Economics estimates that a modest increase in rail's modal share of the freight task would result in the current $92 million in benefits derived from the north-south corridor growing to $227 million by 2030.[16]

At present the only route between Melbourne and Brisbane is through Sydney. An inland route has the potential to provide a rail freight option up to 7 hours faster and 170 kilometres shorter, making rail a more competitive transport option relative to road.[17]

The per capita freight task and volume of container traffic is increasing substantially proportional to the overall growth rate of the economy. Passenger rail is generally given priority over freight services in cities. Rail makes up a very small portion of passenger kilometres, but it has been growing faster than either road or bus transport.[18]

Aviation

Aviation contributes over $32 billion to Australia's GDP and employs 149,000 people directly and a further 500,000 indirectly.

While carrying only 0.1 per cent of Australia's trade, aviation freight makes up nearly 21 per cent of trade by value — over 750,000 tonnes of high-value and time sensitive freight, worth over $110 billion during 2011–12. Over the last twenty years the volume of freight flown into and out of Australia has more than doubled and is expected to increase by a further 120 per cent by 2030.[19]

Continued passenger growth at major airports is already testing the capacity of airport infrastructure, particularly during peak periods. International air travel will grow strongly to 2030, with both domestic and international passenger movements through capital cities almost doubling. Substantial investments by airport operators will be required to meet this demand.

Increasing demands from the resources sector has also put significant pressure on some regional airports and their infrastructure. Conversely, some regional airport usage is declining as population changes take place.

Maritime

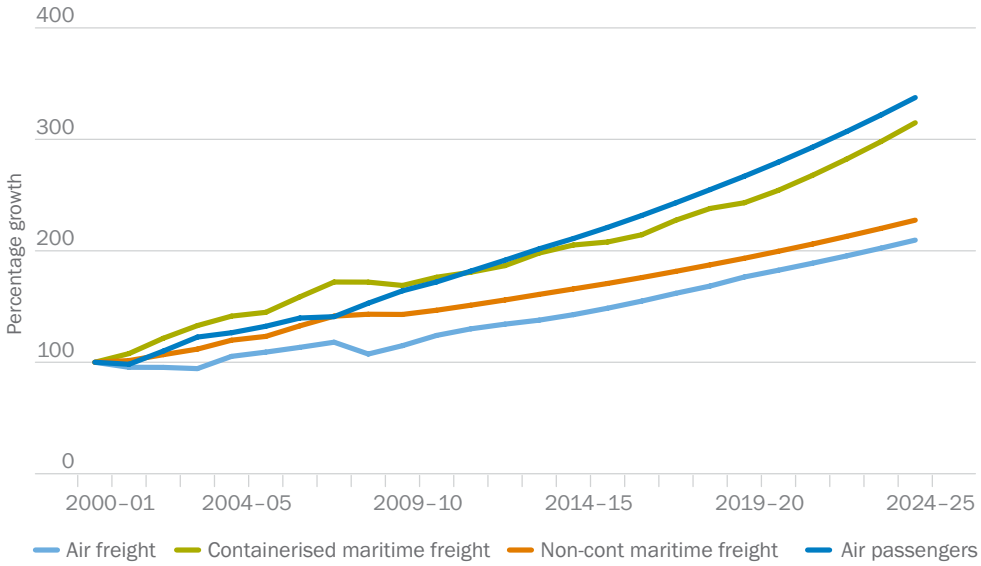
Maritime activity grew strongly in the decade to 2011–12. Bulk port throughput grew by more than 75 per cent and container trade by two thirds. Concurrent with, and facilitating, this growth has been the trend to much larger bulk and container vessels.

To 2030, the bulk freight task will increase by 70 per cent and national container throughput is projected to double. Australia's containerised international exports will almost double by 2030 due to strong demand from China and South East Asia. At the same time Australia's strong demand for consumer goods imports will grow broadly in line with the economy, increasing freight imports.[20]

Total coastal freight has slightly declined in the same period to 2011–12 — from 106.3 million tonnes in 2002–03 compared to 99.1 million tonnes in 2011–12 (an approximate decline of 0.7 per cent per annum).[21]

The number of cruise vessels operating in Australia continues to increase. In the four years to 2012, Australian cruise passenger numbers more than doubled, with New South Wales and Queensland accounting for two thirds of Australian cruise passengers.[22]

Growth in freight and passenger tasks



Source: Based on Bureau of Infrastructure, Transport and Regional Economics data, analysis and projection

> *Private road vehicles currently account for about 90 per cent of the motorised passenger task in Australian cities.*

Public transport

Public transport use has been increasing in all capital cities since 2004. Currently, one in six people in the capital cities uses mass transit for daily commuting.[23] To 2030, the public transport task will grow by 30 per cent — primarily through population growth rather than a significant shift in the proportion of people using public transport.[24]

Public transport is not only confined to capital cities. A lack of reliable, efficient and affordable public transport options and limited services is identified in 48 of Australia's 55 Regional Development Plans. Poor or non-existent public transport within and between cities can exacerbate social isolation and limit access to health care, education and services in rural and remote communities.[25]

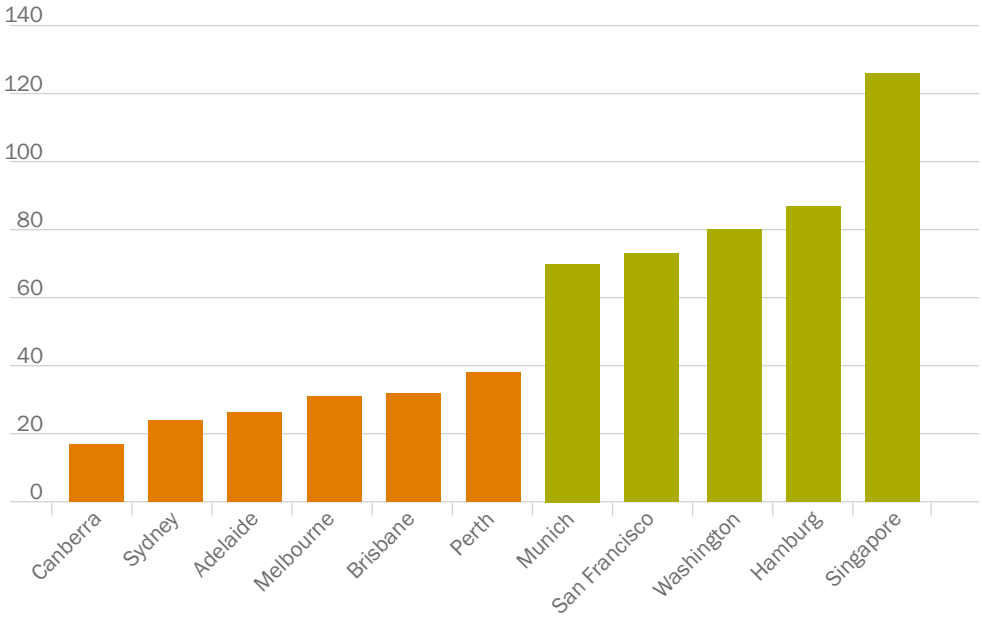
Fare recovery in Australian urban mass transit systems is around 25–30 per cent, well below international best practice, with outer suburban services less than ten per cent.[26] This raises questions about accessibility versus cost recovery, the sustainability of current financial structures and the scope for further public investment in mass transport infrastructure and services.

Active travel

While Australian cities have been planned predominantly for private motor vehicle travel, economic analysis of infrastructure projects relating to walking or cycling infrastructure has shown benefits via decongestion, health, reduced vehicle operating costs, infrastructure savings, and environmental benefits.

In 2011, 5.4 per cent of workers used 'active' travel as their only method of journey to work.[27]

Percentage of public transport costs recovered through user payments



Source: Hale, C, 2011, Evolving Futures for Australian and International Passenger Rail.
Personal communication with the Department of Planning, Transport and Infrastructure South Australia

REGULATORY TRENDS

As the movement of people and goods increases in a dynamic international environment and national transport system, so to does the need for effective regulation. The Minister for Infrastructure and Regional Development currently administers 91 Acts, most aimed at contributing to the safety and security of individuals, communities and assets. Additionally, the sector is subject to a range of broader economic regulatory settings.

Economic Reform

Significant regulatory reforms dating back to the 1970s have helped drive widespread changes in the transport industry. For example, road train mass limits varied significantly across the different jurisdictions prior to the adoption of uniform national mass limits. Since 1971, general mass limits for road trains in Western Australia and the Northern Territory have increased by around 9 per cent, compared with 60 per cent in Queensland and South Australia. These regulatory changes enabled the growing freight task to be catered for with half the number of vehicles that would have otherwise been required.[28]

2012 was the safest year in aviation since 1945.

Safety

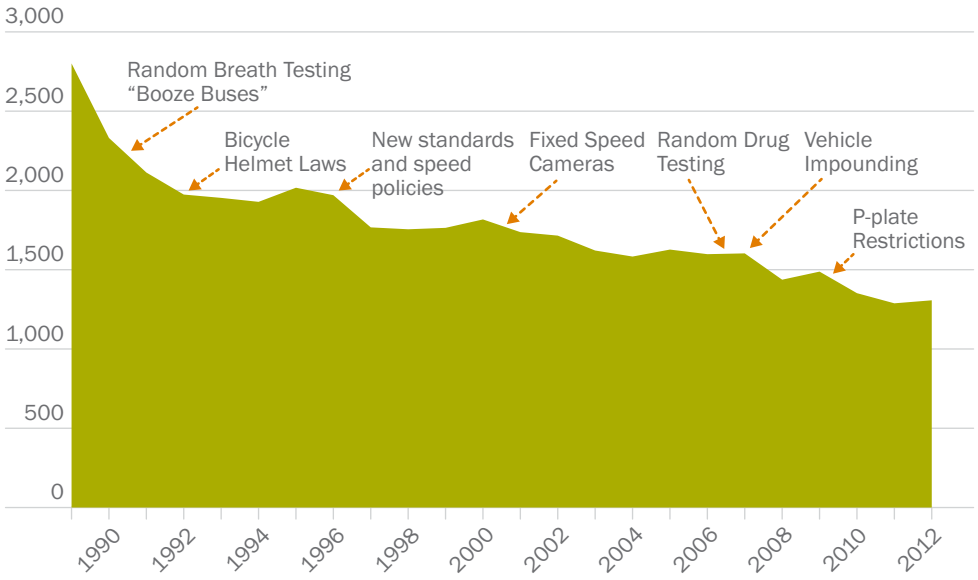
Transport fatality rates have significantly improved and are expected to continue to do so as government interventions, technology, and industry practices target improvements.

2012 was the safest year in international aviation since 1945. However, the regulatory task is increasingly complex across all modes as business models and technology change more rapidly. Balancing safety investigations with public expectations assurance and the increasing demand for efficiency is a growing challenge for design and implementation or regulation.

The annual cost to the Australian economy of road traffic crashes is estimated to be $27 billion.[29] Currently, Australia is ranked the fourteenth safest country internationally for the number of road deaths per 10,000 vehicles and tenth per billion vehicles-kilometres.[30]

Rail has the lowest fatality rate per hundred thousand people (0.15), followed by aviation (0.17), maritime (0.24). Road fatalities are 5.70 per hundred thousand passengers. Similarly, the serious injury rate per hundred thousand people varies with aviation (0.09), rail (0.41) and maritime (0.45) being substantially lower than road (155.43).[31]

Australian road fatalities by year 1989–2012

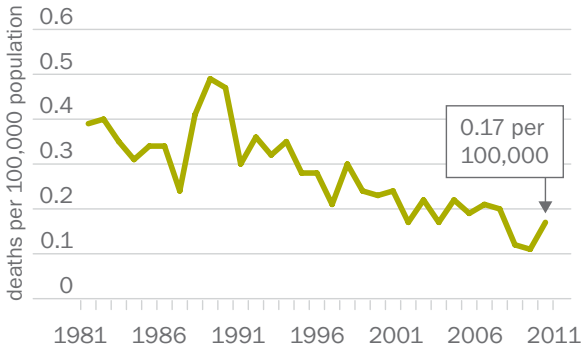


Source: Australian Road Deaths Database

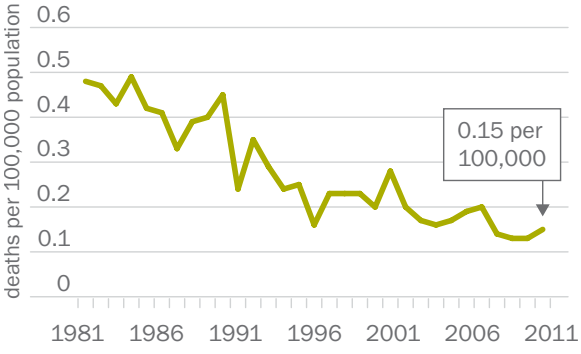
The incidence of fatal road crashes on a population basis is substantially higher in outer regional and remote areas. Heavy vehicle risk exposure and incidence varies across different parts of the network.

Over the last decade, the emergence of new in-car technologies has been a growing factor in road safety incidents (due to driver distraction).[32] There is increasing evidence of distraction from new technologies for pedestrians and public transport users. Dealing with such factors will be critical in government and industry efforts to maintain the overall improvement in road safety in the decades ahead.[33]

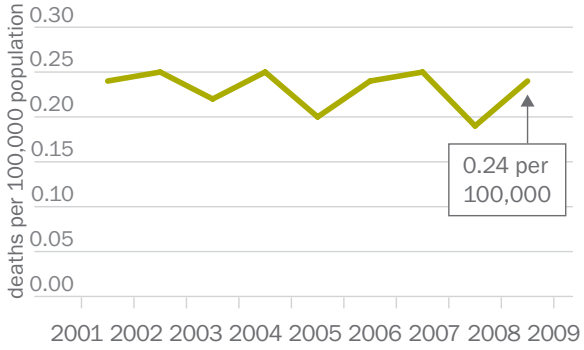
Fatality rates – aviation



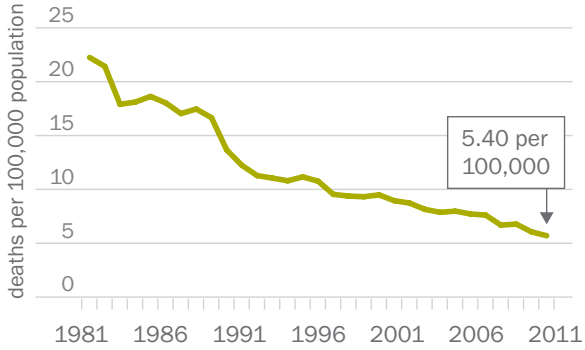
Fatality rates – rail



Fatality rates – maritime



Fatality rates – road



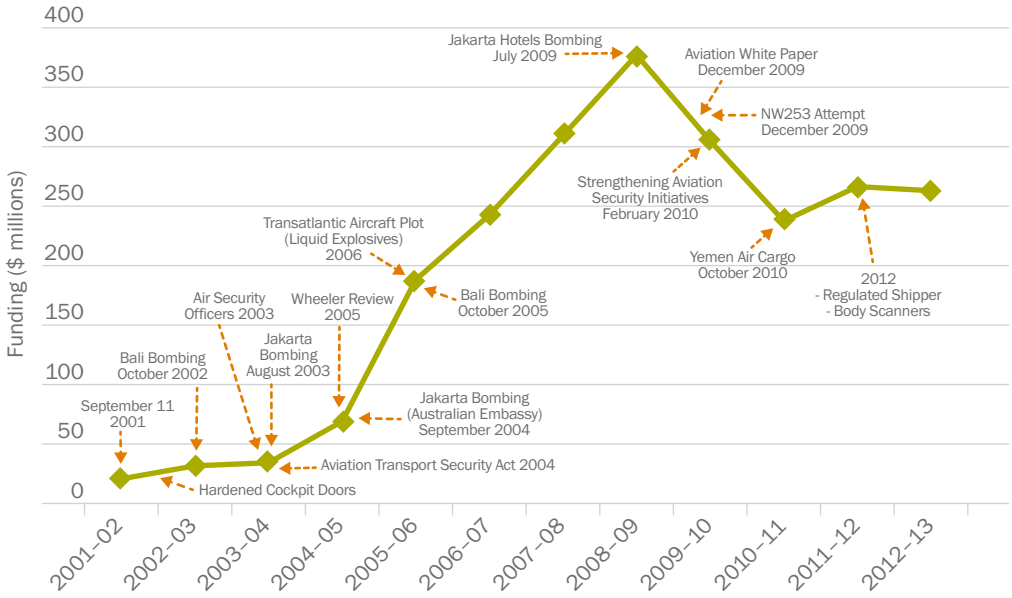
Source: Australian Transport Statistics Yearbook, BITRE (2012)

Security

The transport sector, internationally and nationally, remains a target of terrorism. Policy responses have been incident-based, intended to ensure known risks within the system are managed.

Security threats will remain for the foreseeable future. Like safety, the range of compliance activities and the tools required to ensure the system remains protected has grown. This is expected to rise as new cargo security regimes are introduced. As volumes and variances increase, maintaining a risk-based regime which focuses on higher risks becomes increasingly challenging.

Total Australian Government aviation security funding commitments



Note: Estimate based on total Government aviation security funding commitments obtained from Budget papers. It includes funding commitments for programs of the Office of Transport Security within the Department of Infrastructure and Regional Development, as well as aviation policing and law enforcement, and intelligence arrangements.

OTHER CHALLENGES AND OPPORTUNITIES

Energy and emissions

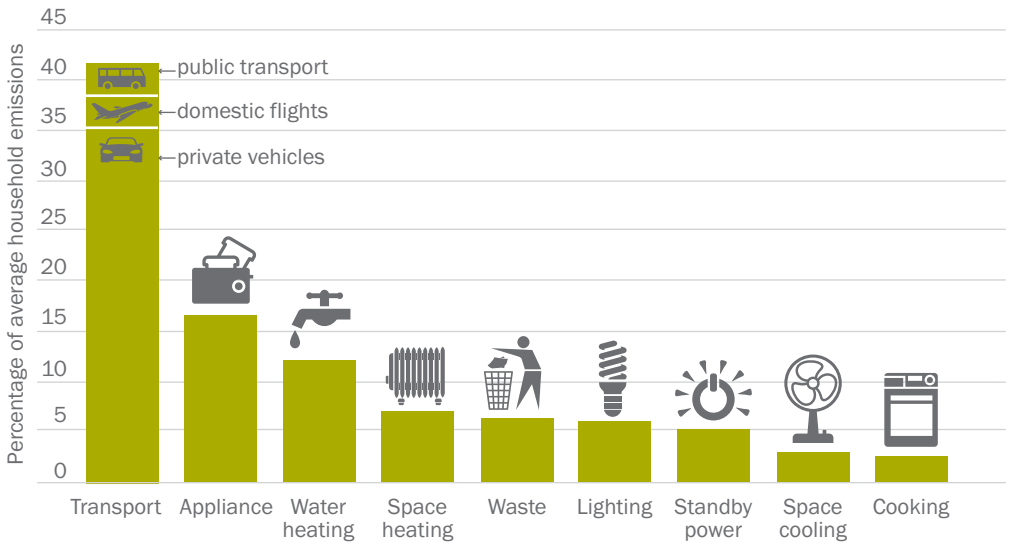
Australian transport fuel demand is rising, increasing almost 20 per cent over the past 11 years with a further 15 per cent predicted by 2020. Australia is highly dependent on crude oil-based energy and is likely to be increasingly reliant on importing oil — projected to only be about 20 per cent self-sufficient for transport fuels by 2030.

Internationally, oil prices are less predictable with volatility caused by geopolitical instability and changes in the international economy. Estimates for the long-term average oil price vary considerably, ranging from $100 to $250 a barrel by 2030 (in 2009 prices).[34] Growing demand from China and India is likely to drive prices higher.

Transport activity accounts for over 38 per cent of the nation's energy use and 73 per cent of liquid fuels. Domestic transport emissions are projected to continue to grow by an average of 1.3 per cent per annum through to 2030. Civil aviation, commercial road vehicles and rail will have particularly strong growth, although passenger cars will continue to be the single largest contributor (around 47 per cent of all domestic transport emissions) to 2020 – despite reduction in emissions per kilometre travelled through technological advances.

Achieving improved energy efficiency in transport will help mitigate costs to industry and consumers, reduce pollution and decrease oil import demand.

Sources of household emissions



Source: www.cleanenergyfuture.gov.au

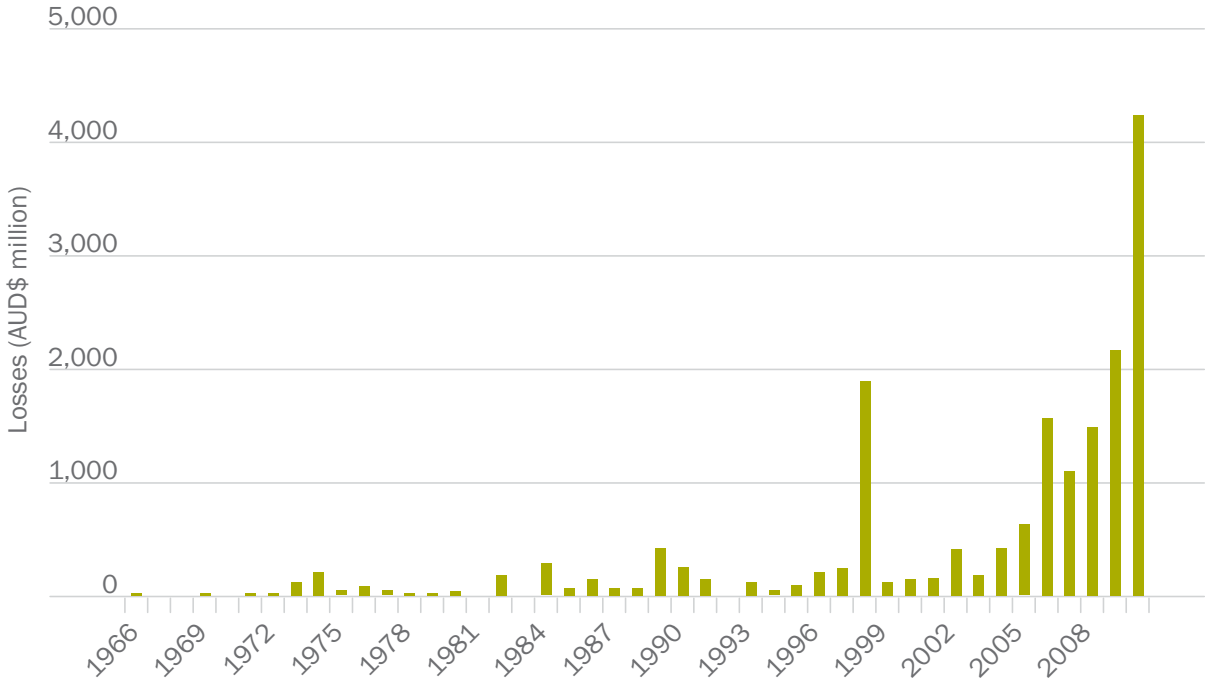
Australia is projected to only be about 20 per cent self-sufficient for transport fuels by 2030.

Climate impacts

Changing weather patterns have the potential to negatively impact infrastructure assets.[35]

Changes in climate and extreme weather events not only bring direct damage to infrastructure assets, but can also cause operational shortfalls and a loss of profits and revenue. Changing weather patterns and increasing climate risks are projected to impact Australia's infrastructure, costing $9 billion by 2020, and $40 billion by 2050.[36]

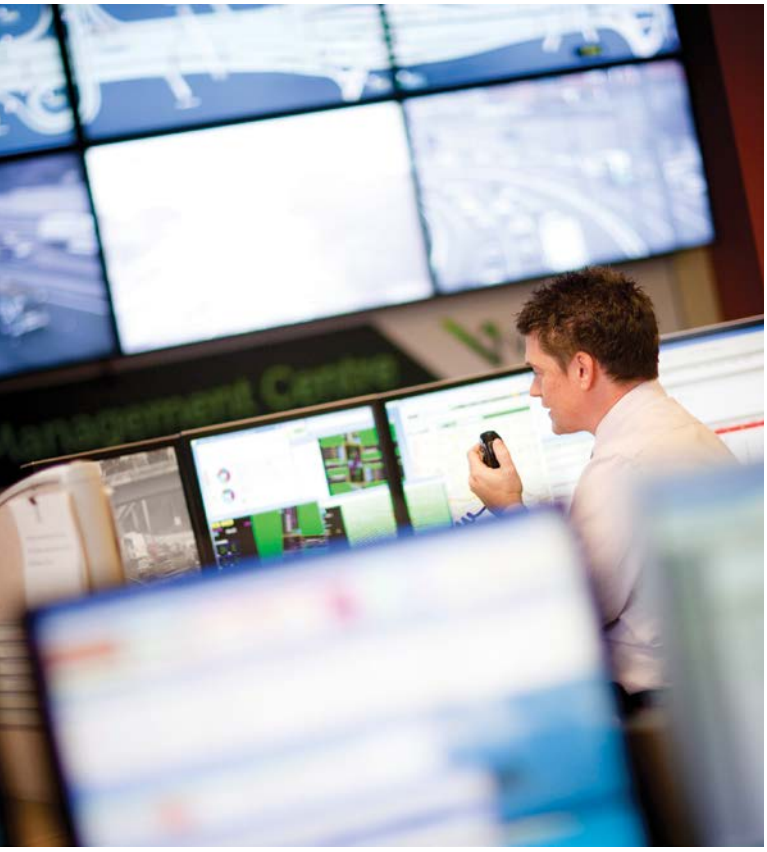
Annual aggregate insured losses for weather-related events in the disaster list



Source: Crompton, R 2011 Normalising the Insurance Council of Australia Natural Disaster Event List: 1967–2011, A report prepared by Risk Frontiers for the Insurance Council of Australia, Risk Frontiers, Sydney.

Technology

Technological innovation can improve efficiency, productivity, safety, security, and environmental outcomes in transport – but can also have unpredictable, disruptive consequences. Increased access to data is already allowing for more complex analysis and collaboration within both government and the private sector. On-board systems are emerging as a source of significant safety and productivity benefits. In rail, the introduction of automatic train management systems can improve the efficiency of existing rail infrastructure. Google's driverless cars have already clocked up tens of thousands kilometres worldwide, while Rio Tinto's driverless trucks have now moved more than 100 million tonnes of earth in the Pilbara.

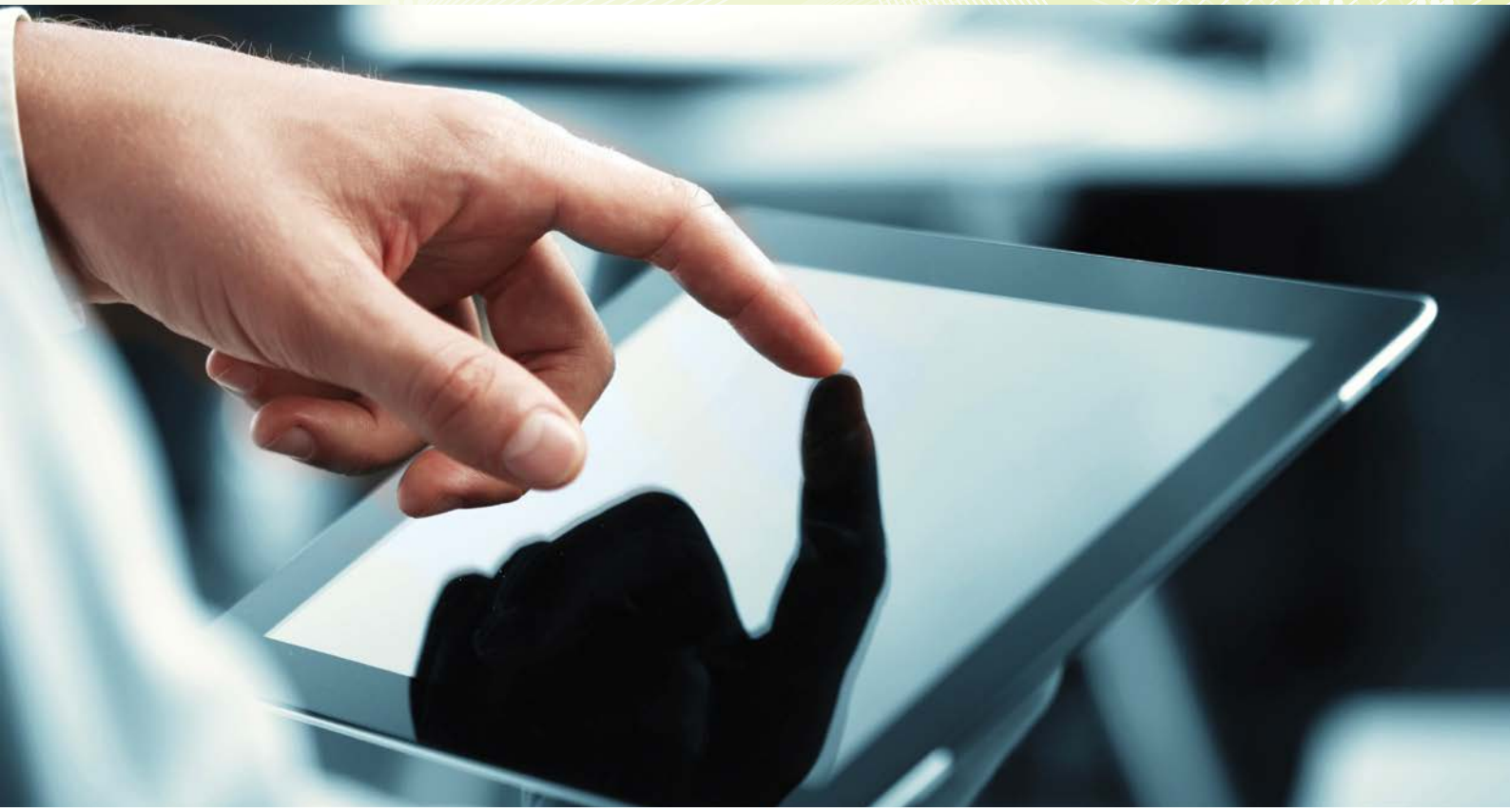


Driverless trucks have now moved more than 100 million tonnes of earth in the Pilbara.

Smart infrastructure in the form of digital technologies will provide opportunities to improve productivity and contribute to sustainability. For example, road-mounted camera and sensor systems enable better infrastructure management by detecting congestion, collisions and road works, providing motorists with alerts and re-routing suggestions, reducing travel times, reducing fuel consumption and energy demand, and enabling better use of existing infrastructure. Environmental benefits can be derived from dynamic coordinated freeway ramp signals. For example, coordinated signals on Melbourne's Monash Freeway have saved 16,500 litres of petrol and a 40 tonne reduction in greenhouse gas emissions a day, as well as rerouting traffic, at a relatively low cost.

The OECD estimates that an average household with two adults and two teenage children had ten internet-connected devices in their home during 2012. The OECD projects this figure will rise to 25 devices in the home by 2017 and to 50 devices by 2022.[37]

The internet has changed the way we engage with transport: consumers now buy, book and choose seating preferences online. Information from Radio Frequency tags, remote sensors, barcodes, 2D scans and 'just in time' production, have all increased the pressure for the transport sector to respond to rich data regarding the movement of people and goods.



Research has shown that if ten per cent of Australian employees were to telework 50 per cent of the time, the total annual gains to the Australian economy would be around $1.4–$1.9 billion. By 2020–21 the workplace participation impacts of telework enabled through new high speed broadband infrastructure could grow the annual GDP by $3.2 billion, and create an additional 25,000 full-time jobs.[38]

Social shifts due to the increased use of the internet may also reduce some transport use, easing congestion and associated environmental impacts in urban areas.

CONCLUSION

As a critical enabler of economic growth, the efficiency and effectiveness of infrastructure and transport directly impacts Australia's future economic and individual prosperity. Our standard of living, international competitiveness, transport safety and security, and capacity to invest in infrastructure that meets future demands will be at risk without timely action.

Quality investment decision-making has become an even greater imperative. Equally, there are opportunities for further reform and productivity improvement across the infrastructure and transport sector. The evidence is clear that Australians are already reaping the considerable benefits of the reforms from previous decades — including safer and cheaper travel, greater diversity of transport options, a more efficient and productive freight sector (with lower prices for consumers) and better quality infrastructure than ever before.

Continued monitoring and analysis of trends impacting the portfolio is vital in helping governments ensure that the right policy settings, initiatives and programs are in place to manage demand, capitalise on opportunities and strengthen Australia's international competitiveness.

The efficiency and effectiveness of infrastructure and transport directly impacts Australia's future economic and individual prosperity.

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Australia's infrastructure, transport and regions have benefitted from significant reforms and investment. Some important reforms to national regulation and investment have been put in place over the past few decades ensuring resources and reforms are well targeted in the interests of national productivity. The challenge for the Australian Government within a tightened fiscal environment is to ensure this strong trajectory continues.

The National Investment Challenge

Australia's current economic strength is at risk of decline, threatening living standards at a time when significant new and upgraded infrastructure will be needed to deal with future demand. Over the past decade, multifactor productivity growth has slowed to 1.4 per cent, compared with 2.1 per cent in the 1990s. Productivity growth has historically been the primary driver of income growth. Domestic investments in infrastructure can help enable productivity benefits within the transport sector and more broadly, within the national economy.

As economic power shifts toward Asia, Australian goods and services face increased competition from rapidly developing low-wage economies. In addition, our tax base is declining as the population ages. Today there are five working age people for every person aged over 65 years, by 2050 it will be only 2.7. This will put pressure on budgets as government revenues fall relative to expenditure. Immigration programmes will have only a marginal impact on the ageing population profile.

This and other structural changes in Australia's population, demographic settlement patterns and economic behaviour, are placing additional pressure on our economy—including the infrastructure and transport sectors. We estimate that the transport task—freight and passengers—is likely to double by 2030. This will create additional pressure at ports and airports, on highways between regions, and in cities. Avoidable urban congestion costs are already estimated at $15 billion per annum, a cost that would increase as a result of growing demand without intervention.

States and territories are projected to face funding difficulties and have pared back budgets, making public funding of large infrastructure projects more difficult. In light of increasing health, education and welfare costs, some predictions are that all state budgets will not be able to support health funding demands as early as 2046. As such, getting the settings right *now* to ensure Australia has the infrastructure it will need to remain a competitive economy in the future is crucial.

Despite these challenges, Australia's private and public infrastructure expenditure, as a percentage of GDP compares favourably to other OECD countries. While slipping during the GFC, the private sector is now contributing about 50 per cent of Australia's infrastructure investment. We continue to work with the private sector and central agencies across jurisdictions to encourage innovative funding and financing of Australia's infrastructure projects.

Concurrently, the ratio of maintenance to investment expenditure has been shifting. In part, this is due to construction costs in major cities being higher due to increasing urbanisation. For example, almost 90 per cent of population growth in New South Wales over the last ten years has been in greater Sydney—creating pressures for infrastructure. There is also evidence that state and local government investment in maintenance is not currently optimised, creating a risk that infrastructure investment (including maintenance) will need to be dramatically increased at a time when the nation needs it most—at a time when we could be least able to afford it.

A key issue for this portfolio is ensuring regulatory settings are also appropriate. This includes providing regulatory incentives for improved safety outcomes as well as incentives for investment. We perform a significant role for taxpayers in transport economic regulation as well as safety and

security—these are public interest roles for which the Australian Government is well regarded around the world. Many of our regulatory models are hybrids suited to the operating environment of the Australian economy and federation and are regarded as world's best practice. In most cases the private sector already plays a substantial role in these functions and relies on the Commonwealth for statutory regulatory settings, national and international leadership and harmonisation across jurisdictions. A key component of any deregulation agenda must therefore be the level of risk the Australian Government and the broader community are willing to tolerate.

Attachment A outlines the pressures facing the portfolio—*Trends*. Given the broader issues facing Australia the portfolio has given much thought on where the Commonwealth will be best placed to make a difference in the long term, and as such welcome the opportunity for the Commission to recalibrate the Government's role.

Roles and responsibilities between the Commonwealth and the states and territories

The functions and activities of the Commonwealth have evolved over time and include a range of matters for which the Commonwealth does not have explicit legislative powers in the Constitution. This is also true of the Infrastructure and Regional Development portfolio. The absence of an explicit power in the Constitution, however, does not mean that the Commonwealth does not have a legitimate role or that there are not substantial benefits conferred by the Commonwealth's involvement. This portfolio's influence in matters that are not expressly articulated in the Constitution owe as much to its concern for the safety, security and efficient operation of the national economy as it does to the weight of its investments.

The Constitution provides for the Commonwealth to legislate in relation to maritime navigation (s51(vii) - lighthouses, lightships, beacons and buoys) as well as the control, acquisition and construction of railways [s51(xxxii - xxxiv)]. All States have subsequently passed a range of statutes to referring matters to the Commonwealth under section 51(xxxvii), including in relation to air navigation and transport. Perhaps by virtue of the era in which the Constitution was drafted the Commonwealth has no explicit powers in relation to the planning and construction of roads. There is little doubt, however, that the national economy is best served by a safe and efficient national highway network and that operators and users of that network should be subject to laws and regulations that are uniform across jurisdictional boundaries.

This portfolio also executes the Commonwealth's constitutional responsibility for Australia's territories by providing the Government with strategic policy advice in relation to the Commonwealth's interests in the self-governing territories. The Commonwealth administers Ashmore and Cartier Islands, Christmas Island, the Cocos (Keeling) Islands, the Coral Sea Islands, Jervis Bay, and Norfolk Island as territories. The Commonwealth has no explicit powers in relation to local government and regional development.

I consider that central to the portfolio's strategic directions is setting out a national reform agenda and clarifying roles and relationships to better anticipate and meet the needs of the future. A shift in our national commitment to investment reform and relationships with the states and territories is required, and changing economic conditions provide an impetus for this shift. This will need to be supported by more effective investment planning and commitments to productivity in regulatory reforms in Commonwealth/State relations.

Maintenance

Investment
The Commonwealth will increasingly need to be prepared to invest in maintenance of Australia's road network. Australia's future infrastructure maintenance task is set to become increasingly challenging in the face of recent capital works programmes, the projected growth of both the passenger and freight transport tasks, spatial and demographic changes, increasing stakeholder expectations and budgetary pressures. In addition, tight budgets are severely restricting maintenance funding by all three levels of government with states contributing less for their own roads and federal and state governments together giving less to local governments.

Infrastructure is long lived, with a large proportion of paved roads in Australia built in the 1950s and 1960s. However, inadequate maintenance activities over the life cycle of infrastructure assets can impact functionality, return on investment and asset utilisation. Failure to optimise infrastructure investment through timely maintenance will lead to higher management and maintenance costs over time while reducing the capacity, reliability, safety and efficiency of our nation's assets.

Over the last decade, Australian public and private transport infrastructure spending has increased considerably, in part due to the escalation of construction costs associated with complex urban projects and an overall increase in capital works projects to develop new infrastructure assets. While this surge will not immediately require a relative increase in maintenance spending, it will result in future maintenance requirements.

Although a major factor, routine maintenance is not dictated purely by time but contingent on a number of localised factors including construction materials and environmental conditions such as weather events (flood) and soil attributes. Ultimately, the addition of new infrastructure assets will result in a much larger pool of assets requiring maintenance, increasing the risk that Australia's assets—collectively—will not be able to operate at their optimum level. Considering these capital investments were developed with the goal to increasing productivity, mobility and safety, it is critical that maintenance is completed on time, as neglect could seriously undermine these objectives.

Key issues associated with maintaining road infrastructure are:

- Compressed maintenance schedules due to large amounts of infrastructure assets being constructed around the same time;
- The correlation between underspending on maintenance and the reduction in asset lives and the rise of a maintenance backlog; and
- Damage from extreme weather events and localised environmental impacts accelerating the aging process.

It is therefore critical to determine when large maintenance events are scheduled to occur and the appropriate maintenance spend to ensure that maintenance records aren't neglected. This will need to take into consideration that our required maintenance spend may not be uniform over the years and may be influenced by factors outside of our control like extreme weather—these factors do not lend themselves to effective budgetary planning at all levels of government.

Commonwealth, state and territory roles and responsibilities
The Commonwealth has a long standing role in providing support to states for the development of large infrastructure projects through grants and payments, with the states procuring and delivering the assets. As a result, state governments have always, and continue to maintain ownership of the National Land Transport Network, with the Commonwealth providing some ongoing assistance through maintenance funding. Provision of this funding is conditional and requires that the states

maintain the network and supply agreed data on condition, usage and maintenance expenditure. Currently the Australian Government requires bi-annual performance reporting—to establish funding levels and to verify that spending is achieving maintenance to acceptable standards. Funding levels for each state and territory are determined based on this information using three factors: lane kilometres, total vehicle kilometres and heavy vehicle usage. There are a number of issues with this formula:

- Highway lengths are altered during duplication and construction activities. Constant manipulation of road lengths makes it difficult to ascertain appropriate yearly figures;
- The cyclical nature of maintenance needs means that the annual needs for individual jurisdictions will vary with the distribution of pavement ages;
- The climate in which the infrastructure is built is a key factor as pavements deteriorate faster in wetter climates, with the combination of water and heavy vehicles being particularly damaging;
- The capital–maintenance trade-off means that investment in stronger pavements, results in less maintenance in the future. Concrete pavements are the extreme example of this. Some jurisdictions have built stronger pavements in the past, resulting in lower maintenance requirements for these assets; and
- The natural foundation plays a significant role as roads built on softer and less well-drained soils don't last as long as those built on dry, stable conditions.

Due to the constraints of this formula, the division of Commonwealth maintenance funding only differs slightly between the jurisdictions (lane kilometres) and with minor fluctuations occurring based on yearly traffic usage (total vehicle and heavy vehicle usage). Changes to the formula could result in more targeted maintenance investment based on *need* rather than the current set of standard parameters which lends itself towards a more even spread of Commonwealth funding between jurisdictions—which may not reflect actual needs.

Indexation is generally not applied to maintenance works, with routine maintenance and resealing being the only potential exceptions. This approach does ignore the potential for price increases for maintenance activities in general, with no indexation applied to annual maintenance between 2008-09 and 2013-14, and none proposed for the 2014-15 to 2018-19 investment phase. In contrast, capital works expenditure is indexed, usually factoring in between 4 per cent and 6 per cent escalation over the construction period. However, maintenance is short term and conducted on a yearly basis, while capital works are generally undertaken over many between 5 and 7 years—necessitating greater consideration for the impacts of inflation.

The Commonwealth applies different funding levels for maintenance across the different Commonwealth and state policy sectors. Prior to 2008 the Australian Government met 100 per cent of maintenance expenditure for the National Land Transport Network. Under changes made by the introduction of the Nation Building Program (National Land Transport) Act 2009, states and territories are now required to contribute, with the proportion of these contributions varying between jurisdictions based on their individual maintenance requirements. These changes involved the introduction of key urban linkages onto the National Network as a means of providing an integrated network.

In 2011-12 maintenance expenditure on the National Network in three states exceeded the Australian Government contribution—New South Wales (175 per cent), Queensland (173 per cent) and Tasmania (145 per cent). Smaller contributions were made by the remaining states and territories in comparison to the Australian Government funding—Victoria (54 per cent), Australian Capital Territory (19 per cent), Western Australia (15 per cent), Northern Territory (11 per cent) and South Australia (5 per cent). Road agencies consider that a lack of funding certainty under the current

system does not allow a 'whole of asset life' management focus and as a result budget project to project.

Commercialisation and the role of the private sector

Commercialisation of roads has been largely limited to newly constructed toll roads that are either major urban arterials or interurban highways. While Government remains the main funder and owner of road infrastructure, the last decade has seen increased private sector involvement in financing through public private partnerships for the construction and operation of roads. In many instances however, the ownership, operation and maintenance of road assets funded under public private partnerships revert to government after an agreed period.

Nevertheless, the ongoing role of the private sector in infrastructure provision will be critical to delivering and maintaining our current and future needs, given the fiscal pressures on all levels of government.

The Commonwealth is currently working on new funding and financing options to facilitate more private sector involvement where appropriate, in an attempt to increase the pool of available resources for investment, and in order to free up government balance sheets for initiatives that are suitable only to be delivered by public funds. Whether or not maintenance is a candidate for private sector financing will greatly depend on if it can be marketed in a fashion where it is attractive in private ownership and where its operation as such is not to the detriment of the travelling public.

Heavy Vehicle Charging and Investment

Road freight productivity, which rose during the 1980s and 90s, has slowed over the last decade. Heavy vehicle road users are concerned about lost productivity from inadequate access to roads and the perceived lack of value from charges paid for road services.

Without reform of the planning and delivery of road services, improved access for heavy vehicles and a new approach to pricing heavy vehicle use of the road system, it will not be possible to undertake the current and future road freight task efficiently. This will produce significant negative economic impacts, and higher transport costs, reducing Australia's international competitiveness and economic performance.

Currently heavy vehicle charging and investment arrangements have no linkage between revenue generated and funding expenditure directed at providing improved road services for heavy vehicles. These arrangements lack incentives for road providers to allow heavy vehicle access and do not provide revenue to compensate providers for costs imposed by heavy vehicles. This is particularly acute with local roads, which comprise 80% of the road network.

Direct user charges recover past expenditure with no involvement by heavy vehicle users in planning decisions on expenditure for expanded heavy vehicle road services. Heavy vehicle road users are not provided with information on the costs of road use to drive efficient vehicle usage and a consistent set of road service and access standards are not available.

These current arrangements limit the transparency of investment decisions and lack accountability. Unlike other reformed infrastructure industries (for example water and energy networks), there are no formal mechanisms that promote direct accountability of road providers to the needs of heavy vehicle road users.

Mass-distance-location (MDL) charging of heavy vehicles would help to improve decision making by truck operators as to the types of vehicle they use and the particular roads they use them,

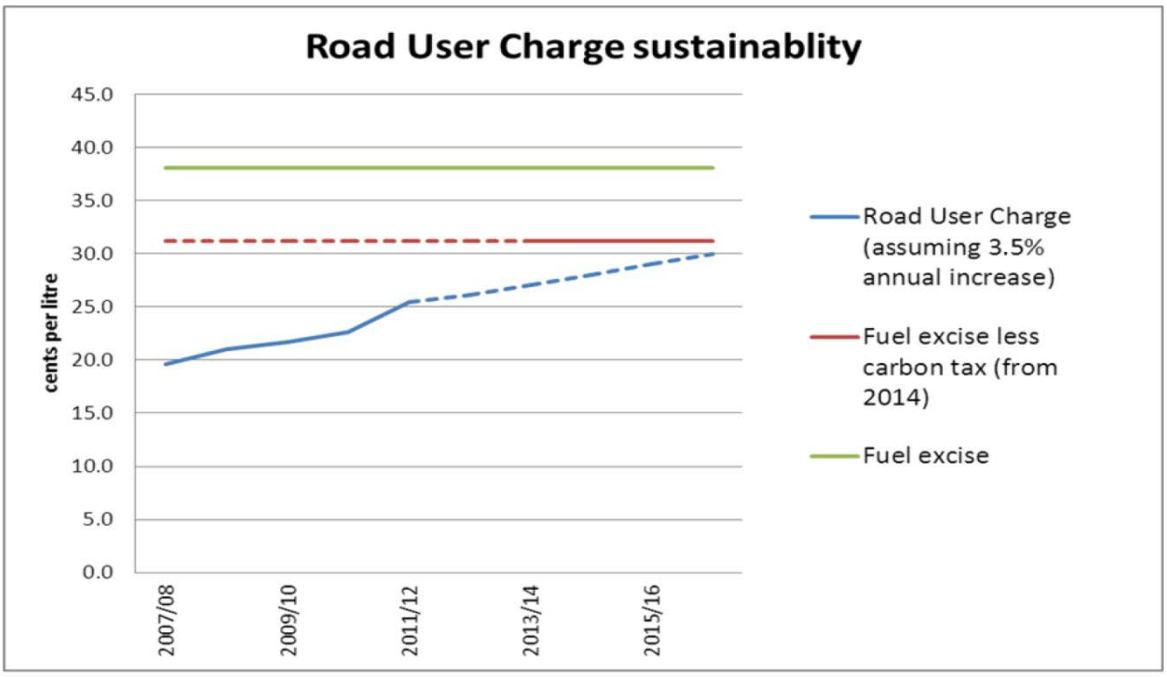
optimising usage and road damage from the point of view of society as whole. MDL charging could also provide better signals as to where stronger pavements should be built. Such stronger pavements will support heavy vehicle loads with less damage, saving on maintenance costs (to a sufficient degree that it more than compensates for the higher investment costs).

Road User Charge

The Commonwealth is not a road owner, however it currently collects charges from heavy vehicle users through a fuel based road user charge (RUC) which is invested into roads used by heavy vehicles. The total heavy vehicle cost recovery is achieved by a combination of the RUC ($1.7 billion in revenue to the Commonwealth) and registration charges ($1.1 billion in revenue to states and territories).

The RUC is the part of the fuel excise that industry pays to use roads. Historically, the fuel excise was increased in line with CPI but in 2001 indexation of the excise was abolished. The excise is now fixed in 'nominal' terms at 38.1 cents per litre. As the RUC rises every year through the National Transport Commission (NTC) determinations and annual adjustments, it edges closer to the fuel excise amount which is effectively a ceiling for the RUC. It is estimated that within seven years, the RUC will reach the fuel excise ceiling, as demonstrated in figure 2.

Figure 2: RUC Approaching Fuel Excise Limit



Once the ceiling is reached, cost increases can no longer be recovered through this mechanism. This will impact the ability of all jurisdictions to effectively achieve cost recovery from heavy vehicles.

Commonwealth exposure to a significant revenue shortfall will undermine current road funding arrangements that support national, state and local roads. If states and territories were to increase registration fees for heavy vehicle users, it would exacerbate perceived inequity and inefficiency of registration fees and would not address the local government funding shortfall.

The October 2013 submission to the Standing Council on Transport Infrastructure on *Increasing Heavy Vehicle Productivity* can be found at **Attachment B**.

National Regulators

The Department is driving key national reform initiatives in the form of national regulators for heavy vehicles, rail safety and maritime safety. Industry is highly supportive of the Commonwealth's efforts to streamline and make more efficient the current state-based regulatory regimes. There will be a need for strong ongoing engagement with the states and territories to ensure the national regulators deliver on the objectives set for them by the Council of Australian Governments (COAG) including reducing the number of regulators from 23 down to three. In particular, there are a number of areas where there are risks for the achievement of these objectives as a result of state and territory efforts to retain at least some elements of their current regulatory arrangements. In addition, there are risks of the states and territories circumventing the intent of the national regulators through the service delivery models to be implemented as elements of the national frameworks. These reforms would not occur without Commonwealth leadership and facilitation.

National Rail Safety Regulator

Established in July 2012 and commencing operations on the 20 January 2013, the National Rail Safety Regulator (NRSR) is supported by single national rail safety law—which has commenced in South Australia (SA), Northern Territory (NT), Tasmania and New South Wales (NSW). Victoria passed the national law on 18 April 2013 (with derogations), though its commencement date is unclear and subject to finalising delegations and the service agreement with the regulator. Queensland has proposed adopting model law rather than application law, and delegating its responsibilities rather than allow for direct accountability of a national regulator, but this was rejected. WA has proposed using mirror legislation rather than application law, and ACT intends to introduce application legislation, although NSW currently regulates on ACT's behalf.

National Heavy Vehicle Regulator

The Heavy Vehicle National Regulator was established from 21 January 2013, with the start date currently set for 10 February 2014. So far, the law has been passed by Queensland (the host state). SA, NSW, VIC, the ACT and Tasmania have passed the law, albeit with derogations. Participating jurisdictions have not yet signed a service agreement (except for the ACT) but will proclaim at the commencement date. The NT has recently decided not to participate unless benefits for NT operators are evident. WA will not participate in the reform.

National Maritime Safety Regulator

On 1 July 2013, the Australian Maritime Safety Authority (AMSA) became the national safety regulator for domestic commercial vessels in Australia, supported by the Marine Safety (Domestic Commercial Vessel) National Law Act 2012 (the National Law) and the Marine Safety (Domestic Commercial Vessel) National Law (Consequential Amendments) Act 2012. NSW, Victoria, SA, NT and Tasmania have passed the application law, commenced operations with the regulator and accepted delegations. Although WA and Queensland have accepted delegation and entered a service agreement with AMSA, WA is unlikely to introduce the law before early 2014. Queensland is yet to determine its future involvement with the reforms and doesn't have a timeline to introduce the application laws.

ARTC Privatisation

The Commission may also wish to examine whether infrastructure business operations such as the Australian Rail Track Corporation Ltd (ARTC) should remain in government ownership. ARTC currently has responsibility for the management of over 8,500 route kilometres of standard gauge interstate track in South Australia, Victoria, Western Australia, Queensland and New South Wales. ARTC also manages the Hunter Valley coal rail network, and other regional rail links, in New South Wales. It is a company under the Corporations Act whose shares are owned by the Commonwealth

of Australia, which is represented by the Minister for Infrastructure and Regional Development, and the Minister for Finance.

The ARTC should continue to be the Australian Government's major investment vehicle, particularly given its central role in the delivery of Inland Rail. However, ARTC has been mooted as a suitable asset for divestment, particularly by superannuation funds. Should a sale be considered at a later stage there are a range of matters to address to ensure the asset is maintained at an appropriate standard and that monopoly power is not abused and to optimise the return on investments in ARTC to date (which will see substantial dividends be paid from 2013-14). ARTC is likely to be most valuable after the 2017-18 financial year ends when its major capital expenditure program has been completed and Hunter Valley cash flows are yet to be collected.

While the ARTC may be suitable for privatisation, a range of factors require consideration:

- Timing—Significant capital investment has been committed that will depress profits and earnings until 2017-18;
- Valuation—comprehensive evaluation will be required as current market value estimations are based on a discounted cash flow methodology which may not align with market estimates of the ARTC's commercial worth;
- Regulation—new or enhanced regulation may be necessary to manage risks associated with privatisation;
- Government Policy Delivery—ARTC currently plays a key role in delivering government rail policy; and
- Lease Requirements—privatisation would trigger state lease requirements which provide the option for states to buy back the network if ARTC ownership changes.

Should the Government ultimately decide to divest ARTC the key issues are likely to be the appropriate timing to maximise value and allow for the delivery of the Inland Rail commitment, and arrangements to ensure ongoing maintenance of the interstate network. Before any decision is made on possible divestment of ARTC, the Government should obtain an independent expert valuation of ARTC, and, legal, probity and financial advice on the sale process.

The Australian Government has committed $300 million to begin pre-construction work on an Inland Railway between Melbourne and the Port of Brisbane. The Government has stated that ARTC will be tasked to work with interested parties to establish a staged, 10 year approach to the construction of the Inland Railway, with construction to start within three years. A privatised ARTC will complicate the delivery of this commitment, though once constructed and operational, Inland Rail would potentially add to ARTC's attractiveness to the private sector.

A more efficient public service

Following the recent machinery of government changes, the Department of Infrastructure and Regional Development is responsible for 93 pieces of legislation, has 1,245 staff (as of 30 September 2013) and has an administered budget of $9.2 billion in 2014-15. Including portfolio agencies, some of which are key safety regulators, the portfolio covers a wide range of complex and diverse policy areas. But with that complexity there is an opportunity for further possible simplification of administrative arrangements. Over the past two decades we have seen very significant improvements in the operating efficiency of public sector agencies. There have been many innovative changes in the way services are delivered and a significant investment in the use of technology. That said, although further efficiencies are becoming increasingly less cost-effective,

there are still opportunities to generate ongoing savings that are worth further investigation by the Commission.

The portfolio critical role as a safety and security regulator will need to remain at the core of any efficiency considerations. With the Office of Transport Security within my Department and portfolio safety bodies such as the ATSB, CASA, AirServices Australia and the Australian Maritime Safety Authority (AMSA), the portfolio is arguably the key safety regulator in the Commonwealth. It will be important for the Commission to acknowledge that a safe and secure transport system are a community expectation, despite increasing transport complexity and demand.