Australian Government
Productivity Commission

National Transport Regulatory Reform

Productivity Commission Draft Report
Overview & Recommendations

November 2019

This is a draft report prepared for further public consultation and input. The Commission will finalise its report after these processes have taken place.

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The Productivity Commission

The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

Further information on the Productivity Commission can be obtained from the Commission's website (www.pc.gov.au).

Opportunity for further comment

You are invited to examine this draft report and comment on it by written submission to the Productivity Commission, preferably in electronic format, by 15 January 2020 and/or by attending a public hearing. Further information on how to provide a submission is included on the inquiry website: https://www.pc.gov.au/inquiries/current/transport/make-submission

The final report will be prepared after further submissions have been received and public hearings have been held and will be forwarded to the Australian Government by 3 April 2020.

Public hearing dates and venues

Location	Date	Venue
Adelaide	Wednesday 29 January	Hotel Grand Chancellor, 65 Hindley St, Adelaide
Sydney	Thursday 30 January	SMC Conference and Function Centre, 66 Goulburn St, Sydney
Brisbane	Friday 31 January	Flex, Level 1, Annex Building, 345 Queen Street Brisbane
Canberra	Tuesday 4 February	Dialogue, 4 National Circuit, Barton
Melbourne	Wednesday 5 February	Level 12, 530 Collins Street, Melbourne

Please note, public hearings are subject to interest and may be held in other locations, if required. Participation in public hearings is available via teleconference. Please visit the inquiry website www.pc.gov.au/inquiries/current/transport/public-hearings to register your interest in participating in a public hearing.

Commissioners

For the purposes of this inquiry and draft report, in accordance with section 40 of the *Productivity Commission Act 1998* the powers of the Productivity Commission have been exercised by:

Paul Lindwall	Presiding Commissioner
Ken Baxter	Commissioner
Malcolm Roberts	Commissioner

Contents

The full report is available at www.pc.gov.au

Acknowledgments

The Commission has used information from a range of sources in preparing this report. The Commission is grateful for the contributions made by individuals and organisations through their submissions and brief comments and their participation in meetings.

In particular, the Commission would like to acknowledge the National Heavy Vehicle Regulator, the Office of the National Rail Safety Regulator and the Australian Maritime Safety Authority. Each of these agencies provided the Commission with unpublished data that has formed an important part of the analysis for this draft report.

The Commission would also like to thank:

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- the Bureau of Infrastructure, Transport and Regional Economics (BITRE), for its assistance in facilitating the Commission's request to State and Territory road safety authorities to gain access to, and get clearance to publish analysis using, the National Crash Database.

OVERVIEW

Key points

- COAG's reforms established national laws and regulators for heavy vehicles, rail, and domestic commercial vessels. After eight years, the transition is nearly complete.
- Reform has delivered more consistent regulation across most jurisdictions and is likely to have reduced compliance costs for some operators. Reform has lifted productivity by improving road access for larger, more efficient trucks.
- Unfinished business remains:
  - Western Australia and the Northern Territory do not participate in the national heavy vehicle regime
  - the national regulators have yet to assume full responsibility for enforcement
  - derogations from the national heavy vehicle and rail laws in some jurisdictions create unjustifiable compliance burdens for businesses
  - some grandfathering of domestic commercial vessels poses a risk to safety
  - approval processes for access to local roads can still be inconsistent, slow and lack transparency.
- Reform was expected to unlock large efficiency gains for heavy vehicle operators. While gains have been made, these forecasts were optimistic and have not been achieved.
- By most measures, safety has continued to improve since 2011. At present, it is unlikely that the recent reforms have contributed to additional improvement to safety outcomes.
- There are significant opportunities for COAG, regulators and industry to further improve productivity and safety.
- A new COAG agenda for the three sectors should build on the regulatory reforms by:
  - accelerating reform of infrastructure planning and management, including the Heavy Vehicle Road Reform agenda and trials of road user charging
  - removing unjustified derogations and grandfathering, using risk-based assessments of the evidence
  - strengthening the safety culture of industry through education and regulatory incentives for capable businesses to switch from 'tick the box' compliance to accredited, risk-based safety management systems
  - realising the full potential of new data technologies to improve safety and productivity
  - removing regulatory barriers — such as some Australian Design Rules — to the early adoption of new technologies which can lift productivity and improve safety.

Overview

Background

Transportation by land, sea, and air is vital to Australia's modern economy. The physical movement of goods, passengers, and raw materials accounts for 4.5 per cent of Australia's annual GDP. The freight supply chain connects virtually all sectors of the economy, facilitating domestic and international trade and production. The efficiency of freight in Australia affects the costs of domestic production, competition and productivity in various industries, and the prices of consumer goods.

Safety is the focus of much of the regulation in the transport sector and is the principal focus of this inquiry. Transport is inherently risky, and governments have a legitimate role in ensuring that safety standards are not compromised by commercial pressures. At the same time, governments and regulators must consider how best to achieve safety objectives while minimising costs to businesses and taxpayers. Properly designed regulation can lead to both improved safety and increased productivity — there is no intrinsic need to trade off safety for productivity.

The reforms at the focus of this inquiry

In 2009 the Council of Australian Governments (COAG) endorsed an historic shift to national regulation of heavy vehicles, rail, and domestic commercial vessels (DCVs), as part of the Seamless National Economy agenda. The reforms focused on the harmonisation of safety regulation for domestic commercial transport (figure 1). Replacing multiple State and Territory regulatory regimes with consistent national regulation for each sector was expected to improve safety and productivity.

After the signing of three intergovernmental agreements in 2011, governments developed national laws for each sector: the Heavy Vehicle National Law (HVNL), the Rail Safety National Law (RSNL), and the Marine Safety (Domestic Commercial Vessel) National Law (MSNL). Jurisdictions also began transferring powers to the new national regulators. The National Heavy Vehicle Regulator (NHVR) and the Office of the National Rail Safety Regulator (ONRSR) were established in 2012 and 2013 respectively. Regulation of domestic commercial vessels was transferred to the Australian Maritime Safety Authority (AMSA) in 2018.

Figure 1 **COAG transport reforms in a broader regulatory context**

	Heavy Vehicle	Rail	Maritime
2009 COAG reforms	**National regulatory regime** • Heavy Vehicle National Law • National Heavy Vehicle Regulator	**National regulatory regime** • Rail Safety National Law • Office of the National Rail Safety Regulator	**National regulatory regime** • Marine Safety (Domestic Commercial Vessel) National Law • Australian Maritime Safety Authority
	Applies to: All heavy vehicles >4.5t • Freight haulage • Oversize, overmass • Construction transport • Passenger buses	**Applies to:** All above and below rail operations • Freight rail • Passenger rail (excludes some light rail and tourist rail)	**Applies to:** Domestic Commercial Vessels - operating only within Australian waters • Passenger • Fishing • Hire and drive • Tourism
Other safety regulations	• Australian Road Rules • Manufacturing standards • Public safety and amenity • Workplace Health and Safety	• Manufacturing standards • Work Health and Safety	• Recreational vessels • Australian and foreign vessels covered under the *Navigation Act 2012* • Work Health and Safety
Other areas of transport policy	• Infrastructure provision, access and maintenance • Dangerous goods • Commercial incentives • Technological advancements	• Infrastructure provision, access and maintenance • Commercial incentives • Technological advancements	• Port access and maintenance • Fisheries management • Commercial incentives • Technological advancements
Other reviews and inquiries	• National Freight and Supply Chain Strategy		
	• HVNL review (NTC) • Heavy Vehicle Road Reform (TIC)	• Review of rail access regimes (DIRDC)	• Senate Inquiry into AMSA

What have we been asked to do?

The terms of reference set out three tasks for the Commission:

1. investigate the economic impacts of the 2008-09 COAG transport reforms
2. examine the implementation of the national transport regulation reforms, including the development of the three national regulators; the capacity of local governments in supporting the implementation; and the delivery against agreed COAG and intergovernmental agreement (IGA) objectives
3. assess the scope for future reforms to national transport regulation, including areas for further harmonisation and integration of the transport sector and the remit of the regulators.

The Commission has been asked to take account of the broader objectives of the 2008-09 COAG reforms, other associated intergovernmental agreements, and complementary reforms at the Commonwealth, State and Territory levels. These reforms include (but are not limited to) rail standards harmonisation and interoperability; improved network access for higher productivity vehicles; the National Freight and Supply Chain Strategy; and the broader Heavy Vehicle Road Reform agenda of the Transport and Infrastructure Council (TIC).

The Commission's task

The terms of reference set two major challenges for the Commission. The first challenge is to assess the implementation and economic impact of the COAG reforms. This assessment may also yield insights into how harmonisation can be pursued in the Australian federation.

The second challenge is to identify new reforms which could advance the objectives of the 2009 COAG reforms. In 2009, harmonisation was a practical, co-operative reform to improve safety and lower business costs. In 2019, with harmonisation largely achieved, the next opportunities for reform will be different: new, more flexible approaches to safety regulation, policy changes in critical areas such as infrastructure provision and funding, and using emerging technologies to lift both safety and productivity.

The Commission's approach to assessing impacts

The Commission has endeavoured to access the best available data to provide empirical evidence about safety and productivity. However, assembling the data has taken time and the data are often incomplete or inconsistent (or, at times, non-existent). Further, the implementation of the regulatory reforms has taken place over many years and there is no neat dividing line between pre-reform and post-reform periods. Some aspects of reform are recent, while other aspects predate the COAG reforms. Isolating the impact of one factor (regulation) when many factors are at work is inevitably contentious. Consequently, the assessment relies on a holistic body of evidence. This includes qualitative and quantitative

evidence, as well as substantial industry consultation. Further analysis will be undertaken for the final report.

The COAG reforms may prove, in time, to have contributed to improvement in safety outcomes. Some policy changes are designed to contribute to longer-term improvements, and their benefits may not yet be apparent. The evidence so far does not suggest that harmonisation has had a negative effect on safety; across most measures, safety outcomes have improved over the past decade.

Implementation and progress

Implementing the harmonisation agenda has been slower than expected, and the transition to national regulation has been uneven. After eight years, the COAG aim of seamless national regulation of heavy vehicles, rail and domestic commercial vessels is still incomplete.

National systems are in place

The primary goals of the harmonisation agenda have been achieved — national laws and regulators have been established for heavy vehicles, rail, and domestic commercial vessels. The HVNL replaced 13 model laws and six State and Territory transport related laws. The RSNL replaced 46 pieces of Commonwealth, State, and Territory law, and created a single national rail safety regulator. The MSNL replaced eight Commonwealth, State and Territory laws with a single framework for the certification, construction, equipment design, operation and administration related to domestic commercial vessels in Australian waters.

Different starting points in each mode

The scale of the harmonisation task across the three modes of transport has been considerable, partly due to the wide variations between State and Territory regulations. Heavy vehicle and rail regulation benefited from model laws and regulations developed by the National Transport Commission (NTC) before the 2009 COAG Agreement, although implementation was piecemeal. The HVNL and RSNL have been built on those early reforms.

By contrast, no model laws were developed for domestic commercial vessels before the 2009 COAG Agreement, resulting in highly inconsistent requirements across the country.

Regulation has been harmonised to a degree

The degree of harmonisation of transport regulation can be assessed in two ways: on the degree to which a national system exists in legislation and regulation; and the extent to which operators experience different regulatory requirements in different jurisdictions.

Two jurisdictions remain outside the heavy vehicle regime

Western Australia and the Northern Territory have not adopted the HVNL, choosing to retain their own regulatory regimes. Both jurisdictions apply a less prescriptive approach than the HVNL, and both consider that their legislation is better suited for local conditions while delivering at least comparable safety and productivity benefits. In the case of Western Australia, most interstate freight is delivered by rail rather than road, reducing (but not eliminating) the regulatory costs of different regimes across jurisdictions.

Derogations exist among signatory jurisdictions

When enacting the national laws, some jurisdictions have chosen to exclude, add to, or modify sections of the national law in their jurisdictions ('derogations'). Many derogations are administrative or technical in nature with limited practical effect. In some cases, derogations act to make the law more flexible and less prescriptive. However, in other cases, derogations are substantial and have significant effects on operators.

There are over 70 derogations from the HVNL, with 25 in New South Wales alone. Enforcement provisions account for most derogations in the HVNL, creating inconsistent application of enforcement powers. One significant inconsistency relates to periodic vehicle inspections, which are required annually in some jurisdictions but not at all in other jurisdictions.

There are over 80 derogations from the RSNL. Four main areas have been identified by industry as significant issues: hours-of-work rules to manage fatigue; drug and alcohol testing; requirements for data logging equipment; and lags caused by the use of mirror legislation.

Mirror legislation can cause lags

The national laws have been implemented by States and Territories in two different ways. Jurisdictions that are signatory to the national laws (other than those hosting the legislative instruments) are required to apply the national laws by either referring to, or mirroring, the host legislation. The latter involves enacting separate State legislation which must be amended every time the national law is changed. Western Australia uses mirror legislation for the RSNL, as does South Australia for the HVNL.

Whether national laws are adopted via application or mirror legislation affects national consistency. Using mirror legislation means that changes to the national law require each State parliament to pass amendments to their State law. This takes time, with the result that the host and State mirror laws are inconsistent during that period. Inconsistencies with the RSNL have lasted up to two years.

Some residual State and Territory responsibilities remain

The national regulators have engaged in service level agreements (SLAs) with State and Territory Governments as a transitional measure. SLAs allowed for the national law to be enforced and administered by existing regulators before the newly established regulator has fully developed its capacity and systems. The application of SLAs was uneven. Some State and Territory Governments opted to not enter agreements, while others established SLAs with some or all three of the regulators. Differences exist across jurisdictions about which functions remain with States and Territories and which have been transferred to the national regulators.

The use of SLAs mean that some State and Territory Governments retain responsibilities for transport regulation and enforcement that were nominally assigned to the national regulators. Inconsistency across jurisdictions means that regulated parties need to familiarise themselves with who is responsible for what in each jurisdiction. While the differences can be subtle, they add to the cost and complexity of doing business, especially if there is uncertainty about how national laws are applied in practice. The national regulators in heavy vehicle and rail have stated that they intend to terminate the remaining SLAs within the next few years.

Some grandfathering provisions are increasing safety risks

Grandfathering arrangements in the MSNL allow a significant number of vessels to continue operating under old (State-based) regulations rather than the new regulations. Grandfathering applies to vessel build and maintenance standards, as well as survey, crewing, and competency requirements. The effect of grandfathering can be significant. For example, in some States there was no requirement for regular vessel surveys before the COAG reforms. The grandfathering of these vessels means they may be substantially less safe than equivalent vessels operating in other States.

Vessels can retain their grandfathered status if sold to an owner who continues to operate it for the same purpose. There is anecdotal evidence that grandfathered vessels may command a premium in the market when compared with purchasing new vessels meeting safety requirements. This creates windfall gains for owners of grandfathered vessels, while the vessels and their operation potentially could be unsafe.

Above rail operators face inconsistencies between rail networks

Despite being covered by one national regulator and one national law, rail operators can experience multiple operating regimes, especially when traversing different track infrastructure. One legacy of railway networks being built by separate jurisdictions is different engineering standards for trains and track equipment. Above rail operators often require approvals from rail infrastructure managers for cross-border routes and for moving rolling stock between rail networks. In some cases, this has led to lags for operators seeking to operate the same rolling stock in different jurisdictions.

There are thirteen rail infrastructure managers operating networks in Australia, with potential differences in systems, processes and technologies.

Overall, inconsistencies between rail infrastructure procedures inhibit the scope for rail businesses to operate across the country, reducing the potential productivity, competition and safety benefits. Resolutions to these inconsistencies are beyond the scope of ONRSR's responsibilities. In some cases, harmonisation of track technologies or radio systems may not be economically viable. There may be more scope for consistency if technology evolves away from track-based signalling and towards equipment on-board the rolling stock.

Transitional issues

The transition from State-based regulation to a national system has required co-operation between the Australian, State and Territory Governments and the national and State-based regulators. Some criticisms of the national system may reflect transitional issues likely to diminish as implementation continues.

Transferring responsibilities and resources

New South Wales, Queensland and Victoria are yet to transfer regulatory responsibilities fully to the NHVR. A NSW handover will not occur before 30 June 2020. Queensland's transition is due to commence in 2020-21. Victoria is yet to agree a final timetable. To carry out their responsibilities, the national regulators have recruited or absorbed State and Territory Government staff.

Managing these staff movements has been challenging. The transfer of staff from State regulators to national regulators has been unwieldy, creating management challenges for the regulators. Delays in staff movement have delayed the national regulators achieving full operational capability.

Developing national regulators and their systems

Establishing national regulators has required the development of various operational systems, including systems for enforcement and record keeping. This has been a complex process. For example, data collection by State and Territory regulators was often inconsistent or incomplete, with the result that the national regulators started with information deficits.

Core systems have had to be developed. Under the HVNL, the NHVR accepted responsibility for processing road access permits for restricted access vehicles. However, when the NHVR was launched, the processing system almost immediately failed to cope with the unexpectedly high volume of applications. The functions had to be returned to State and Territory Governments. This failure may have been averted if a pilot program or similar transitional mechanism had been used.

Each of the national regulators has developed their capabilities over time. The degree of progress for each regulator has been influenced by the scale and nature of their respective tasks and the time and resources allocated to the task.

Given that AMSA formally assumed responsibility for administering the MSNL in July 2018, it has had less time to adapt to the role than the NHVR and ONRSR. In its first year, AMSA has already implemented various changes, including altering its survey and inspection regimes and building service delivery capacity. For industry, this has meant that the new regulatory regime is still being implemented. However, AMSA should have made more progress in building its systems and capabilities following the 2014 Australian Government announcement that AMSA would assume responsibilities as the national marine safety regulator.

Have the objectives been achieved?

The Intergovernmental Agreements signed in 2011 set out COAG's objectives and intended outcomes from the national transport reforms (table 1).

COAG's aim was to improve safety and productivity in the sectors and address impediments to competition and distortions in the allocation of resources in the economy.

Productivity gains from improved access for heavy vehicles

The 2008-09 COAG reforms sought to increase road access for heavy vehicles by changing the decision-making processes for access and by creating a national regulator to facilitate the changes. Large productivity gains were expected from improving access to the road network for newer, larger, and safer heavy vehicles, through:

- greater transparency in the decision-making process

- encouraging road managers to make decisions consistent with guidance provided by the NHVR.

Significant progress is being made to put such systems in place. Progress has also been made in gaining the agreement of road managers to gazette routes to allow as-of-right access for restricted access vehicles. The NHVR has also worked with road managers to gain pre-approvals, allowing it to approve access immediately without referral to local authorities.

Table 1 **Key elements of COAG's transport IGAs**

	Heavy Vehicle IGA	*Rail IGA*	*Maritime IGA*
Signatories	All States and Territories except Western Australia	All States and Territories	All States and Territories
Objectives	• Seamless national regulation • Consistent and streamlined administration and service provision of regulation	• Seamless national safety regulation of rail operations • Improved rail safety	• Safe operations with effective, consistent and efficient regulation • Minimise legal and administrative costs • No overall increase in regulatory burden
Intended outcomes	• Enhanced safety, productivity and efficiency • Removal of inefficiencies from inconsistent jurisdictional requirements • Reduced regulatory burden and compliance costs	• Promotion of safety and safety improvement • Improved productivity and efficiencies from consistent national requirements • Decreased regulatory burden	• Improved safety and lower public, industry and environmental risks • Reduced complexity and increased certainty re. design, construction, equipment, operation and crew certification • Remove inter-state barriers to transfer of labour and commercial vessels
Intended outputs	• A national law • An independent national regulator • National standards for delivery of regulatory services and activities • NHVR and Government service level agreements to support implementation of the national system	• A national law • An independent national regulator • Expansion of the Australian Transport Safety Bureau's role to cover rail safety investigations nationally	• A national law • An independent national regulator • A national compliance and enforcement system, consistently applied • A national database of domestic commercial vessels

The value of improvements to heavy vehicle access management were initially estimated in the Regulation Impact Statement to be around $9 billion over 20 years in net present value. These estimates included access for restricted vehicles, including Performance Based Standards (PBS) vehicles and vehicles operating at higher mass limits and concessional mass limits. It is still too early to determine whether these benefits will be achieved, although growing numbers of PBS and other large vehicles suggest some efficiency gains are being delivered. Although access is improving, it is substantially less than originally envisaged

(which was ambitious). Further substantial productivity benefits are unlikely to be achieved without other complementary reforms, including the National Heavy Road Reform agenda being developed by the Transport and Infrastructure Council.

Direct gains from removing duplication of regulation

The removal of inter-jurisdictional differences or duplication is likely to have resulted in some efficiency gains, although the gains may not always be readily observable (or large). Some of the intended efficiency gains have been confirmed anecdotally. For example, the ability to recognise marine qualifications nationally has improved operators' ability to hire staff from interstate. Similar efficiencies are emerging in the rail sector as contractors find it easier to work across jurisdictional boundaries. Again, these efficiency gains are not easy to measure.

Progress in transport safety policy

Some changes to transport safety policy are likely to contribute to better safety in the longer term, though their benefits may not be evident at this stage. Some reforms have resulted in structural or systemic improvements to safety risk factors (box 1).

Box 1 Examples of improved safety policy under the national regimes

Chain of Responsibility (heavy vehicle)

In heavy vehicle transport, Chain of Responsibility (CoR) laws assign safety responsibilities to parties within the supply chain (for example, transport operators, clients), making them accountable for breaches or safety incidents where they have influenced non-compliance. In principle, CoR laws not only recognise that safety outcomes are influenced by many factors, but that driver behaviour can be influenced significantly by systemic factors. Several stakeholders have noted the potential importance of CoR laws to achieving better safety outcomes, although given their recent introduction into the HVNL, there is little evidence yet of its effectiveness.

Fatigue management and accreditation (heavy vehicle)

While there remain various areas where fatigue management could be improved, there has also been incremental progress on the issue as a result of the harmonisation agenda. All jurisdictions across Australia have some form of fatigue management regulation in place for heavy vehicles, though this differs in application between Western Australia, the Northern Territory, and HVNL jurisdictions.

Developments have also occurred in heavy vehicle accreditation. It has so far helped to provide structure and oversight to operators' safety management, and in return, allowed operators some level of regulatory concession and flexibility.

Co-regulation (rail)

In rail transport, many of the substantive changes to safety regulation involve the use of accreditation. ONRSR appears to be effective in managing a risk-based approach, targeting activity to operators with higher risk profiles. ONRSR uses accreditation of operator safety management systems to allow greater intervention when necessary, but a lighter touch for capable operators undertaking low risk activities or managing risks well.

Interface agreements (rail)

Another positive development has been the use of interface agreements as the main way of managing level crossing safety under the RSNL. The law requires that rail transport operators and/or road managers (typically local governments) enter into an agreement to coordinate their management of safety risks at interfaces. Level crossings are a key area of safety risk. It is valuable to assign management of this safety issue to the party best able to control this risk.

Safety equipment and general raising of standards (maritime)

In maritime transport, some of the most significant improvements in safety regulation relate to aspects of grandfathering provisions that have been progressively wound back by AMSA. These include minimum standards for on-board safety equipment, such as float-free EPIRBs.

In addition, moving to a national system has meant, in some cases, an increase in the stringency of regulation. For example, some smaller commercial vessels in Queensland had previously not been subject to a surveying regime at all. However, the overall impact on safety also varies between newer and older vessels, due to grandfathering provisions.

Areas where the impacts of harmonisation are small or unclear

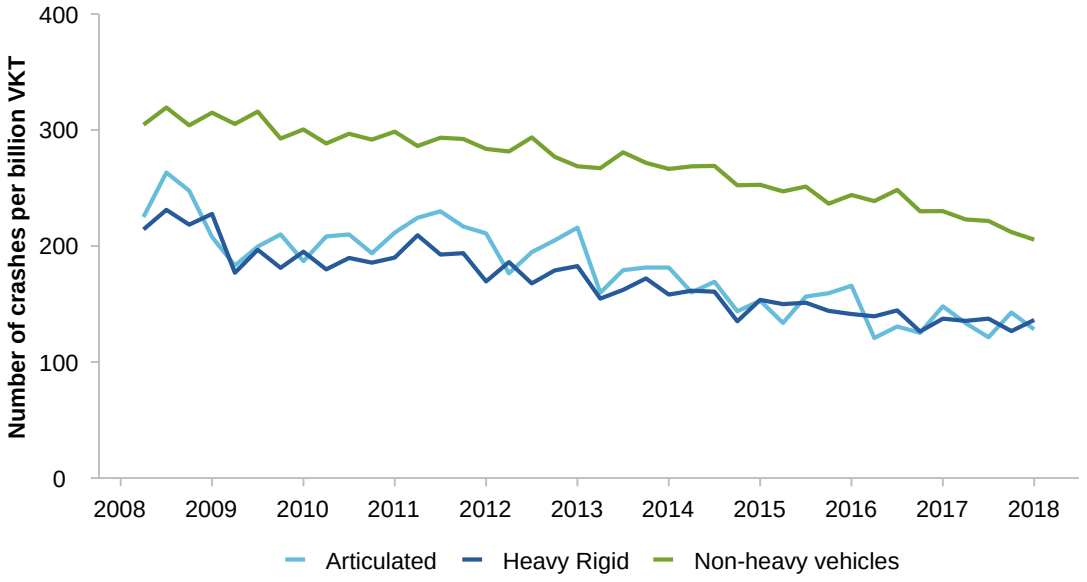
Safety outcomes have been relatively consistent

There have been significant improvements in heavy vehicle safety over the past decade. As shown in figure 2, the number of heavy vehicle crashes involving injury or death (per billion vehicle kilometres travelled) decreased by about 40 per cent between 2008 and 2018.

This rate of decline has been similar for all types of vehicles, indicating that the overall downward trend is likely to be due to factors affecting all vehicle types. These factors may include improvements in road infrastructure and maintenance, better driver education and training, increased or better targeting of road rules enforcement, or improvements in vehicle design and their safety features.

Figure 2 **Heavy vehicle safety outcomes have improved over time**

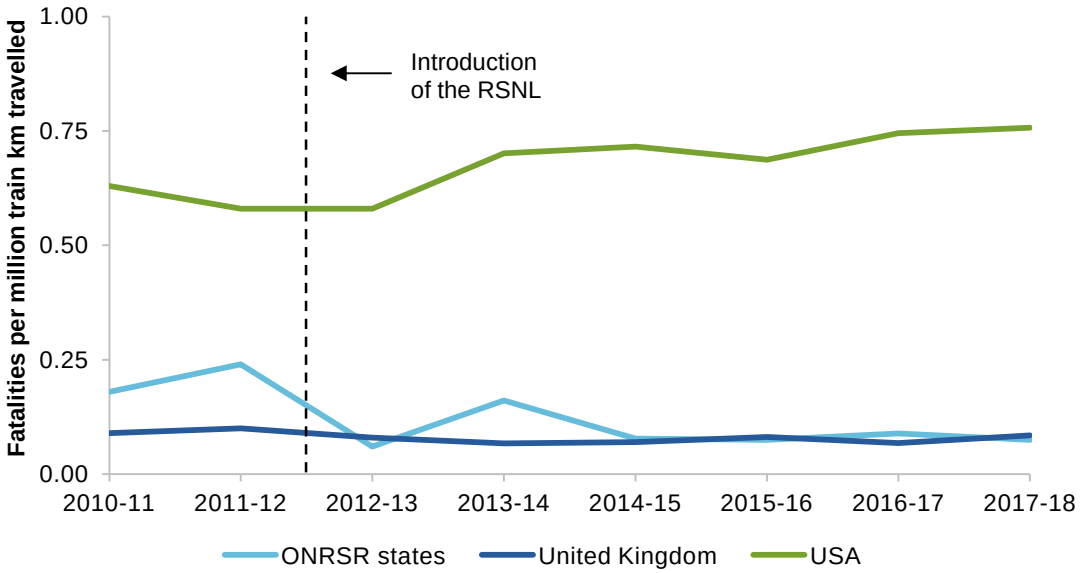
Crashes involving injury or death per billion vehicle kilometres travelled (VKT)



The numbers of fatalities or serious injuries associated with the rail sector are low, particularly if trespass and death by suicide are excluded. To assess the potential impact of the rail national law on rail safety, an analysis has been undertaken of trends in fatalities, level crossing incidence reports, collisions and derailments. The evidence suggests that safety outcomes have been constant and comparatively positive by international standards (figure 3).

Figure 3 **Rail related fatalities have fallen**

Fatalities per million train kilometers travelled



Relative to other modes of transport, the number of fatalities or serious injuries associated with domestic commercial vessels is low. Data collected by AMSA show that there were 62 fatalities involving domestic commercial vessels in Australia between 1 July 2013 and June 2019 (figure 4). That said, some fatalities reported are due to natural causes, and are unlikely to be avoided through safety regulation directly under AMSA's remit.

Data on the number of reported safety incidents for selected jurisdictions indicates that there has been no significant improvement in incident rates since the introduction of the MSNL in 2013 (figure 5).

Mixed and missing evidence on compliance costs

The impact of harmonisation on compliance costs depends partly on the nature and extent of compliance costs before the COAG reforms. In the case of maritime transport, due to the differences between regulatory regimes before the national system, the MSNL has had mixed effects on compliance costs. In some jurisdictions, operators of smaller vessels have experienced significant increases in compliance burden. In other jurisdictions, operators have seen the stringency of regulatory requirements reduced, potentially reducing regulatory burden. The overall impact on compliance costs also varies between newer and older vessels, due to grandfathering provisions.

Figure 4 **Fatalities associated with domestic commercial vessels**

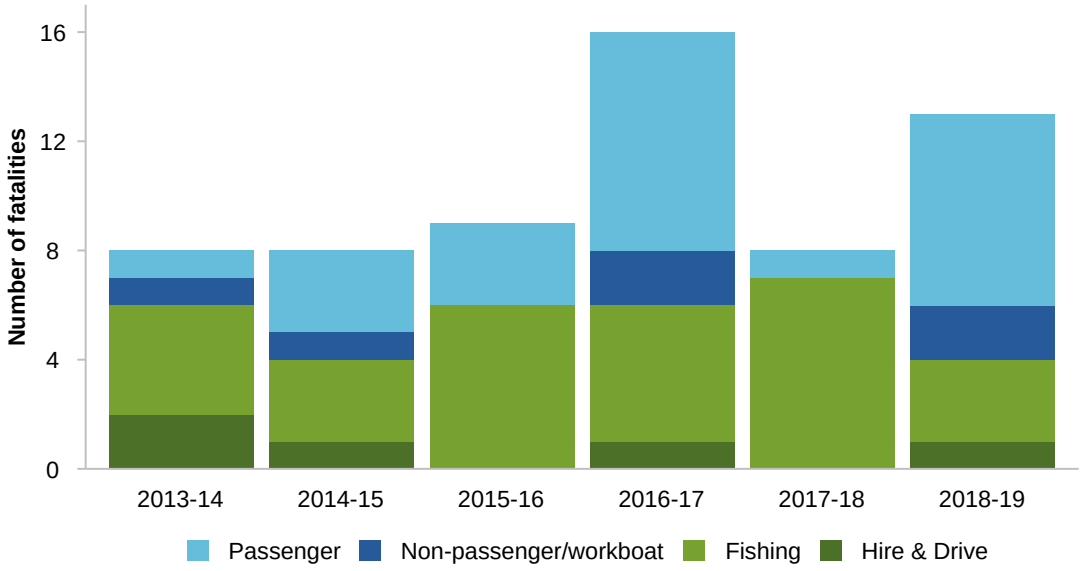
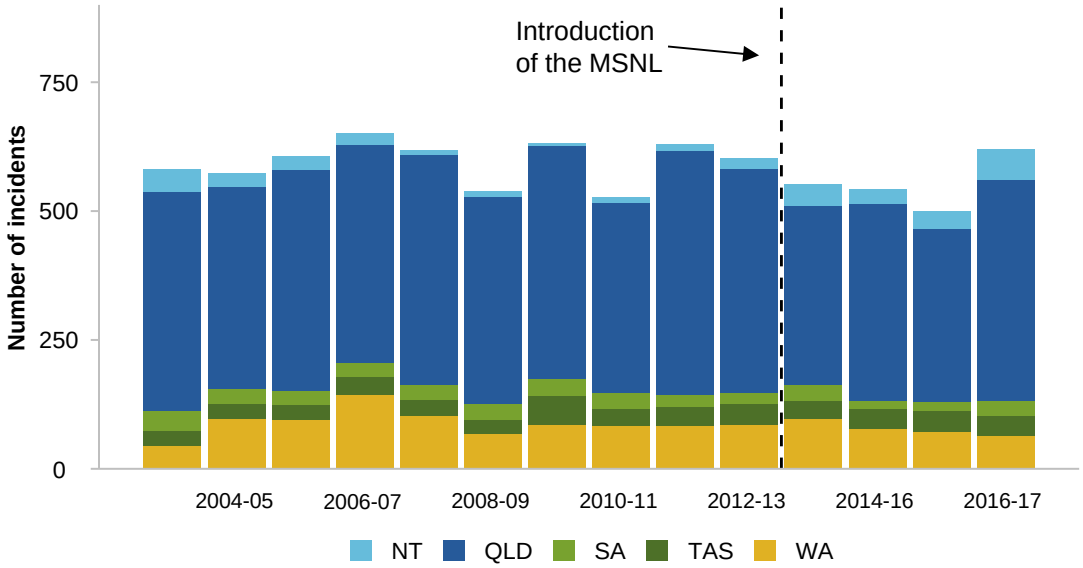


Figure 5 **There has been no significant change in safety incidents since the introduction of the MSNL**

Number of maritime incidents, July 2003 - June 2017



It is unclear whether the national laws have led to operators devoting more time or resources to compliance. Across all three modes of transport, submissions suggested that the current instruments can be unnecessarily complex and need simplification. For the many small

operators of heavy vehicles and domestic commercial vessels, some key requirements seem complicated if not confusing.

Given that the HVNL contains almost 800 sections (plus 5 sets of regulations), it is not surprising that the law has been described as complex. The length of the HVNL is due largely to its prescriptive nature. For some operators, prescription has the benefit of certainty. These operators prefer clear direction from the regulators. By the same token, many operators have reportedly encountered uncertainty as a result of the NHVR moving to a more flexible approach under Chain of Responsibility regulation. To this end, the NTC is reviewing the HVNL.

Further action is required

There are aspects of the national regulatory regimes that could be improved. Some issues are transitional and are likely to diminish as implementation draws to a close. For other areas, further action is needed by regulators and governments.

The experiences of harmonising transport regulation have yielded several lessons that could be relevant when undertaking other reform initiatives involving harmonisation (box 2).

Access and permits (heavy vehicle)

While some productivity gains have been achieved with respect to heavy vehicle access, processing times for some access approvals remain problematic. Some issues could be addressed by changes to the HVNL, for example, where governments could improve the permit regime by simplifying the categories of heavy vehicles (thereby facilitating road manager assessments).

However, the greatest benefit would arise from increasing the use of gazettal notices that allow as-of-right access. This would remove the need for operators to apply for once-off permits. In addition, greater use could be made of pre-approval arrangements, which allow the NHVR to approve permit applications for a given route (subject to clear constraints such as time of day access), without further approval from local government. An increasing number of local governments have agreed to use either or both instruments, reducing the number of permit applications requiring case by case decisions by local governments.

Gains would also arise from building capability for infrastructure managers (State, Territory, and local governments), which would have implications not only for access, but also for infrastructure provision. This may require more fundamental reforms by State, Territory, and local governments, and are discussed below in the forward-looking agenda.

Box 2 Lessons learned about harmonisation

Transport is one of several industries highlighted by the 2008 Seamless National Economy agreement as suitable for regulatory harmonisation. The lessons learned so far from the implementation of the harmonisation agenda in transport may inform other policy initiatives where harmonisation is intended. Some of the key lessons are outlined below.

The ideal form and degree of harmonisation differs case by case

The question of whether or how to pursue national consistency is not straightforward. Inconsistencies between jurisdictions may have significant implications for safety or productivity. Where this is the case, governments should consider whether moves toward consistency are supported by evidence and, if so, whether the appropriate course of action is via uniformity, mutual recognition, or greater flexibility.

Making use of the pre-implementation phase

As noted above, the scale of the harmonisation task is shaped partly by the extent of disparity between State and Territory regimes. In heavy vehicle and rail regulation, some progress toward harmonisation was made before the 2009 COAG agreements, through the use of model laws. On the other hand, the regulation of domestic commercial vessels (prior to the 2009 COAG agreements) stands out as an example of vastly different and inconsistent regulatory approaches. Moreover, in the period before AMSA became the national regulator for domestic commercial vessels, little progress was made by State and Territory Governments to gradually move their regulatory regimes towards harmonisation.

Consolidating State and Territory datasets may be difficult

In cases where the harmonisation task involves the establishment of a national regulator, this is likely to require administrative data to be collated centrally from States and Territories, perhaps for the first time, into a central database. By their nature, jurisdiction-specific regimes would have placed limited value on maintaining consistency with other jurisdictions in either the form or detail of their datasets. A considerable amount of time and resources may be needed for this task in particular, and data should be shared with the national regulator as early as possible.

Regulator resourcing should be certain

The 2009 COAG reforms brought together activities previously undertaken by the States and Territories, offering the potential for economies of scale. Evidence suggests that, so far, these efficiencies are unlikely to have been realised, at least for the NHVR and ONRSR. This is not surprising, given that transfers of staff and responsibility are still occurring and given the complexities that have been faced by each regulator.

However, prolonged uncertainty over funding can limit a regulator's ability to effectively provide services in the short term or to plan service levels in the longer term. This has been the case to some degree in maritime transport, where the approach to cost recovery will not be determined until 2021 — eight years after the implementation of the MSNL. Any barriers to service delivery or forward planning will have implications for the effectiveness of the regulator, and thereby, for safety outcomes.

(continued next page)

Box 2 (continued)

Transitioning mechanisms should include sun-setting provisions

Grandfathering arrangements allow certain operators to continue operating under old (State and Territory) regulations rather than under new regulations. The use of grandfathering is itself a clear impediment to national consistency. In maritime transport, the use of grandfathering has extended beyond its intended transitional nature, and has resulted in prolonged inconsistency.

Similarly, Service Level Agreements (SLAs) are undoubtedly a useful tool in aiding the implementation of and transition to a national law and national regulator. They may allow for a smoother and more gradual transition from one regulator to another, potentially providing regulated businesses with more guidance and notice. At the same time, the extended use of SLAs during implementation may prolong the time required for a national regulator to reach maturity.

Using an applied laws approach aids harmonisation

Where national laws are implemented, some jurisdictions may choose not to adopt them outright. Usually this occurs when there are concerns about jurisdictional sovereignty. For example, a mirror approach could be used in place of an applied laws approach.

In the short term, a mirror approach leads to an identical result to an applied laws approach, where the host law is replicated directly into a model instrument. However, whenever the national law is amended within the host jurisdiction, there may be a lag before the mirroring jurisdiction is able to pass amendment legislation, causing inconsistencies in the meantime. Where a mirror jurisdiction ultimately agrees to pass the amendments in full, any lags due to the mirroring process are wasteful and unnecessary.

An applied laws approach is more conducive to national consistency than a mirror law approach. Mirroring should not be the preferred approach for harmonisation, however it is preferable (especially in the short term) to an agreement not being reached with a jurisdiction, resulting in them remaining a non-signatory. Despite its flaws, a mirroring approach generally provides a greater degree of national consistency than a situation where jurisdictions opt out of national laws.

Implementation progress is beholden to incremental negotiation

The difficulty of implementing reforms across the States and Territories has been longstanding. This reflects not only the inherent difficulty in creating a uniform regulation that applies well in each jurisdiction, but also the difficulty of achieving unanimous agreement from the governments of all jurisdictions.

The model of harmonisation for heavy vehicle, rail, and domestic commercial vessel transport has been one that has required initial and ongoing agreement between COAG members. This partly explains the extended timeframe for implementation of the harmonisation reforms.

Even eight years after the signing of the heavy vehicle IGA, some form of negotiation involving State and Territory Governments are ongoing. This includes, for example, pending agreements on the terms under which jurisdictions will transfer regulatory services under the HVNL back to the NHVR. Negotiations will also continue between COAG members about cost-recovery arrangements for AMSA, due to be resolved in 2021, pending a review.

Fatigue management and flexibility (heavy vehicle)

The effective management of fatigue is critical to safety and should not be compromised. However, evidence from heavy vehicle operators indicates that prescriptive fatigue management can have perverse effects, compelling drivers to take risks to comply with the rules. There is frustration with compliance activities, such as maintaining work diaries.

Restrictions on working hours are unavoidable and are indirect measures for managing fatigue. While a limit on working hours is sensible, there is inevitably debate on the actual limits. The regulator already has discretion to permit more flexible arrangements where an operator can show that safety will be maintained. Basic and Advanced Fatigue Management Accreditation under the National Heavy Vehicle Accreditation Scheme (NHVAS) allow operators to work extended hours. Advanced Fatigue Management Accreditation allows an operator to propose its own working hours, supported by in-house fatigue management practices.

Subject to advice from the NTC review into driver fatigue management, governments should amend the HVNL to allow the NHVR to more easily provide regulatory concessions from prescribed aspects of fatigue management regulation, where it is satisfied that more effective systems of fatigue management are in place. Alternatively, the NHVR should make use of its existing powers by amending its accreditation schemes to recognise technology-enabled management systems, and/or accredited management systems. However, some outer limits on hours of operation should remain.

Accreditation (heavy vehicle)

There are three accreditation schemes for heavy vehicles: the NHVAS, TruckSafe, and the Western Australian Heavy Vehicle Accreditation (WAHVA). While participation in the NHVAS and TruckSafe are voluntary, accreditation under WAHVA is compulsory for operators using restricted access vehicles in Western Australia.

Accreditation through the NHVAS offers an operator regulatory concessions (for example higher mass limits, extended working hours) conditional on having an approved safety management system. It is estimated that about 20 per cent of operators are accredited.

TruckSafe is an initiative by the Australian Trucking Association and the Australian Logistics Council to raise professional and safety standards. The scheme requires operators to meet a set of minimum standards across key areas such as fatigue management. Membership of the scheme may assist an operator to satisfy obligations under Chain of Responsibility legislation.

The operation of accreditation schemes has been examined by the Medlock review (2018). The review recommended improvements to accreditation, including a single national framework which would extend regulatory concessions to members of all accredited schemes. Processes are underway to implement the recommendations from the Medlock

review, with an NHVR working group set to provide further recommendations to State and Territory Governments.

Fatigue management derogations (rail)

It may be valuable for ONRSR and State and Territory Governments to focus on removing inconsistencies in fatigue management applying to freight routes crossing multiple jurisdictions (and multiple rail networks). In some cases, a single journey may encounter different fatigue management requirements due to jurisdictional derogations or the requirements of rail infrastructure managers. This will also affect future infrastructure, including the Inland Rail project, where operators will encounter different fatigue management requirements in Victoria (no prescribed outer limit on hours), New South Wales (9 hour maximum shift), and Queensland (9 hour shift with 8 hours driving).

Governments should commit to harmonisation of fatigue management for inter-jurisdictional rail freight routes. The process should involve an independent review, including evidence on the implications for safety.

Appropriate regulation for Class 4 Domestic Commercial Vessels (maritime)

The domestic commercial vessel fleet is diverse. The fleet ranges from large passenger and industrial vessels to hired kayaks and tinnies. This diversity presents challenges for AMSA in establishing a visible regulatory presence and delivering services.

It is valuable to consider whether the remit of AMSA and other maritime regulators is appropriate in principle. This depends on whether vessels of similar type and operation are subject to similar regulation; whether there are significant benefits from national regulation; and whether State and Territory regulation had resulted in significant barriers to efficiency or safety.

In the case of Hire and Drive (Class 4), these vessels are likely to have more in common with recreational (domestic) vessels (as they are operated by a recreational master) than with commercial vessels. Their operational use is leisure-related, rather than commercial. Given the nature of their operation, the models of vessels are likely to be similar to recreational vessels, (ranging from yachts to kayaks), and are likely to traverse similar waterways.

Overall, there is good reason for Class 4 Hire and Drive vessels to be returned to the remit of State and Territory regulators, which remain responsible for recreational vessels.

Vessel survey inspection and grandfathering (maritime)

Some grandfathering provisions pose a significant risk to maritime safety. This has been acknowledged by various stakeholders, including AMSA.

State and Territory coroners have recommended the removal of grandfathering for domestic commercial vessels, especially fishing vessels which tend to be older, more widely exempted, and operating in higher risk conditions.

In the regulation impact statement for the 2018 reforms to the vessel survey regime, it was estimated that about 6000 vessels were operating under grandfathered arrangements, with the vast majority of these vessels operating in Queensland.

COAG and AMSA should remove unjustified grandfathering regulations, with priority given to ending grandfathering of vessels exempt from survey requirements. A transitional period of around five years would allow vessel owners to plan for the change over time and reduce its financial impact. AMSA should not maintain grandfathering of survey requirements through marine orders or exemptions.

A new survey regime for domestic commercial vessels commenced on 1 July 2018. Before this date, domestic commercial vessels were required to undergo annual vessel survey (except where grandfathering or an exemption applied). Changes to the survey regime include:

- reduced periodic survey requirements for the majority of DCVs (up to once every 5 years)
- expanding the category of vessels exempt from surveys
- more flexibility in the timing of surveys, to ensure that vessel maintenance activities can be better aligned with the surveys.

The changes simplify regulations and better align survey requirements for DCVs with the risk of individual vessels. However, there are concerns about how AMSA has determined the risk profile of particular types of vessels.

In particular, AMSA's lack of comprehensive data about the domestic commercial vessel fleet makes it difficult to accurately determine the risk profile of particular types of vessels. This lack of data will also likely frustrate future efforts to assess the impact of the vessel survey reforms on safety outcomes.

Data collection and reporting (maritime)

The public information for safety outcomes among domestic commercial vessels is sparse. This lack of data likely reflects several factors, including:

- no national statistics on domestic commercial vessels were compiled before AMSA became the national regulator, as such vessels were under State and Territory jurisdiction

- underreporting of safety incidents by operators
- research bodies such as the Bureau of Infrastructure, Transport and Regional Economics report extensively on road safety but not maritime safety
- as the DCV fleet covers several industries, it is not straightforward for DCV industry bodies or other regulators to keep a complete set of safety data specific to DCVs.

The Commission considers that the published safety data for the domestic commercial vessel industry, including by AMSA as the national regulator, are insufficient.

Safety data are necessary to provide a basis for comparison between outcomes under the national regulator and previous State and Territory regulators, and to provide accountability for the national system. AMSA should not only work to improve incident reporting by industry participants, but also improve the depth and detail of its published data.

Approach to compliance costs (all modes)

The regulators do not approach the measurement and analysis of compliance costs in systematic ways. ONRSR conducts stakeholder surveys which contain information relevant to the issue but does not monitor, assess and publish the results. The NHVR is aware that there are significant compliance costs from aspects of its activities but does not report on these costs. Similarly AMSA does not monitor and report on compliance costs.

As a matter of accountability, each of the national regulators should be required to monitor compliance costs in some way, and report regularly on the level and change in these costs. Accountability through transparency should be complemented by regulators' ongoing commitment to reduce compliance costs in ways that are consistent with improving safety outcomes.

A forward-looking policy agenda for transport

The 2009 COAG reforms focused on establishing three national regulatory regimes. However, the role of government in influencing safety (and productivity) outcomes is much broader than creating a new regulator (figures 6 and 7). The overall 'regulatory system' perspective takes account of the multiple regulatory regimes and a range of public institutions, across several areas of policy. This 'system-wide' view is valuable when considering how the many aspects of regulation and policy might work together to improve safety outcomes. For example, the productivity and efficiency of transport are primarily influenced by policy and institutional decision making outside the purview of safety regulators, including the management and provision of infrastructure.

Below are some of the key issues to be addressed in a forward-looking policy agenda for transport safety and productivity. These include emerging issues that have become more prominent in the past decade, or will likely become prominent in the near future.

Figure 6 **The roles of government in influencing safer practices**

Figure 7 **The roles of government in influencing productivity**

Road infrastructure provision and utilisation

Heavy vehicle productivity is dependent on many issues related to infrastructure provision, management and utilisation. Well-functioning mechanisms for managing road access allow carriers to complete transport tasks using higher productivity vehicles, and increase the degree of certainty around ongoing investments in the vehicle fleet. For access management to function well, infrastructure managers need to make timely decisions based on the technical aspects of road assets. This requires infrastructure managers to have sufficient knowledge of their road assets, as well as the necessary engineering skills and decision-making capabilities.

Underlying these processes is the requirement for infrastructure managers to balance various objectives, including the effects of heavy vehicle access on transport productivity and road maintenance costs, as well as aspects of public amenity and safety. Also of relevance are the mechanisms seeking to ensure that road managers have adequate funding for infrastructure provision and maintenance, and that road users contribute adequately to road funding. A balance is required between the demand for more infrastructure and the cost of providing it, with consideration for road users' valuation and willingness to pay.

These relationships suggest two things. First, road infrastructure managers are at the centre of planning, building, and maintaining the road network, and facilitating its efficient use by road users. Second, a set of interconnected reforms will drive improvements to the productivity of our road system.

Progress on road infrastructure provision, utilisation and funding arrangements

Presented in this report are compelling arguments for reform to road infrastructure arrangements. While there are a range of potential approaches, choices will need to address some key considerations (box 3).

Several aspects of reform have advanced or are underway. For example, a small scale on-road trial (140 vehicles) of heavy vehicle road pricing commenced in July 2019, largely to test whether existing telematics technology can measure mass and distance effectively. A larger scale trial involving up to 1000 vehicles will commence in 2020. The Commission supports these initiatives.

Valuable work has also commenced in researching and understanding how pricing for heavy vehicle charges might work in practice. Public consultations have been held on the prospect of independent price regulation with respect to heavy vehicle charges. There have been multiple reports into Heavy Vehicle Road Reform and price-setting models. One issue being debated is whether road infrastructure provision is best delivered by government departments or more independent institutional structures such as statutory authorities or government owned corporations.

Box 3 **Key considerations in choosing road provision and funding models**

The provision and funding of road infrastructure can be considered in terms of the following key road-related tasks:

- setting overall road-related outcomes, undertaking project appraisals, and deciding on the aggregate level of expenditure on road provision
- deciding how that expenditure is to be allocated between different projects — new construction, and the rehabilitation and maintenance of existing roads
- supervising project delivery to ensure decisions have been implemented efficiently
- charging for the use of roads to achieve more efficient use of the infrastructure.

The way these tasks are undertaken can differ considerably, depending on the institution responsible for undertaking the task and how performance is monitored.

The model of road funding and management should:

- seek to strengthen links between road-related revenue to road-related expenditure. This would help to determine road users' preferences and willingness to pay for road infrastructure services.
- involve the adoption of well-designed institutional and governance arrangements.

Institutional arrangements for road provision and management

Ensuring the efficient, long-term management of infrastructure requires appropriate allocations of responsibility, accountability, and resources. The Commission has canvassed a range of institutional models (each with its own merits) that could be used by State and local governments (box 4).

The institutional arrangements for road provision and management are likely to become more important. New and emerging approaches to road infrastructure management include various uses of telematics data (discussed below). Such approaches would benefit from both scale (that is, pooling data) and technical expertise (for example, in data management and analysis).

Box 4 **Different approaches to road infrastructure management**

There are four broad institutional models that are used, or could be used, in the roads sector.

- *Departmental model* — a model of project selection and management and allocation of road funding by governments, with earmarking of road-related taxes and charges used to fully fund roads on an economically sustainable basis.
- *Road fund model* — project selection, and management and allocation of road funding undertaken by a separate dedicated entity that operates at arm's length from government on an economically sustainable basis. This approach was proposed by the Commission in its inquiry into Public Infrastructure, and is currently in operation in New Zealand.
- *Corporatised public road agency model* — public road authorities (integrating all tasks relating to road funding and provision) are run on a more economically sustainable basis using both funding from governments and revenue raised from direct charges on road users, with those charges and road service standards overseen by a regulator.
- *Private provision model* — private ownership and provision of roads (such as the road concession model).

Variations and hybrids of these models are also possible. For example, the road fund model could also include the tasks of funding and provision of infrastructure services in the one entity, in which case it would have some similarities to the corporatised public road agency model.

Intermodal freight efficiency

The importance of efficiency across modes of transport is highlighted in the Freight and Supply Chain Strategy. In submissions to this inquiry, stakeholders from the rail industry discussed intermodal substitution between heavy vehicles and rail freight, arguing that shifting more of the freight task from road to rail could improve safety and reduce road congestion.

At the outset, it should be recognised that the choice of mode is a commercial decision, and government regulation should be neutral between transport modes. Businesses will select the mode which best meets their needs. As road and rail transport have different strengths, they are imperfect substitutes. Much of the freight load on major routes is not contestable, and in many cases road and rail act as complementary modes of transport. Where competition is possible, the relatively agile nature of road transport means that rail is unsuitable for all freight tasks and is less efficient when there is double and triple handling over relatively shorter distances. This makes it difficult to estimate the degree of substitutability, given that it is not possible to assume that all traffic observed on a highway could be replaced by rail.

Nevertheless, competition between road and rail does occur on long distance freight routes. In situations where rail freight replaces road freight, there are likely to be safety benefits associated with moving larger amounts of freight on dedicated lines, away from general road traffic. It is difficult to provide meaningful estimates of such benefits, given the limitations listed above and the dynamics of innovation in both rail and road transport. In particular,

innovations in safety equipment and safety technology are progressing more rapidly in road transport due to the volume of road traffic in Australia and overseas.

An efficient outcome in intermodal freight would need to balance many factors relating to: the planning and building of freight-related infrastructure; the potential for regulatory costs to cause distortions to intermodal competition; and access arrangements. Regulatory measures which seek to shift more freight from road to rail are likely to be counterproductive by imposing large efficiency costs on freight transport and the community. A focus on safety and innovation across all modes of transport is more effective, less costly, and leads to improved safety.

Allowing transport safety regulation to evolve

Many submissions to this inquiry have discussed the merits of prescription and risk-based regulation.

The choice of regulatory approach is not mutually exclusive (figure 8). A mix of prescriptive and risk-based measures is required, reflecting the nature of the safety risks and allocating these to the party best able to manage them.

Placing more emphasis on risk-based management in safety regulation requires regulators and industry to develop stronger skills in some areas (for example, risk assessment, accreditation) and apply data-driven strategies to identify and manage risks. In other cases, risk based management is too complex and, usually for the operator, prescriptive rules may be the least cost option and have the advantage of being simpler for business to comply with and for regulators to enforce.

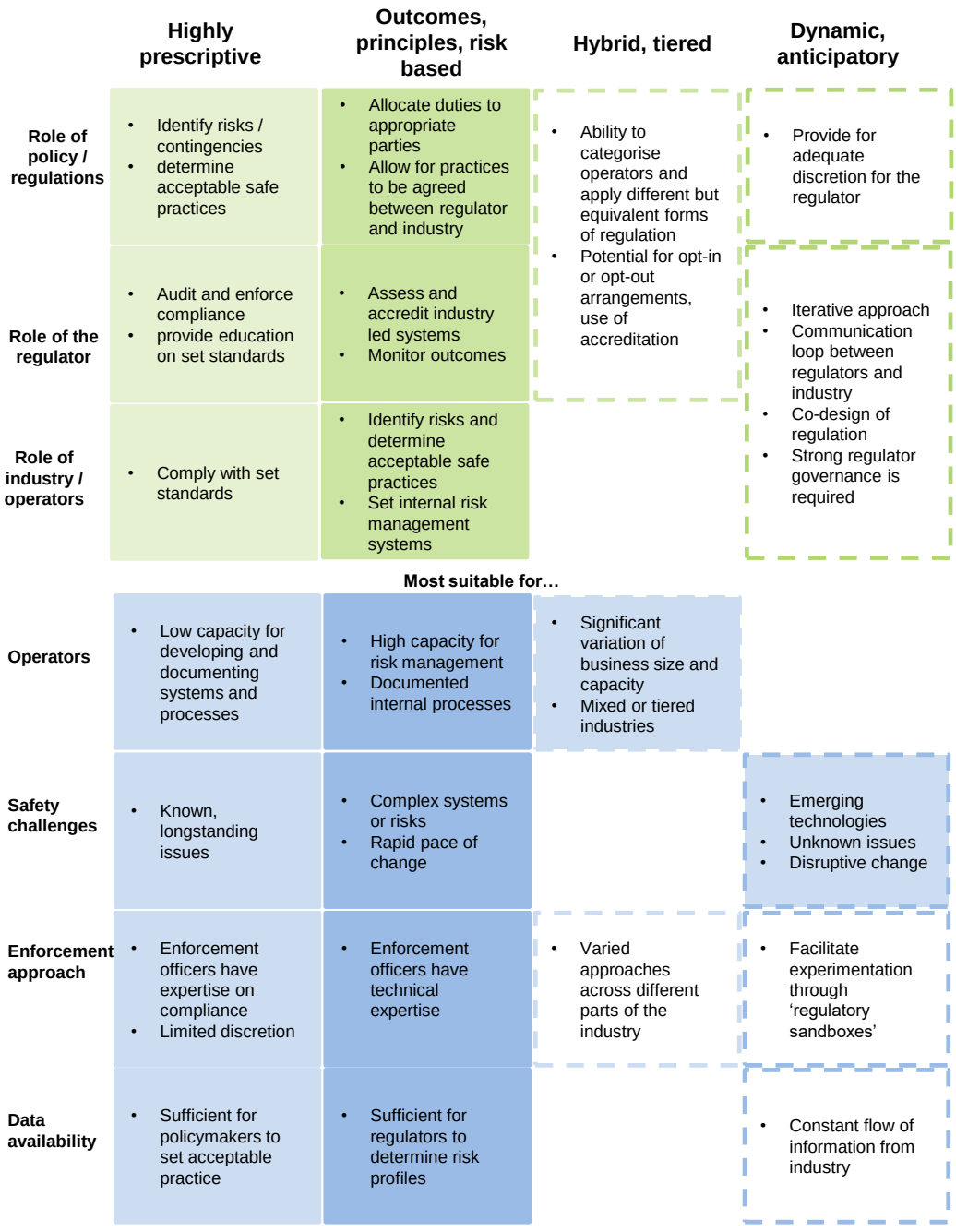
As far as possible, a decision to use prescription or a risk-based measure should take into account which party is best placed to understand and control the safety risk, and the costs of doing so.

Focusing on safety outside the commercial transport sector

Significant improvements to transport safety outcomes could be made by improving behaviours outside of the commercial transport industry. Data from the National Transport Insurer suggests that, in a significant proportion of major heavy vehicle accidents, other road users are at fault. Among multi-vehicle incidents in 2017 which did not involve a fatality, the heavy vehicle driver was at fault 65 per cent of the time. For fatal multi-vehicle crashes, the heavy vehicle driver was at fault less than 20 per cent of the time.

State and Territory Governments should seek to improve the behaviour of general road users when sharing the road with heavy vehicles.

Figure 8 **Various models of safety regulation relevant to transport**



Improving incident investigation

In the transport sector, investigation is conducted by various agencies such as:

- police forces, to determine any immediate criminal liability

- for fatal accidents, State and Territory coroner's offices to identify the persons who died, the cause of death and the circumstances surrounding the death
- bodies such as the Australian Transport Safety Bureau (ATSB) to determine the technical causes of the accident, and to publish findings and policy recommendations aimed at improving safety.

Each form of investigation serves a critical role in improving safety outcomes through the prevention of future accidents.

The so called 'no-blame' or 'no-fault' investigation is the approach of the ATSB. This provides valuable information to policy and regulatory decision-makers. It is important that the ATSB's capacity to investigate incidents and accidents in the various modes is sufficiently resourced in addition to its current responsibilities.

The full potential of incident investigation to improve safety outcomes has not been realised in the current system. In heavy vehicle regulation, the introduction of no-blame investigation would improve policy decisions. The ATSB should undertake a clearly defined pilot of incident investigation for heavy vehicle transport, with adequate additional resourcing for the task. This should involve analysing safety data to define a narrow set of potential incidents for investigation.

Furthermore, the role of the ATSB in investigating maritime incidents involving domestic commercial vessels was not resourced at the time of the COAG reforms. Similarly, the ATSB's ability to investigate rail incidents and to contribute to better safety policy would be improved with appropriate resourcing.

In addition, the ATSB's remit should be expanded to allow an investigative role for transport accidents involving self-driving technologies, regardless of the mode of transport. This would contribute significantly to ensuring safety standards during the trial and introduction phases of these technologies.

Safer and more productive transport technologies

The age of transport equipment and the technology embodied in it can have implications for safety and productivity. More frequent renewal of fleets increases the use of new safety equipment. Using new technologies can also reduce operating costs and lead to productivity improvements for industry.

Some unintended barriers to the supply of safe vehicles to the Australian market are creating disincentives for operators to update their safety technologies. For example, Australian Design Rules (ADRs) can prevent the use of unmodified imported trucks. Regulations around heavy vehicle mass and width limits result in drivers removing safety equipment from imported vehicles to save weight or reduce width. Part of the success of the PBS scheme appears to be that it allows new designs to sidestep ADR processes.

The Australian Government should minimise the regulatory burden associated with adopting new technologies by permitting access to technologies adopted in other leading economies.

Enabling interoperability will also be important, given that Australia is likely to be a net importer of these technologies. The ADRs and in-service vehicle standards should be updated to allow for the expedited uptake of new and internationally approved transport technologies, including automated technologies. Given that Australia is a relatively small market, COAG should aim for national and international consistency of laws and standards where practicable.

Harnessing transport data to improve safety and productivity

The Commission considered various aspects of data access in its 2017 inquiry into Data Availability and Use. The inquiry found that 'improved data access and use can enable new products and services that transform everyday life, drive efficiency and safety, create productivity gains and allow better decision making'. There are various challenges for policy throughout the data lifecycle (figure 9).

Vehicle telematics can deliver significant productivity and safety benefits for a range of parties. However, some of these benefits, such as improved revenue collection and infrastructure planning, do not accrue to private parties. There may therefore be a role for government to encourage the uptake of telematics. Data capabilities will be central to the ability of regulatory regimes to shift to more modern approaches, and for infrastructure managers to adopt more efficient processes (both discussed above).

Facilitating data generation and collection

While technological developments have exponentially increased the potential to generate and share transport data, in practice, both of these activities remain somewhat of a bottleneck. In some cases, mandatory compliance has been effective (for example, the Vessel Monitoring System required of off-shore fishing vessels). Where operators are free to opt into generating and sharing data, adoption has been patchy and slow to gain momentum (for example, in-vehicle telematics).

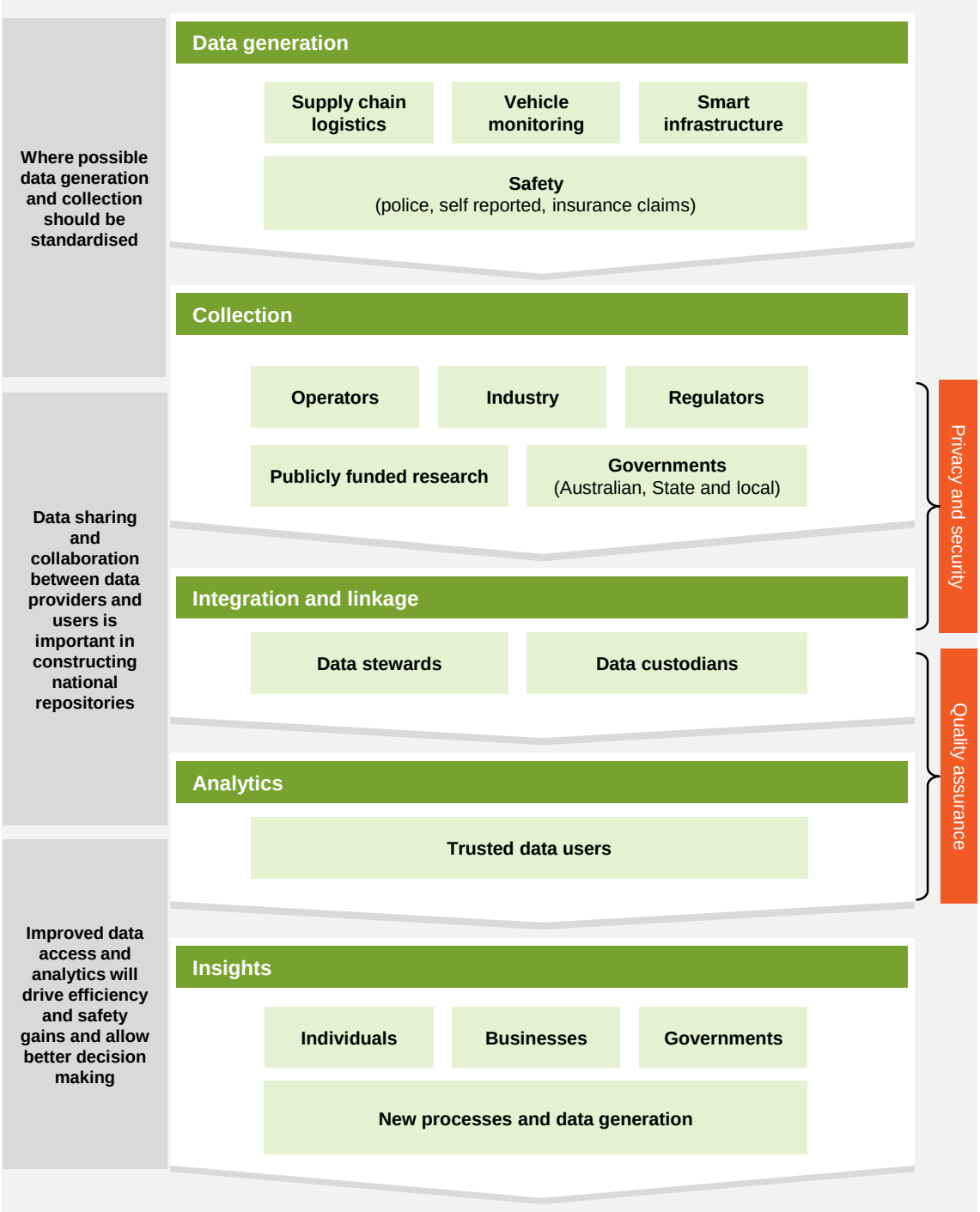
The benefits of networked systems risk being underprovided if systems depend on businesses to opt in, or if consensus is required for coordination purposes. For example, smaller operators may lack the capability to collect and/or use telematics data. These operators may have no incentive to do so, since the benefits of tracking and optimising the use of a relatively small fleet may be minimal.

Government policy can influence the adoption of telematics. The NTC highlighted several mechanisms for accelerating the uptake and use of telematics, including: technology trials, awareness campaigns, adoption of technologies into vehicle and design standards, updating government fleets and by offering regulatory, financial and productivity incentives. In the

heavy vehicle sector, a number of national initiatives encourage the use of telematics through the National Telematics Framework.

It is likely that the willingness of businesses to invest in generating and sharing their data will depend on how the data might be used.

Figure 9 **The transport data lifecycle**



Data sharing and integration

Telematics data is collected by a range of parties and used for a variety of purposes. While some of the potential benefits of this data are specific to the individual operator, there are larger, broader benefits from the collection and integration of data across many operators.

Uncertainty exists around how third parties should access telematics data. Governments and regulators should facilitate the adoption of technologies by operators to generate and share data by providing legal assurances about the acceptable use of such data, and clarifying the value proposition to individual operators of their participation in data sharing regimes. The data access powers of regulators, enforcement agencies and accident investigation bodies should be clarified to enable these bodies sufficient access to undertake their respective tasks, without compromising privacy and confidentiality.

There is likely to be significant value in consolidating data in a central repository. Data should be collected from all parts of the industry with appropriate privacy and competition protections. The National Freight Data Hub announced by the Australian Government should be accessible to all parties in the industry, with appropriate privacy restrictions.

Technical capabilities alone should not determine enforcement approaches

The Commission has heard relatively consistent anecdotal evidence of recent experiences with data systems, showing that some in the industry have concerns that the use of data in safety regulation could lead to heavier-handed, more interventionist enforcement.

As discussed above, the approach to safety regulation (and its evolution over time) should be determined by the characteristics of industry and the nature of regulatory challenges. Regulators should not move to a more interventionist enforcement regime simply because the technical capability is available.

Data-sharing arrangements should be designed to allay industry concerns about heavier-handed enforcement. This could involve legal assurances restricting the uses of data. More broadly, appropriate safeguards will be critical if there is to be wider acceptance of the use of telematics.

Using transport data for infrastructure planning, research, and policy purposes

Access to a greater quantity and quality of data should allow users, such as regulators, industry bodies, or research agencies, a greater ability to create risk management tools or advice. This is likely to be increasingly valuable as regulations become more outcomes-based, and more onus is put on operators to make decisions about safety management.

Telematics technology in particular is improving the potential to monitor heavy vehicle movements. Such data could be valuable in informing funding and resource allocation mechanisms for infrastructure managers.

Another use of data that may add significant value for industry is through research and policy development — particularly in improving safety regulation. Among the three modes of transport at the focus of this inquiry, maritime transport appears to be the least well-served by public research agencies aside from the regulator itself. There is likely to be value in having public agencies outside of the national regulator conducting research into maritime safety.

Conclusion

The harmonisation of transport safety regulation was a practical, co-operative reform to improve safety and lower business costs. National laws and regulators are now largely in place. The next challenges for transport policy will involve building on the foundations laid by these reforms. They include moving to more flexible approaches to safety regulation, progressing changes in infrastructure provision and funding, and harnessing emerging technologies to lift both safety and productivity. Lessons learned from the harmonisation of transport safety will be vital to pursuing further reform.

Draft findings and recommendations

Do we have nationally consistent regulatory regimes?

DRAFT FINDING 4.1

Implementing national transport regulation and establishing national regulators has been slower than anticipated. Both the regulation and the regulators are works-in-progress. Creating a national regulatory system is complex and time consuming, with early expectations proving to be optimistic.

DRAFT FINDING 4.2

There are many derogations by jurisdictions to the national laws. There are over 70 derogations from the Heavy Vehicle National Law and over 80 derogations from the Rail Safety National Law. Some derogations create unnecessary costs and complexity for industry and regulators. These derogations are contrary to the objectives of the Council of Australian Government's harmonisation reforms.

DRAFT RECOMMENDATION 4.1

The Transport Infrastructure Council should request that the National Transport Commission undertake a review of significant derogations from the Heavy Vehicle National Law and the Rail Safety National Law, with the aim of reducing regulatory inconsistency.

The Council of Australian Governments should commit to altering or removing derogations, or altering the national laws, to achieve best practice regulation.

DRAFT FINDING 4.3

Grandfathering was intended to smooth the transition to the Marine Safety National Law. However, open-ended grandfathering maintains the inconsistencies of previous State and Territory regimes, delays the adoption of new safety standards, complicates enforcement and discourages investment in new vessels and equipment.

DRAFT RECOMMENDATION 4.2

The national regulators should phase-out Service Level Agreements (SLAs) with State and Territory agencies by absorbing these functions at the earliest opportunity.

Where there is a business case to use SLAs with third parties, those parties should act under the direction of the national regulators to ensure consistent decisions across jurisdictions.

DRAFT FINDING 4.4

Despite having one national safety law and one national safety regulator, rail operators face differing standards, operating codes and procedures, set by rail network owners. Differences across networks create costs and delays for above-rail operators.

Has harmonisation of transport regulation improved safety?

DRAFT FINDING 5.1

There have been significant improvements in heavy vehicle safety over the past decade, with the number of heavy vehicle crashes involving injury or death per kilometre travelled decreasing by about 40 per cent between 2008 and 2018. The fall in crash rates is consistent with longer term trends and is likely to be due to factors affecting all vehicle types such as improvements in road infrastructure and safer vehicle design.

DRAFT FINDING 5.2

Most multi-vehicle fatal crashes involving a heavy vehicle are not the fault of the heavy vehicle driver — in 2017, the driver of the other vehicle was at fault 83 per cent of the time. For serious, non-fatal, multi-vehicle crashes involving a heavy vehicle, the heavy vehicle driver was at fault 65 per cent of the time (2017).

DRAFT RECOMMENDATION 5.1

State and Territory governments should seek to improve general road users' understanding of driving safely in the vicinity of heavy vehicles through education and enforcement measures.

DRAFT FINDING 5.3

The lack of effective mutual recognition of heavy vehicle accreditation between Western Australia and the jurisdictions that have adopted the Heavy Vehicle National Law is counter to the objectives of the harmonisation agenda and does not promote safety. Operators bear the costs of meeting the requirements of different jurisdictions.

DRAFT RECOMMENDATION 5.2

The Council of Australian Governments should amend the Heavy Vehicle National Law to give the National Heavy Vehicle Regulator (NHVR) greater scope to provide concessions from prescribed aspects of fatigue management regulation, where the NHVR is satisfied that more effective systems of fatigue management are in place, such as technology-enabled management systems, and/or accredited management systems.

Driver fatigue laws should continue to set outer limits on driving hours.

DRAFT RECOMMENDATION 5.3

The Council of Australian Governments should commission an independent review of the fatigue management laws applying in the rail sector to examine the scope for further harmonisation. This could be included in the broader review into derogations proposed by this inquiry (draft recommendation 4.1).

INFORMATION REQUEST 5.1

The Commission is seeking additional information about the operation and effectiveness of the Rail Safety National Law in relation to interface agreements, including:

- *the extent to which interface agreements are contributing to better safety outcomes*
- *options that could improve the negotiation process, and the extent to which risks are appropriately shared between road managers and rail operators.*

DRAFT RECOMMENDATION 5.4

The Australian Maritime Safety Authority should improve:

- incident reporting by owners of domestic commercial vessels
- its public disclosure of safety incidents by increasing the depth and detail of reported incidents.

Reporting should include a state-by-state and vessel-type breakdown of fatalities and injuries.

The Australian Government should request and fund the Australian Transport Safety Bureau to conduct investigations and publish research on safety incidents and accidents among domestic commercial vessels.

INFORMATION REQUEST 5.2

The Commission is seeking additional information about the operation of the vessel survey regime, including:

- *the appropriateness of the existing survey requirements for each vessel category*
- *any serious impacts on safety outcomes following the changes to the vessel survey regime.*

DRAFT RECOMMENDATION 5.5

The Council of Australian Governments (COAG) and the Australian Maritime Safety Authority (AMSA) should begin to wind up the grandfathering of safety regulations under the Marine Safety National Law (MSNL), with priority given to ending grandfathered exemptions from vessel survey requirements. AMSA should not maintain grandfathering of survey requirements through marine orders or exemptions.

COAG and AMSA should review all other grandfathering provisions under the MSNL. Unless found to be justified through a transparent, public cost-benefit assessment, all grandfathering provisions should be phased out within the next 5 years.

INFORMATION REQUEST 5.3

The Commission is seeking additional information about the situations where greater clarity is required between the operational jurisdiction of national transport regulators and workplace health and safety regulators and overlaps in their responsibilities. What options for rectification would be desirable?

Have the COAG reforms raised productivity?

DRAFT FINDING 6.1

Constraints around local government investment capacity and engineering expertise are limiting the effectiveness of the heavy vehicle reforms by preventing adequate assessment and upgrading of bridge and road infrastructure.

DRAFT RECOMMENDATION 6.1

Local governments should share engineering expertise and agree to consistent access arrangements for shared roads. The Australian Government should work with States and Territories to encourage this collaboration. States and Territories should report to the Council of Australian Governments in early 2020 on the status of this work.

DRAFT FINDING 6.2

The complexity of the vehicle classifications has limited the progress of faster access approvals, through permits, pre-approvals and notices.

DRAFT RECOMMENDATION 6.2

The Australian Government should seek simpler heavy vehicle classifications through the National Transport Commission's review of the Heavy Vehicle National Law for the purposes of access decisions. Additionally, the National Heavy Vehicle Regulator should provide more detailed and effective guidelines to road managers.

DRAFT FINDING 6.3

The National Heavy Vehicle Regulator (NHVR) has a well-developed information system that allows for effective management of its operational commitments. The NHVR is taking a strategic approach to the collection and use of data and this will allow it to target its activities better. It will also be able to drive broader policy change to improve productivity and safety.

DRAFT RECOMMENDATION 6.3

The National Heavy Vehicle Regulator should continue improving its data management processes, including how data are stored, integrated, analysed and reported.

DRAFT FINDING 6.4

The productivity gains from the reforms so far are much less than expected, although there is scope in the future for greater improvements as Performance-Based Standards vehicles become a larger proportion of the heavy vehicle fleet.

DRAFT FINDING 6.5

There is scope to rapidly increase the number of gazetted routes, reducing the need for permit applications. In many cases, permit approvals are given as a matter of course for certain vehicle types; these approvals should be replaced with as-of-right access by gazette.

DRAFT RECOMMENDATION 6.4

The Council of Australian Governments should direct road managers (including the state road authorities) to work with the National Heavy Vehicle Regulator to rapidly expand key freight routes covered by notices and allowing as-of-right access for larger vehicle types. The focus of this work should include:

- expanding the networks available for heavy vehicles with performance characteristics equivalent to B-doubles (including Performance-Based Standards (PBS) level 2A and 2B B-doubles) and type 1 and 2 road trains (including PBS equivalents)
- where there are classes of vehicles for which permit applications are almost universally approved, developing notices covering these vehicles
- meeting infrastructure requirements such as truck stops and logistics centres near major urban centres, allowing larger vehicles to be broken down into smaller units where required by urban road network constraints.

DRAFT FINDING 6.6

Data on the compliance costs for businesses for the three national regulators are not routinely collected, monitored and published.

DRAFT RECOMMENDATION 6.5

The National Heavy Vehicle Regulator, the Office of the National Rail Safety Regulator and the Australian Maritime Safety Authority should monitor the compliance and administrative costs created by the national regimes and report on the level and change in these costs in periodic (say 3 yearly) reporting. The first report should be published in 2020 to establish benchmark costs.

DRAFT FINDING 6.7

There is little evidence at this stage that compliance costs for businesses have fallen. Each regulator is pursuing changes that should help reduce costs in the future.

DRAFT FINDING 6.8

The Chain of Responsibility reforms appear to be resulting in greater focus at all parts of the supply chain on compliance systems. However, the proliferation of in-house systems may raise the compliance burden for transport contractors. Industry could play a stronger role in determining common standards for the heavy vehicle industry. In the rail industry this role is undertaken by the Rail Industry Safety and Standards Board.

Assessing the national regulators

DRAFT FINDING 7.1

The prescriptive approach of the Heavy Vehicle National Law impedes the National Heavy Vehicle Regulator from administering the law consistently with the Council of Australian Governments' objectives. A more outcomes-based approach to legislation and regulation would improve road safety, reduce the burden of compliance and administration, and increase the efficiency of road transport.

The National Transport Commission, which is reviewing the Heavy Vehicle National Law, is well placed to recommend improvements.

DRAFT RECOMMENDATION 7.1

The Australian Government should lead efforts through the Transport and Infrastructure Council to reform the Heavy Vehicle National Law. It should encourage State and Territory governments to remove prescriptive material from the legislation and to include an explicit mandate for the National Heavy Vehicle Regulator to take a risk-based approach to its functions.

DRAFT RECOMMENDATION 7.2

The Transport and Infrastructure Council should agree to have all regulatory functions still held by participating jurisdictions transferred to the National Heavy Vehicle Regulator no later than 1 January 2022.

DRAFT RECOMMENDATION 7.3

The Transport and Infrastructure Council should direct the National Heavy Vehicle Regulator to undertake the comprehensive collection and reporting of key safety risks and outcomes, similar to the Office of the National Rail Safety Regulator's annual *Rail Safety Report*.

INFORMATION REQUEST 7.1

Is the wording of the Marine Safety National Law an impediment to effective enforcement by Australian Maritime Safety Authority? Would a positive requirement that operators 'must ensure' safety be more consistent with providing the regulator with the powers it requires?

DRAFT FINDING 7.2

The broad scope of the Australian Maritime Safety Authority's responsibilities is an impediment to effective regulation of domestic commercial vessels. Safety regulation of 'Hire and Drive' recreational vessels could be undertaken effectively by State and Territory government agencies, which already regulate similar vessels that are not used for commercial activities.

DRAFT RECOMMENDATION 7.4

The Australian Government should negotiate with State and Territory governments to return responsibility for regulating Class 4 Domestic Commercial Vessels (Hire and Drive) to State and Territory agencies.

The Council of Australian Governments should consider the benefits and costs of returning regulatory responsibilities for other vessel types to State and Territory governments.

INFORMATION REQUEST 7.2

Are there activities within the Australian Maritime Safety Authority's responsibilities that the Council of Australian Governments should consider returning to State and Territory oversight?

Transport technology and data

DRAFT RECOMMENDATION 8.1

The Australian Government should amend the Australian Design Rules and in-service vehicle standards to allow for new transport technologies, including automated technologies, with proven productivity or safety benefits. The Australian Government should aim for national and international consistency of laws and standards where practicable, and accept safety devices adopted in other leading economies. The Council of Australian Governments should investigate whether a 'deemed to comply' approach would be practical for some technologies.

DRAFT RECOMMENDATION 8.2

The Australian Government should co-operate with stakeholders including Transport Certification Australia when developing the National Freight Data Hub. The Hub should include a regulatory framework for the collection, storage, analysis and access of transport data, including telematics data. This framework should specify the data access powers of regulators, enforcement agencies and accident investigation bodies, and should enable these bodies sufficient access to undertake their respective tasks, while protecting privacy and confidentiality.

DRAFT RECOMMENDATION 8.3

The Australian Government should impose a general safety duty on all parties with a significant influence over the safe operation of autonomous transport technologies. The creation of a general safety duty should not preclude the use of prescriptive rules where the assessed risks are high.

A reform agenda for safer transport

INFORMATION REQUEST 9.1

The Commission is interested in further information regarding the safety implications of commercial contracts in the industries covered by the Heavy Vehicle National Law (HVNL), Rail Safety National Law (RSNL), and the Marine Safety (Domestic Commercial Vessels) National Law (MSNL). In this regard, the Commission would be interested in understanding the effectiveness of safety duties applying to various businesses through the supply chain (for example, Chain of Responsibility, Workplace Health and Safety).

DRAFT FINDING 9.1

While some of the potential benefits of logistics data are specific to the individual operator, there are larger, broader benefits from the collection and integration of data across many operators. These broader benefits risk being underprovided if data generation and sharing are not facilitated.

DRAFT RECOMMENDATION 9.1

Governments (and their agencies) and industry should consider how best to harness logistics and telematics data to improve incentive-based safety regulation, with the aim of influencing behaviours that increase safety and productivity.

Governments and regulators should aim to facilitate the adoption of technologies by operators to generate and share data by:

- providing legal assurances about the acceptable use of such data
- clarifying the value proposition to individual operators of their participation in data sharing regimes.

INFORMATION REQUEST 9.2

To what extent are changes needed to the administration of the Marine Safety National Law, workplace health and safety regulation, and environmental regulation of fisheries? How might the interface between regulators and operators be made more effective?

INFORMATION REQUEST 9.3

To what extent are heavy vehicle drivers receiving adequate on-the-job training, and informal guidance from more experienced to less experienced drivers?

If a more formal training system were to be devised, what would this look like, and should training requirements target the newly licensed or should it also include incumbent, experienced drivers?

DRAFT RECOMMENDATION 9.2

The Australian Government should direct the Australian Transport Safety Bureau (ATSB) to undertake a defined, targeted trial of incident investigation for heavy vehicles, with adequate additional resourcing for the task. Subject to the successful outcome of the trial, the Government should amend the *Transport Safety Investigation Act 2003* to confirm investigation of incidents involving heavy vehicles as a function of the ATSB.

DRAFT RECOMMENDATION 9.3

The Australian and State and Territory Governments should:

- formalise the role of the Australian Transport Safety Bureau to investigate all serious incidents involving domestic commercial vessels, and agree a funding model to support this role
- agree to a funding model to enable the Australian Transport Safety Bureau to adequately carry out its established role in the investigation of rail safety incidents.

DRAFT RECOMMENDATION 9.4

The remit of the Australian Transport Safety Bureau should be extended to include any incident where autonomous technologies at or above SAE level 3 autonomy may have been involved.

A reform agenda for transport productivity

DRAFT FINDING 10.1

Some local governments are struggling to deliver timely heavy vehicle access assessments. While resourcing is important, more resources alone will not guarantee greater efficiency. Other factors including access to data and appropriate technical skills, and economies of scale in permit applications also contribute to greater efficiency.

DRAFT RECOMMENDATION 10.1

The Council of Australian Governments should provide support to ensure local government has the financial and technical capacity to deliver its role as asset manager for local roads. Transparency and accountability of performance should accompany any additional support, particularly with respect to processing times for access permits and the use of notices to gazette heavy vehicle routes.

This should be pursued in the context of broader changes under the Heavy Vehicle Road Reform agenda.

DRAFT FINDING 10.2

There are different approaches to cost recovery in each of the three modes, from near full cost recovery in rail, to very limited cost recovery in heavy vehicles and maritime. The amount of government funding received by each national regulator reflects these arrangements.

DRAFT RECOMMENDATION 10.2

The national regulators (particularly the National Heavy Vehicle Regulator and the Australian Maritime Safety Authority) should move towards cost recovery arrangements in line with the Australian Government Cost Recovery Guidelines. Consistent arrangements across the three transport regulators will eliminate the risk of distorting intermodal choices.

INFORMATION REQUEST 10.1

What productivity-related issues could be better progressed in rail freight? What institutional arrangement would be valuable in driving the productivity agenda in rail, and if such changes involve the Office of the National Rail Safety Regulator, what would its role be?