The costs of increased police enforcement of Abnormal Loads regulations

A Cebr report for the RHA, HTA, BH&HPA and NCC

May 2024

*

Disclaimer

Whilst every effort has been made to ensure the accuracy of the material in this document, neither Centre for Economics and Business Research Ltd nor the report's authors will be liable for any loss or damages incurred through the use of the report.

Authorship and acknowledgements

This report has been produced by Cebr, an independent economics and business research consultancy established in 1992. The views expressed herein are those of the authors only and are based upon independent research by them.

London, April 2024

Contents

Background

This report explores the economic impact of the inconsistent application of rules – both on the road haulage sector and on related sectors that it serves. The knock-on effects to other parts of the economy include impacts on the following sectors: tourism, housing, manufacturing, and construction. The direct impacts on other industries include delayed project deliveries, as hauliers are restricted in moving vital loads.

Road haulage is an important sector to the UK Economy, directly contributing £15.5bn GVA and making up around 1.13% of total UK GVA. Abnormal loads are a key part of the UK's Road haulage sector and the focus of this regulatory impact assessment. Abnormal loads are a key part of the UK's Road haulage sector and the focus of this regulatory impact assessment.

The Road Haulage Association (RHA), in particular, are deeply concerned that an increasing number of police forces are excessively enforcing embargos on the movement of Special Types General Orders (STGO) and abnormal loads. This is causing costs to both hauliers as well as end beneficiaries.

RHA survey data indicates that the number of objections to notification requests has significantly increased. Moreover, whilst some statutory bodies will try to work with operators to get the job done, others are less accommodating.

Since Autumn 2022, the Road Haulage sector has observed that certain police forces have imposed de-facto enhanced regulatory regime. This has entailed increased enforcement embargoed time, which restricts the movements of vehicles that move Abnormal loads. This has led to a large increase in operating costs that the Road Haulage industry faces as well as knock on effects to both the public sector and other industries that are serviced by the Road Haulage sector.

Firms have reported that certain police forces have become much less flexible regarding the changing of dates for approvals and much less willing to accept short-notice movements. This represents a significant deviation from legislative guidance, with this occurring in the absence of industry consultation. Transport bodies are also concerned at the emergence of this more aggressive approach by police forces in their enforcement of regulations on moving abnormal loads.

Whilst accepting that a level of advance notice and enforcement is necessary for traffic management and road safety, heavy restrictions on movements, stringent early notification requirements and blanket embargoes are causing significant practical difficulties and unsustainable financial strain on operators, impacting business viability.

The key constabularies where problems have been experienced are the following:

- Greater Manchester
- Merseyside
- Cheshire
- Humberside
- Staffordshire & West Midlands

- East Anglia
- London Metropolitan
- North Wales

Revert to 2020 scenario

The baseline scenario is the level of enforcement prior to the upscaling of enforcements.

Do Nothing – keep the status quo

The alternative option is to remain with the current status quo. This impact assessment will measure the impact of not reverting to the previously established level of enforcement.

Issue under consideration

Evidence Base Background

Since 2022 the Road Haulage sector has observed that certain police forces have imposed de-facto enhanced regulatory regime. This has entailed increased enforcement embargoed time, which restricts the movements of vehicles that move Abnormal loads, and increased refusals of short notice notifications or amended notifications. Moreover, there has been, amongst certain constabularies, an insistence on specific model descriptions of loads. This has led to a large increase in operating costs that the Road Haulage industry faces as well as knock on effects to both the public sector and other industries that are serviced by the Road Haulage sector.

This report explores the economic impact of the inconsistent application of rules – both on the road haulage sector and on related sectors that it serves. The knock-on effects to other parts of the economy include impacts on the following sectors: tourism, housing, manufacturing, and construction. The direct impacts on other industries include delayed project deliveries, as hauliers are restricted in moving vital loads.

Together, these changes have made it more difficult to not only make movement but also to obtain movement orders.

A key issue is that there is variation in the nature of enforcement between police forces. For instance, RHA research has found that whilst Merseyside Police and North Wales Polic will reject any movement order over three days, Greater Manchester is more reasonable but still rejects anything over 10 days. This is often challenging as other areas will tend to accept 30 days on a movement order. This has impacts on industry because many industry clients are not used to planning so far ahead. Thus, the unwillingness of police authorities to accept short notice movements is having detrimental effects on the end customers i.e., UK industry.

Moreover, the enhanced restrictions on the hours of movements mean that less loads can be delivered per day. This has a direct impact of lowering revenue levels for road haulage operators. Manchester is the region that is presenting the biggest cause of concern in relation to the enhanced enforcement of embargoes.

Whilst accepting that a level of advance notice and enforcement is necessary for traffic management and road safety, heavy restrictions on movements, stringent early notification requirements and blanket embargoes are causing significant practical difficulties and unsustainable financial strain on operators, impacting business viability.

Road Haulage is an important sector to the UK Economy, directly contributing £15.5bn GVA and making up around 1.13% of total UK GVA. Abnormal loads are a key part of the UK's Road haulage sector and the focus of this regulatory impact assessment. Many other sectors of the economy are serviced by the Road Haulage sector and are indirectly impacted by this enhanced enforcement.

Firms have reported that certain police forces have become much less flexible regarding the changing of dates for approvals and much less willing to accept short-notice movements. This represents a significant deviation from legislative guidance, with this occurring in the absence of industry consultation. Transport bodies are also concerned at the emergence of this more aggressive approach by police forces in their enforcement of regulations on moving abnormal loads.

The Geographical areas

The key constabularies where problems have been experienced are the following:

- Greater Manchester
- Merseyside
- Cheshire
- Humberside
- Staffordshire & West Midlands
- East Anglia
- London Metropolitan
- North Wales

The analysis below has been undertaken in a way to focus on the activity in these regions, where a change in police behaviour has been identified.

Wider Industry Impacts

The costs associated with the change in behaviours are not only borne by road hauliers but also related industries that are served by the road haulage industry. Whist police forces have to ensure safety, the negative costs of the inconsistent+ application of regulations are likely to significantly exceed the perceived benefits. Moreover, these costs do not appear to be factored in by those police authorities that have changed the application of the regulations without consultation with the industry. This is a de facto market failure, as these wider costs, over and above the costs borne directly by the police forces, are not being factored in given that police forces have no incentive to do so.

The industries of focus are the following:

- Manufacturing
- Construction (including Housing)
- Tourism
- Rail (HS2)
- Agriculture
- Power generation

The recommended policy response

To ameliorate the net negative impacts on both the road haulage sector and the wider impacts on a range of industries, two (non-mutually exclusive) solutions should be considered by the government. Firstly, a consistent and harmonised approach should be established nationwide, supported by a universal early notification and route planning system.

In the interim, those constabularies that have recently unilaterally increased their level of enforcement of the regulations should revert to their previous level of enforcement and properly engage with industry to determine the case for any potential changes and the wider impact of stricter enforcement.

Economic Assessment

Introduction

The analytical approach undertaken is to conduct an economic appraisal that aligns with the government's regulatory impact assessment framework. The enhanced restrictions on abnormal load and STGO movements are interpreted as a de facto regulatory change – an imposition of increased regulatory oversight.

A range of potential adverse and beneficial impacts will be assessed and be converted into monetary terms in accordance with the government's Green Book economic appraisal guidance and the general regulatory impact assessment framework. The assessment is over a standard 10-year appraisal horizon.

Description of options considered

Revert to 2020 scenario

The baseline scenario is the level of enforcement prior to the upscaling of enforcements.

Do Nothing – keep the status quo

The alternative option is to remain with the current status quo. This impact assessment will measure the impact of not reverting to the previously established level of enforcement.

Annual profile of monetised costs and benefits – (£m) constant prices (2023 prices)

Monetised Costs

Description and scale of key monetised costs by 'main affected groups'

A. Costs to hauliers

I. Increased costs of notifications and staff time

The increased requirements to produce and amend notifications of movements have led to increased financial and time costs for haulier companies. Examples of this impact include increased refusals to consider less than two days' notice and enhanced imposition of standard embargo times. This has meant that more staff time to handle the notifications process and a higher number of notifications must be produced and processed.

These increased costs are having significant impacts on road haulage firms. For instance, evidence gathered by the RHA has shown that the impact of increased movement rejections and the additional associated extra administration has required the recruitment of extra office staff for firms. This, in turn, has led to these increased costs being passed on to customers in the form of higher prices. The feed-through of increased costs is monetised in a further section below. Whilst the costs of vehicle purchase and increased employment of administrative staff are not explicitly captured, their impact is indirectly captured below through the estimation of increased

administrative costs borne by road haulage companies due to need to provide an increased number of notifications. Moreover, there will be increased costs to the public sector which now has to process an increased number of notifications.

A Heavy Transport Association survey asked the following question: Some Police Authorities are now requesting more specific information to be included on a movement order: Has this had a direct impact on the number of movements order you now submit? If so, how many? Here are some sample responses:

- *'Yes, it adds to the application process and the information required needs to be uniform across the country and not just to one or two Police forces.'*
- *'Yes - and I would like to highlight Manchester & Merseyside Police as the most difficult, unresponsive and unhelpful forces across the UK.'*
- *As a result of the additional information requirements from Greater Manchester Police and North Wales Police, the direct impact to hauliers is our ability to forward plan jobs across the M62 corridor by Greater Manchester and within the North Wales boundaries.'*
- *'I am happy to include the load description on the movement order, however the level of required information again differs with each Police Authority.'*
- *'We are having to send multiple notifications for the same movement to ensure that we can utilise any vehicle within the fleet, where previously we would use 1 registration and "Or Substitute".'*
- *'Yes, literally thousands of repeated requests with slight amendments that other authorities throughout the country don't require.'*

A number of Police authorities are refusing short notification unless it is an emergency. Does this have a direct effect on your abnormal load movements?

- *Yes, as we often only receive short notice from our customers so sometimes have to turn away work.*
- *Yes, as they do not understand how infrastructure projects work the site may be winded off, they may be ahead / behind schedule and need to re-organise The Police are very short sited when it comes to trying to keep costs of projects reduced.*
- *Yes, because we are all human and sometimes people do make genuine mistakes or maybe a customer who organizes something is off ill so sometimes a short notice is required, we try to speak to areas, but they will not allow the movement we move*

food machinery especially in the harvest time and machines break down they still won't allow the movement as its not classed as a national emergency.

- *Yes, we have some customers who require short notice movements, Mobile CT Scanners being one such load.*

- *Yes, but always has had effect on us. Customers do not always give enough notice and expect immediate service.*

A Heavy Transport Association asked the following question: Are you considering reducing the number of abnormal load movements or taking a business decision to stop all abnormal load movements. Here are some sample responses:

- *'For an easy life, yes, I would like to - but as we are a specialist Heavy Haulage Firm who have invested Millions £ in the specialist Trucks & Trailers we cannot stop moving Ab Loads. We have to continue trading and offering a quality service as best as we can, but the inconsistency of rules/regulations is making the industry very difficult and creating additional costs on every job.'*

- *'No but we can certainly see why people will, this is having a major impact on the UK economy and costing UK manufacturing a missive disadvantage when having to travel through certain areas.*

- *'No, it's the core of our work. We have too much invested in equipment to withdraw service.'*

- *'No, as we specialise in abnormal loads, but it has had an effect on keeping drivers because of loss of hours/pay.'*

These answers are indicative of the general responses received in relation to this question. They indicate that extra costs have been generated and borne by the road haulage companies or passed on to customers to be able to deliver the same number of loads but with increased regulatory burdens.

II. Calculations and assumptions

It is estimated that the volume of total notifications has seen a significant uptick. According to data sourced from Road Traffic statistics provided by the Department of Transport, the average mileage for heavy goods vehicles has remained steady from 2019 to 2022. Contrastingly, data obtained from the National Highways reveals a noteworthy surge in notifications, with figures climbing from 228,860 in 2019 to 516,421 in 2023, marking a just over twofold increase to 287,561. Given that the ESDAL system from the National Highways captures only a portion of these notifications, an assumption has been made to double the count to 575,122, thereby

encompassing the entirety of the observed notification increase. It is assumed this is due to the increased restrictions of particular police forces.

The supplementary notifications have been broken down according to haulage activity rates in respective constabularies/ geographical areas.

The increase in notifications has time cost implications for road haulage firms. Cebr assumes a time cost of 30 minutes per notification for constabulary. The time costs reflect the increased time costs to public sector workers who must process the increased volume of notifications.

The total increase in notifications is scaled downwards to focus in only on those areas primarily affected by the de facto regulatory change. To estimate the total hours spent on processing notifications, a multiplication of the time cost per notification by the additional notifications, broken down by constabulary, was conducted. Furthermore, a financial cost assumption of £30 per notification was made. The total financial impact resulting from increased notifications is computed by multiplying the additional notifications per affected constabularies by the financial cost per notification.

The analysis of the increased notifications presents a notable time cost impact on road haulage firms, with a total cost of £1.65 million per annum across the specified constabularies. This increase in notifications, indicates a substantial burden, particularly evident in Staffordshire & West Midlands, where the cost reaches £695k Moreover, the financial cost amounts to £5.6 million per annum. The proportional distribution of costs among regions underscores the varying degrees of influence the regulatory change has on localities, emphasising the need for targeted strategies to address the economic and operational challenges faced by affected hauliers in specific areas.

An appraisal of costs was also conducted over a 10-year period with a discount rate of 3.5% in accordance with the HM Green Book. The **time cost of £14 million** serves as a critical metric in assessing the economic viability of adapting to the heightened regulatory demands. This high cost associated with the increased requirements for producing and amending notifications of movements has significant implications for haulier companies.

B. Carbon Dioxide Emissions Impacts

As hauliers of abnormal loads start to take longer routes to avoid problem areas this creates additional CO2e emissions. To estimate the additional emissions from extended journey times, we first determine the increased journey length for each relevant constabulary. Our methodology leverages data from the Department of Transport, specifically focusing on kilometres covered by heavy goods vehicle in the UK. This is then broken down by constabulary using the activity rates from road traffic data from the Department of Transport. A key assumption in our analysis is that a quarter of movements within the identified impact areas would encounter an increased journey length. The estimated increase in journey length is calculated, expressed in terms of vehicle kilometres.

Subsequently, we leverage the UK Government GHG Conversion Factors for Company Reporting dataset to obtain the kgCO2e / km for articulated vehicles greater than 33 tonnes, set at 1.0445 kgCO2e per km. This factor is then applied to the increased journey length for each constabulary enabling us to estimate the CO2e impacts associated with the extended routes taken by hauliers of abnormal loads. To monetise these CO2e impacts the UK TAG book was leveraged and we utilised the 2024 carbon price of £293.84 per tonne of CO2e. This is multiplied by the kgCO2e emission for each relevant constabulary. Following that, to understand marginal impacts a high and low estimate was conducted of 10% and 5% respectively.

The marginal increase in emissions; from the high, central, and low scenario are **£48.8 million**, **£36.6 million,** and **£24.4 million** respectively. The appraisal of the CO2e impacts for the high and low scenario for a 10-year appraisal period with a discount rate of 3.5% are **£420 million, £315 million,** and **£210 million** for the high, central, and low scenario respectively.

C. Reduced activity

An RHA survey has found that a significant proportion of respondents have faced wasting time due to less movements being permissible. Respondents from the ARHA survey has experienced a reduction in the work they can accept so this negatively impacts their revenue and profit. Impacts can include being parked up for days on end due to incorrect paperwork along with additional financial parking costs. This has meant that some jobs can take twice as long to complete. Evidence gathered by the RHA indicates that many firms have faced a reduction in the amounts of loads that can be delivered, for instance, a reduction of 20 percent has been found in a year following the increased restrictions.

To quantify the total working hours lost due to increased notifications volume, several key steps were undertaken. Leveraging the ASHE dataset, we first computed the average weekly hours worked by land transport drivers within the relevant constabularies. Assuming a 48-week working year, we then determined the average yearly hours worked by multiplying the weekly average by 48. Derived from survey data, we obtained high and low estimates reflecting the absolute change in driver downtime due to increased notification volumes — four hours per week for the high estimate and two hours per week for the low estimate.

Maintaining the assumption of a 48- week working year, the change in driver downtime was then scaled to an annual perspective. Revisiting the ASHE dataset allowed us to ascertain the hourly rate of a driver's salary. Using the total number of drivers of abnormal loads, the hourly wage rate and the yearly change in driver downtime, an estimation of the total working hours lost by area, considering for both the high and low scenarios was calculated.

The economic impact stemming from decreased activity for hauliers is significant, amounting to **£171 million** per annum in the high scenario, **£128 million** for the central scenario, and **£86 million** per annum in the low scenario. These figures correspond to a projected downtime of four hours per day in the high scenario and two hours per day in the low scenario. When looking at the appraisal of costs over a 10-year period with a discount rate of 3.5%, this equates to **£1.5 bn** for the high scenario, **£1.1 billion** for the central scenario, and **£736 million** for the low scenario.

D. Industry impacts

Overall, there will be increased enforcement which has meant a restriction on the amount of work that each vehicle can undertake over a given day or week. Additionally, hauliers of abnormal loads have started to take longer routes to avoid problem areas this creates additional time spent travelling which is a cost to hauliers. This increases the costs, which are passed on to the customers, which include key industries, such as construction.

The economic costs to end users due to lower econom4ic activity are here assessed.

The key affected sectors are the following:

- Manufacturing
- Construction (including Housing)
- Tourism
- Rail (HS2)
- Agriculture
- Power generation

Adverse impacts to Industry – A qualitative discussion

We now discuss qualitatively the adverse impacts that the de facto enhanced regulation has had on industry. In general, delays in the movement of goods and people can disrupt supply chains and thereby reduce productivity.

Manufacturing

Increased regulations on abnormal loads road haulage can lead to disruptions in the supply chain for manufacturing industries. Manufacturers rely on timely delivery of raw materials and components, and any delays or restrictions in transportation can hinder production schedules. This causes increased lead times, production bottlenecks, and higher costs associated with inventory management.

Manufacturers will, as a result, experience cost escalation due to the need for alternative transportation methods or re-routing of deliveries to comply with the enhanced regulations. Moreover, as abnormal loads transportation becomes more expensive and limited, manufacturers face higher transportation costs, impacting their overall market competitiveness.

Construction (including Housing)

Construction projects likewise rely on the timely delivery of heavy machinery, equipment, and materials transported as abnormal loads. The increased regulatory constraints will result in delays in project timelines, leading to increased costs and potential contractual disputes between stakeholders. Moreover, construction firms are likely to face increased overruns as a consequence of complying with the enhanced regulations. Additional expenses related to transportation, storage, or alternative logistics solutions are likely to significantly impact project budgets, especially for large-scale developments.

Infrastructure projects, such as road construction or maintenance, are likely to be directly affected by regulations targeting abnormal loads transportation. Restrictions or limitations on hauling heavy equipment or materials may necessitate adjustments in project planning, potentially leading to revised timelines and budgetary allocations.

Regulations influencing the cost and availability of construction materials can indirectly impact housing affordability. If construction costs rise due to constrained abnormal loads transportation, developers may pass on these expenses to homebuyers, exacerbating affordability challenges in the housing market.

Tourism

Increased de facto regulations on abnormal loads road haulage impacts tourism by affecting the accessibility of tourist destinations and the overall visitor experience. Tourist attractions, particularly in rural or remote areas, rely on the transportation of heavy equipment or materials for maintenance, construction, or event setups. Restrictions on abnormal loads transportation therefore leads to logistical challenges and delays in infrastructure projects, potentially deterring tourists or diminishing the quality of their experiences.

Tourism contributes significantly to local economies through spending on accommodations, dining, attractions, and retail. Any disruptions in tourism activities resulting from regulatory changes in abnormal loads transportation can have ripple effects on businesses reliant on tourist spending. Reduced visitor numbers or alterations in travel patterns due to logistical constraints may lead to revenue losses for hotels, restaurants, shops, and tour operators, particularly in destinations heavily reliant on tourism revenue.

Rail (HS2 - High-Speed Rail)

High-speed rail projects involve extensive construction activities, requiring the transportation of large quantities of materials, equipment, and machinery. Regulatory changes impacting abnormal loads road haulage will influence the logistics planning and execution of these types of rail construction projects, necessitating adjustments in supply chain management, site access, and transportation routes. HS2 is the largest European infrastructure project in progress, and increased restrictions related to checking details has been found, by the RHA, to have impacted the ability to provide supplies. Given that can entail the missing of booked slogs, this can then lead to knock on cost impact to the haulage operator, for instance if there is an unexpected requirement to run with police escorts accompanying the loads, or if there is a delay which leads to contractual charges from the end client.

Agriculture

Increased regulations on abnormal loads road haulage disrupt agricultural supply chains, affecting the timely delivery of inputs such as machinery, fertilizers, and animal feed. Farmers rely on efficient transportation to maintain production schedules, and any delays or restrictions in hauling oversized or heavy loads are likely to hinder farm operations, leading to potential yield losses or reduced productivity.

Agriculture is a sector sensitive to input costs, and additional expenses incurred due to compliance with stricter regulations on abnormal loads transportation can strain

farm budgets. Farmers may face higher transportation costs for moving equipment, livestock, or harvested crops, impacting their profitability and competitiveness in domestic and international markets. Moreover, increased costs associated with alternative logistics solutions or compliance measures could further erode farm incomes.

Power generation

The power generation industry is also dependent on the road haulage sector, and in particular, the need for deliveries of abnormal loads. The de facto increased regulations imposed on the abnormal loads road haulage sector will have an impact of causing delays in equipment and materials deliveries as well as supply chain disruptions. This results in delays in the delivery of equipment that is critical for power generation projects. Additionally, there are adverse impacts on supply chains which are disrupted and can lead to knock-on disruptions to on-going projects being delivered, thereby increasing costs.

A Heavy Transport Association asked the following question: Embargoes have been in place for a number of years but not enforced as they are today: How is this change to enforcement now effecting your business? Here are some sample responses:

- *'Greatly. wasting valuable hours in the day sat around.'*
- *'It restricts the amount of work that each vehicle can undertake per day / week, and therefore causing us to increase prices to customers.'*
- *'This has increased our costs significantly. We have had to purchase more vehicles and staff to ensure the same amount of daily movements are being made.'*
- *'Massive cost implications, whereby drivers are not able to work to their full capacity days, still costing me as the business operator money in Wages, Extra Charges on Motorway services for parking, not to mention the poor facilities for drivers on the UK Roads they are faced with during the Embargoes.'*
- *'A great impact to cost as we have to put 1 extra day onto many jobs because by the time the embargo finishes at night the Highway authority put many road closes not long after.'*
- *'Loss of operating time meaning less moves can be completed so loss in revenue.'*

Costs to Industry

A. Increased journey lengths – high input costs

Our methodology leverages data from the Department of Transport, with specific focus on kilometres covered by heavy goods vehicle in the UK. A key assumption underpinning our analysis is that a quarter of movements within the identified impact areas would encounter an increased journey length. The estimated increase in journey length is calculated, expressed in terms of vehicle kilometres.

Subsequently, we estimated impacts associated with a 5% and 10% of the increased journey length, representing high and low scenarios, respectively. These figures were then multiplied by the per-kilometre rate for vehicles weighing over 44 tonnes, estimated at £1.71 per kilometre. This calculation underscores industry-wide impacts amounting to £135.9 million annually in the low scenario, to £203.8 million annually in the central scenario and £271.8 million annually for the high scenario.

To examine the impacts of the affected sectors, we utilised the Supply and Use dataset from the National Statistics, providing a comprehensive breakdown of both transport and total expenditure by industry. Within this dataset, we calculated the GVA proportion reliant on the transport sector for each affected sector. The ratio of the transport expenditure for each affected sector relative to the total transport expenditure for impacted sectors was calculated. Employing this ratio, we delineated the industry impacts by affected sector for both the high and low scenarios.

A different approach was employed in assessing the impacts of HS2, utilising data from the Institute for Government which outlined an estimated cost of £40 billion in 2019 prices.[1] To align with current economic conditions, the Bank of England CPI inflation tool was then applied, resulting in a revised estimate of £49 billion in 2023 prices. The total expenditure to date has been £24.7 billion, leaving a remaining cost of £24.3 billion until the anticipated completion in 2033, translating to an annual expenditure of £2.7 billion.

Drawing insights from the HS2 Cost and Risk Model Report[2] conducted by HS2 Ltd, we calculated the ratio of construction cost to total cost of HS2. Applying this ratio to the annual £2.7 billion cost projected until HS2's completion allowed us to derive the annual construction cost of HS2. Subsequently, to estimate the cost impact of the HS2 sector due to increased regulation on haulier companies, the calculated figure was halved, resulting in an approximate cost of £544 million.

This figure was then fed into the methodology outlined above as an estimate of the transport expenditure relating to the HS2 sector. This comprehensive analysis provides an estimation of the regulatory impact on the haulage sector and its consequential effects on the HS2 construction industry.

These costs are allocated across pivotal sectors in the economy, including Manufacturing, Construction, Housing, Tourism and HS2. The analysis underscores the substantial financial implications for these industries arising from increased enforcement.

In the high scenario, characterised by a 10% increase in costs, the manufacturing sector shoulders most of the cost impacts, amounting to £215 million per annum out of the total industry impacts of £275 million.

In the evaluation of the costs over a 10-year timeframe, applying a discount rate of 3.5% results in a total impact of **£1.2 billion** for the low scenario, **£1.8 billion** for the central scenario and **£2.4 billion** for the high scenario.

[1] https://www.instituteforgovernment.org.uk/explainer/hs2-costs

[2] https://assets.publishing.service.gov.uk/media/5a7490b040f0b61938c7e79a/hs2-cost-and-risk-model-report.pdf

B. Cost of delays calculations

The Gross Value Added (GVA) by location for the affected sectors was derived from the GVA dataset published by the Office for National Statistics, providing a breakdown of GVA for each sector based on affected constabularies. Our specific focus, however, lies in determining the proportion of industry GVA reliant on the abnormal load transport sector, i.e. the expenditure by each sector on transport.

To estimate this, we utilised the Supply and Use dataset from the National Statistics, which offers a comprehensive breakdown of both transport and total expenditure by industry. Within this dataset, we computed the GVA proportion reliant on the transport sector for each affected sector. To calculate the magnitude of GVA associated with the abnormal loads sector, we applied the proportion of abnormal vehicles to total vehicles. This method allowed us to isolate the GVA proportion reliant solely on the abnormal load sector. Additionally, we calculated the ratio of abnormal loads GVA relative to the total UK GVA for each affected sector.

To evaluate the cost of delays we reference the relevant literature estimating that delays equate to 15% of the load's value. We assume that the high scenario anticipates twice as many delays, while the low scenario estimates 1.5 times the number of delays. The cost of delays is computed for each affected constabulary using the GVA for the impacted sectors, multiplied by three key factors: the ratio of abnormal loads GVA relative to total UK GVA for each affected sector, the 15% GVA impact of the value of a delayed load and the assumed percentage of delays in the two respective scenarios.

In the high scenario, examining twice as many delays, the manufacturing sector emerges as the most significantly impacted, with an impact of £119 million per annum across all affected constabularies. Notably, the area most severely affected are concentrated in London, where the annual impact is £16.8 million.

In the low scenario, assessing 1.5 times as many delays, the manufacturing sector once again stands out as the most significantly impacted, registering an annual impact of £60 million across all affected constabularies.

In the evaluation of the costs over a 10-year timeframe, applying a discount rate of 3.5% results in a total impact of **£1.2 billion** for the high scenario, **£884 million** for the central scenario and **£596 million** for the low scenario.

GVA impacts

Gross Value Added (GVA) represents the value created by an industry through its production activities. It is calculated as the difference between the total value of output produced and the total value of intermediate inputs (input costs) used in production. The increase in input costs and the decrease in output directly reduce GVA within the road haulage sector as well as the industries impacted. With higher input costs and lower output levels, value added per unit of output diminishes.

Where there is a reduction in hours worked, due to the more strictly enforced embargo hours, it can be expected that this reduction in hours worked negatively impacts productivity, and therefore GVA is likely to decrease proportionally.

Moreover, as input costs rise, it directly impacts the cost structure of production for businesses within the industries impacted. This occurs for both the road haulage firms and the industries who they serve. The higher input costs lead to a decrease in the industry's profit margin per unit of output. This is because each unit of output now incurs higher costs, reducing the amount of value that can be retained by the industry after covering these expenses. The increase in input costs shifts the industry's supply curve upward, indicating that producers require higher prices to justify the higher costs of production. However, if demand remains unchanged or falls firms may not be able to pass on these higher costs to consumers, resulting in reduced profitability. In summary, the increase in input costs and the decrease in output both contribute to a fall in Gross Value Added within an industry by reducing profitability per unit of output and diminishing the industry's overall contribution to economic value creation.

The GVA losses are taken as the sum of the impacts associated with the reduced activity within the road haulage sector as well as the increased input costs for the industries that utilise their services. The combined annual impact in the high scenario is £584 million per annum and £292 million in the low scenario. The average, central, scenario gives an annual total impact of £438 million to the economy. Over a 10-year period this amounts to a total discounted value of **£3.8 billion** in the central scenario and **£5 billion** in the high scenario.

Table 1. GVA Impacts

Benefits (non-monetised)

I) Reduced traffic Congestion and social disruption

The more strictly enforced embargo times may have a benefit of reducing congestion on roads as vehicles carrying abnormal loads are less likely to be on roads during peak hours. This will thereby increase traffic flow. This reduced disruption will be of benefit to not only road users but also improve the quality of life of local residents. However, this assumes that the increased enforcement does not disproportionately shift traffic away from the strategic road network and onto the local B road network. This shifted traffic could be associated with alternative means of transport that do not adhere to the regulations.

i) Less wear and tear on roads

There are likely to be minor benefits associated with the reduced traffic leading to less wear and tear on road surfaces, bridges, and other infrastructure. More severely enforced embargo times leads to less prolonged exposure of roads to abnormal loads, thereby helping to prevent exacerbated maintenance needs and increased costs for road repairs and rehabilitation.

ii) Enhanced Traffic Safety

One of the primary non-monetized benefits of increased enforcement of abnormal loads sector embargo times is the enhancement of road safety for all road users. By imposing stricter regulations and enforcement measures on the transportation of abnormal loads, authorities aim to mitigate the associated risks of accidents, collisions, and road-related fatalities. However, there is little evidence that this benefit has been realised in practice. According to the data provided by the West Midlands Police, the aggregate number of incidents reported within the region over the span of seven months approximates to 3,000. However, only two percent of these incidents are associated with abnormal loads.

Summary Results

Table 2. Total Welfare Impacts (£ millions)

Notifications											
Time Costs	£2	£2	£2	£1	£1	£1	£1	£1	£1	£1	**£14**
Financial Costs	£6	£5	£5	£5	£5	£5	£5	£4	£4	£4	**£48**
CO2 Impacts											
Central	£37	£35	£34	£33	£32	£31	£30	£29	£28	£27	**£315**
High	£49	£47	£46	£44	£43	£41	£40	£38	£37	£36	**£420**
Low	£24	£24	£23	£22	£21	£21	£20	£19	£19	£18	**£210**
Reduced Activity											
Central	£128	£124	£120	£116	£112	£108	£104	£101	£97	£94	**£1,104**
High	£171	£165	£160	£154	£149	£144	£139	£134	£130	£125	**£1,472**
Low	£86	£83	£80	£77	£75	£72	£70	£67	£65	£63	**£736**
Industry Impacts											
Higher input costs											
Central	£206	£199	£192	£186	£179	£173	£167	£162	£156	£151	**£1,772**
High	£275	£265	£256	£248	£239	£231	£223	£216	£208	£201	**£2,363**
Low	£137	£133	£128	£124	£120	£116	£112	£108	£104	£101	**£1,181**
Costs of delay											
Central	£104	£100	£97	£94	£91	£87	£84	£82	£79	£76	**£894**
High	£138	£134	£129	£125	£121	£117	£113	£109	£105	£102	**£1,192**
Low	£69	£67	£65	£62	£60	£58	£56	£54	£53	£51	**£596**

Year	1	2	3	4	5	6	7	8	9	10	Total
Total - Central	£476	£460	£445	£430	£415	£401	£387	£374	£362	£349	**£4,099**
Total - High	£634	£571	£552	£533	£515	£498	£481	£465	£449	£434	**£5,090**
Total - Low	£322	£289	£279	£270	£261	£252	£243	£235	£227	£220	**£2,575**

Table 3. GVA Impacts (£ millions)

Year	1	2	3	4	5	6	7	8	9	10	Total
Central	£438	£423	£409	£395	£382	£369	£356	£344	£333	£321	£3,770
High	£584	£564	£545	£527	£509	£492	£475	£459	£444	£429	£5,027
Low	£292	£282	£273	£263	£254	£246	£237	£229	£222	£214	£2,513

Conclusion

Given the comprehensive analysis conducted, the economic impact assessment of the enhanced regulatory regime on the road haulage sector reveals profound challenges and repercussions across various industries. The increased enforcement, particularly concerning abnormal loads movement, has triggered a cascade of adverse effects, financial strain and operational constraints on hauliers and significantly impacting key sectors of the economy.

The analysis underscores the substantial financial burden on hauliers resulting from heightened administrative requirements and increased operational costs. For instance, the increased financial costs of notifications and staff time amount to a total financial impact of £16.8 million per annum. Over a 10-year period, this translates to £14 million for time costs. These financial burdens have compelled hauliers to pass on costs to customers, including pivotal industries such as manufacturing, construction, tourism, rail (HS2), agriculture, and power generation. The adverse impacts to these industries are multi-faceted, ranging from disruptions in supply chains to delays in project timelines and increased transportation costs.

Furthermore, the carbon dioxide emissions impacts, with high and low scenarios resulting in annual increases of £48.8 million and £24.4 million respectively, underscore the environmental implications of regulatory inconsistencies. Over a 10-year period, these emissions impacts reach £420 million and £210 million in the high and low scenarios respectively, emphasising the urgency of addressing environmental concerns amidst regulatory changes.

Moreover, the reduced activity for hauliers, as a result of heightened regulatory demands, leads to economic losses of £171 million per annum (high scenario) and £86 million per annum (low scenario). Over a 10-year period, these losses amount to £1.5 billion, £1.1 billion, and £736 million for high, central, and low scenarios respectively.

The largest impacts are associated with the knock on impacts to industry of higher input costs as the cost of lengthened journeys is passed onto the wider industry. Over a 10-year period, these losses amount to £2.4 billion, £1.7 billion and £1.2 billion for high, central, and low scenarios respectively.

Likewise, there are the direct costs of delay in terms of hindering economic activity that relies on the delivery of input materials. Over a 10-year period, these losses amount to £1.2 billion, £984 million and £596 million for high, central, and low scenarios respectively.

A qualitative analysis of industry impacts, coupled with quantitative assessments of increased journey lengths and cost of delays, provides a comprehensive understanding of the economic ramifications. The estimated total impacts highlight the significant financial implications for affected sectors, amounting to billions of pounds over a 10-year timeframe.

While the enhanced regulatory regime aims to enhance traffic safety and alleviate congestion, the realised benefits are limited and overshadowed by the substantial economic costs incurred by industry stakeholders. The non-monetised benefits, such

as reduced traffic congestion and enhanced traffic safety, are mitigated by the disproportionate financial burdens imposed on hauliers and industries reliant on efficient transportation.

In conclusion, addressing these challenges necessitates a balanced approach that prioritises regulatory efficacy while minimising the adverse economic impacts on industry. Collaborative efforts between policymakers, industry stakeholders, and regulatory authorities are imperative to develop targeted strategies that ensure regulatory compliance without compromising economic competitiveness and sustainability. By implementing effective measures and fostering stakeholder engagement, a regulatory environment that supports economic growth, enhances efficiency, and safeguards the vitality of the road haulage sector and related industries.