



THE EFFECTS OF THE LANDFILL TAX AND AGGREGATES LEVY

BY AN ANALYSIS OF AGGREGATES MARKETS SINCE 1990

Prepared for: British Aggregates Association

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Contents

	Page No.
1 Executive summary	3
2 Background	4
3 Aggregates markets since 1990	5
4 Recycled and secondary aggregates	9
5 Use of aggregates in the manufacture of concrete products	10
6 Northern Ireland	11
7 Uses of primary aggregates in the public sector	12
8 European comparisons	14

Graphs

1 Trends in Aggregates, GDP & Construction Output since 1990	6
2 Trends in Aggregates per value of GDP & Construction Output since 1990	6

1 Executive summary

- i) The production of primary aggregates has been falling since 1990. However, it was the introduction of the landfill tax in 1996 that saw the start of primary aggregates production falling behind construction output.
- ii) Other factors resulting in a decline in primary aggregates production have been a decline in road building, a move towards less aggregates intensive building projects, an increase in other forms of construction such as glass and steel, and introduction of the aggregates levy.
- iii) Despite the aggregates levy being only one of a number of factors, the effects of the levy continue to cause great difficulties for the industry. Untaxed virgin slate and shale aggregates have a cost advantage over taxed aggregates manufactured from other rock types. As a result, the levy encourages the transport of untaxed aggregates over greater distances, which has a high environmental cost. Primary aggregates' companies struggle to dispose of poor quality materials and by products which are naturally generated in the quarry. This distortion of the market creates waste in quarries adding to costs which will grow significantly with the introduction of the Mine Waste Regulations this year.
- iv) The value of imported concrete products has quadrupled in the past five years. These products are manufactured from primary aggregates with no levy (mainland Europe) or reduced levy (Northern Ireland).
- v) Despite changes made to the levy in Northern Ireland, the country still has to compete with imported shale aggregates from the Republic which are not taxed. In addition, exports from Scotland, taxed at the full rate, have to compete with Northern Ireland materials at a lower rate.
- vi) The Public Sector pays 55% of the levy raised. Effectively the levy recycles money from one government department to another, raising a relatively small amount of actual income for the Treasury.
- vii) The UK has the highest aggregates recycling rate in Europe, more than twice the levels achieved by France or Germany.

2 Background

This is an independent report prepared by BDS Marketing Research Ltd to identify trends in aggregates markets and the effects of the introduction of the landfill tax and aggregates levy.

The landfill tax was introduced in October 1996, and the aggregates levy in April 2002. Trends have been analysed in three periods:

- i) Between 1990 and 1996, before the landfill tax.
- ii) Between 1997 and 2001, after introduction of the landfill tax but before the aggregates levy
- iii) The period since 2002.

The graphs overleaf show the trend in the production of construction aggregates (excluding aggregates used for industrial purposes) since 1990, with a comparison with construction output and GDP. Aggregates production had been increasing during the 1980's and reached a peak in 1989. Some correction in volumes during the early years of the 1990's could have been expected, but the downward trend in aggregates production has continued over many years.

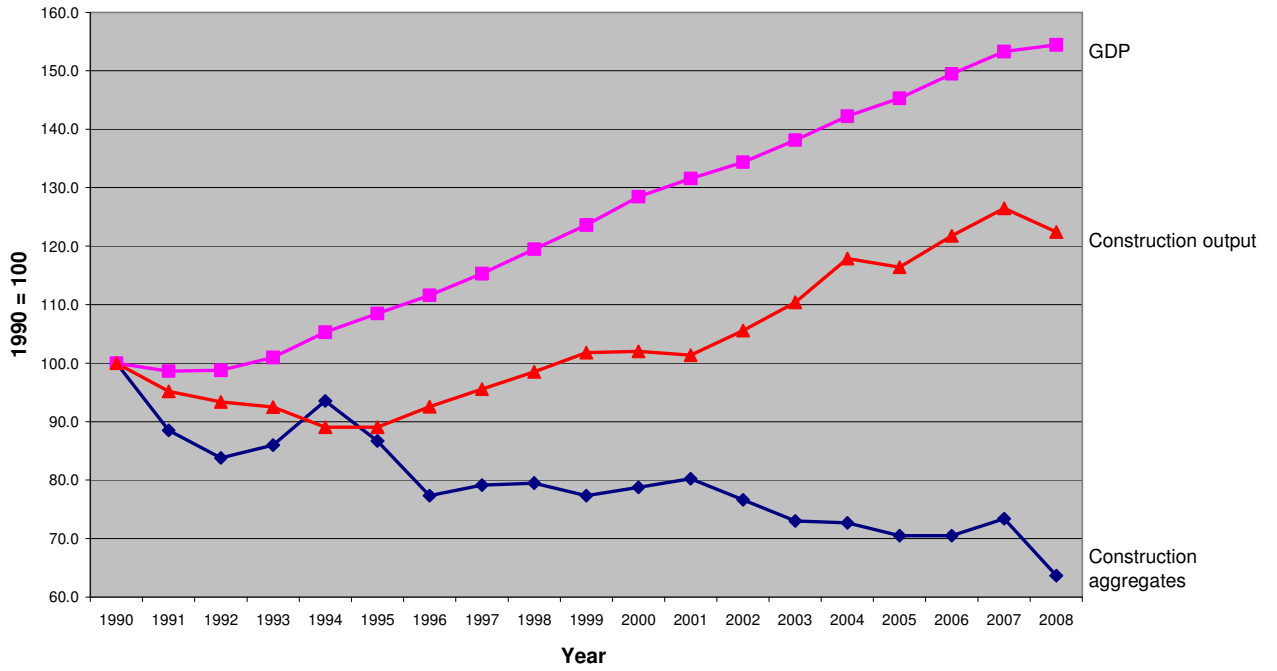
In the period 1990 until 1995, the trend in aggregates production and construction output was similar. However, both indices were lagging behind GDP. Since introduction of the landfill tax in 1996, aggregates output has fallen behind both construction output and GDP.

Introduction of the landfill tax resulted in an increase in waste disposal costs for demolition contractors, skip hire and haulage businesses. To reduce these costs, it was necessary for this sector to establish its own aggregates recycling plants, or to dispose of waste at other plants. These companies now operate over two thirds of all static aggregates recycling plants. Despite the primary aggregates sector being much larger, aggregates companies have established relatively few recycling plants.

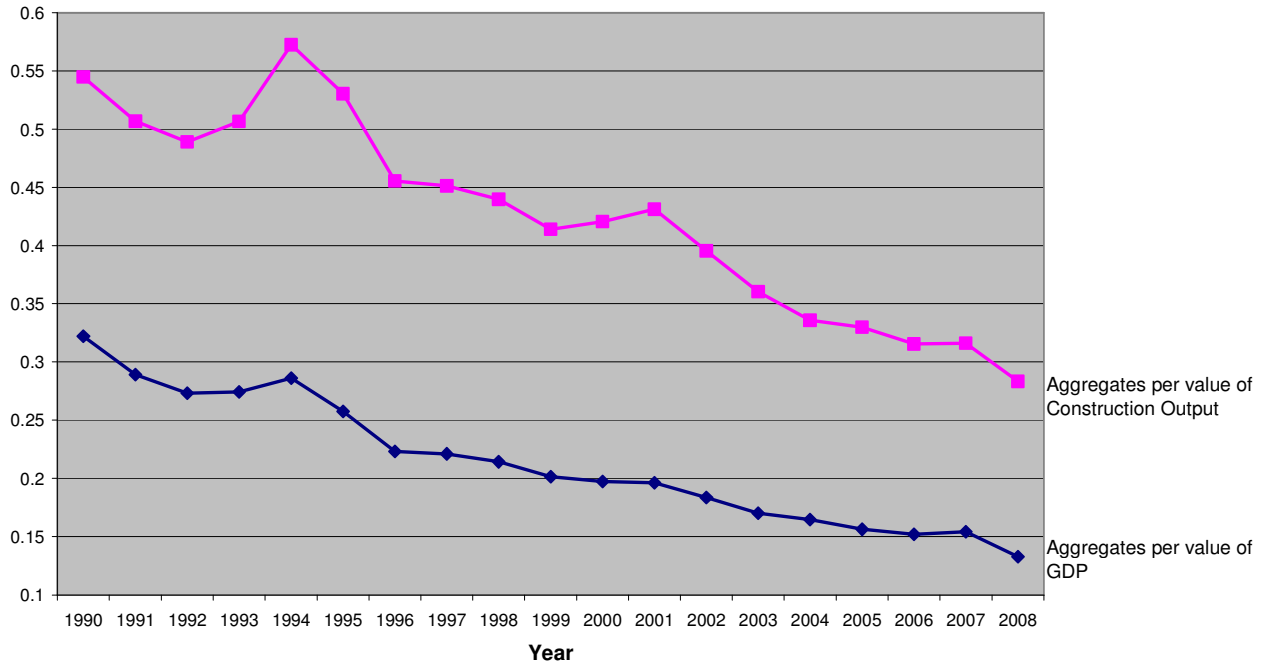
Waste is also reused on demolition sites. No data is available on this market. However, it is reasonable to believe that there has also been an increase in the volumes of waste re-used at building sites.

In addition, introduction of the aggregates levy has resulted in a switch to aggregates that are not taxed. The graph below clearly illustrates that the gap between construction output and (primary) construction aggregates output has widened since 2002.

Trends in Aggregates, GDP and Construction Output since 1990



Trends in Aggregates per value of GDP and Construction Output since 1990



The gap between construction output and primary aggregates demand has worsened in the current recession. Whilst construction output is likely to fall by a maximum of 30%, primary aggregates production will have dropped by 40% or more. GDP will fall by a total of around 5% over the same period.

Total aggregates production in 1990 is estimated at 274 million tonnes, of which primary aggregates represented 95% of the total. In the 18 years to 2008, construction output increased by more than 21%, so total aggregates production should have increased to 330 million tonnes. Yet primary aggregates production over the same period fell by 28%.

Some of the shortfall has been made up by recycled and secondary aggregates. Our estimates show that primary aggregates now represent 75% of the total market:

BDS estimates of the breakdown in construction aggregates markets, 1990 and 2008

	<u>1990</u>		<u>2008</u>		
	<u>m tonnes</u>	<u>%</u>	<u>m tonnes</u>	<u>%</u>	<u>% change</u>
Primary	262	95.6%	188	75.8%	(28%)
Recycled	10	3.6%	52	21.0%	+420%
Secondary	2	0.7%	8	3.2%	+300%
Total	274	100.0%	248	100.0%	-10%

21% increase in construction output
should give aggregates demand at:

330

Shortfall

82

Source: Primary: AMRI, recycled and secondary: BDS estimates

The shortfall is due to:

- i) A number of expensive building projects have required relatively small volumes of aggregates. This boosts construction turnover but has limited impact on aggregates demand
- ii) There has been a general trend towards less aggregates intensive building projects rather than civil engineering, and also repair and maintenance rather than new build.
- iii) There continues to be a move towards steel, glass and other forms of construction, and away from concrete structures. The development of timber frame has been noticeable in the housing market. More than 20% of houses are now built using timber frame instead of traditional masonry construction. This compares with just 5% in 1990. These alternative building materials are often imported. This is at the expense of UK sourced aggregates, with the inevitable impact on UK employment.
- iv) Much of the rise in construction output by value has been from meeting higher requirements for environmental, health and safety issues, which has a very small benefit to aggregates.
- v) The Government has switched expenditure away from road building. This is one of aggregates' main markets.

The actual decline in primary aggregates sales is thought to be larger than the production figures would suggest. Low value aggregates are naturally generated as a by product of the quarrying process. However, these unprocessed (but taxed) materials have to compete with untaxed secondary and recycled products. For example, the extraction of Kentish Ragstone also generates large volumes of Hassock sand. This poorer quality material is taxed but has to compete with imported slags that are untaxed. In other areas, primary aggregates have to try and compete with untaxed materials such as shale and slate. These are delivered from the south west and Wales into larger construction markets such as the south east. This involves long transport distances, at the expense of locally available primary aggregates. Stocks of unsold lower quality primary aggregates have been increasing. This is also an environmental problem. The situation appears to be deteriorating.

4 Recycled and secondary aggregates

In 2008, BDS updated its list of static aggregates recycling plants in Great Britain. This included details of 650 plants. Every company was contacted for information on site address, volumes handled by each plant and the years of operation. Before introduction of the landfill tax, the number of new plants established each year averaged 16. Introduction of the landfill tax resulted in a doubling of the plants established each year. Since introduction of the aggregates levy, there has been only a slight increase in the number of new plants established. This suggests that it was the landfill tax that initiated the growth in aggregates recycling plants, rather than the later aggregates levy.

<u>Period</u>	<u>Number of new aggregates recycling plants established:</u>	
	<u>Total</u>	<u>Average per annum</u>
1990-1996	109	18
1997-2001	164	33
2002-2006	163	33

Secondary aggregates, such as power station ash and slag have been used by the construction industry for many years. The use of slate waste and china clay sand have historically been restricted to local markets, as the cost of transport is high for all types of aggregates. These secondary wastes also have the additional problem of being isolated from the main construction markets. Introduction of the aggregates levy has changed the economics and distorted the market.

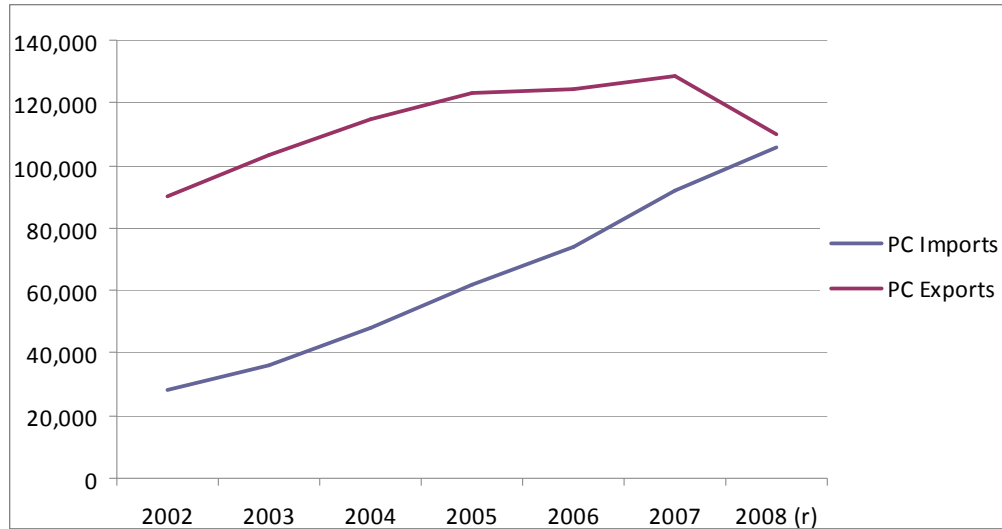
It is now possible to economically supply china clay sand into the south east, and slate wastes into the midlands. However, these movements often involve deliveries in excess of 100 miles. These have serious environmental impacts. The aggregates levy has therefore resulted in a higher environmental cost. Yet the main aim of the levy was to reduce such impact. We estimate that around 8 million tonnes of secondary aggregates are now used in place of primary aggregates. The main increase in recent years has been the development of china clay sand from Devon and Cornwall into the south east. In addition, a company in north Wales has been looking to develop a transport network from Blaenau Ffestiniog to deliver slate into England.

Therefore, our conclusion is that the aggregates levy has not met its objectives. Untaxed aggregates have a cost advantage over taxed aggregates. This distorts the market. It leads to higher environmental cost with untaxed aggregates now being economic to be supplied over much longer distances.

5 Use of aggregates in the manufacture of concrete products

Northern Ireland is a major source of concrete products delivered into the rest of the UK. In 2002, the UK exported over three times as many concrete products as it imported. Over the past six years, the value of imports has quadrupled. Large quantities of concrete pipes, flooring, paving, tiles and other products are now imported into the mainland from Northern Ireland. Mainland Europe also supplies the UK with paving, tiles and bricks:

Import & export of concrete products 2002-2008 (£000)



(Source: Department of Business, Innovation & Skills publication, Monthly Statistics of Building Materials and Components.

6 Northern Ireland

When the aggregates levy was first introduced in Northern Ireland, primary clean aggregates were levied at the full rate, whilst aggregates that went into value added products such as asphalt and concrete were only levied at 20% of the full rate. Later the rules were changed whereby primary aggregates were also levied at the 20% rate.

Aggregates that are exported to the Republic are not taxed (large quantities of sand are supplied from Northern Ireland into the border counties of the Republic because there are few natural sand deposits in that area). However, aggregates from Northern Ireland supplied into the rest of the UK are taxed at the full amount (large quantities of high PSV chippings are shipped in to the London area from Belfast).

Aggregates shipped into Northern Ireland from the UK are taxed at the full rate yet this product has to compete with local stone that is taxed at only 20% of the full rate. (This is particularly relevant in the case of rail ballast supplies that could be supplied from Scottish granite quarries into Belfast).

Despite these changes, supplies of stone are still being imported into Northern Ireland from the Republic, particularly around the Derry City area. These imports do not pay the levy. These materials are shale aggregates which are exempt.

7 Uses of primary aggregates in the public sector

Primary aggregates are used in most sectors of the building and construction industry. Aggregates are used as the sub base in the construction of new roads and maintenance of existing roads. Aggregates are also used in asphalt for road surfacing. In 2006, the Government introduced a policy of having concrete safety barriers on all motorways with more than 25,000 vehicle movements per day, replacing steel barriers. These concrete barriers use primary aggregates.

The Government has been increasing expenditure in the construction of schools and hospitals. These require aggregates as a sub base, drainage media, in asphalt, and in a wide range of concrete and concrete products. These include concrete blocks, mortar, plaster, roof tiles, bricks, paving, kerbs and cladding.

Other publically backed construction projects include the Olympics, 2014 Commonwealth Games and Crossrail.

Housing is another major use for aggregates, both as an aggregate and in a variety of concrete products.

Sea levels are rising and the Government is committed to improving coastal protection. Armour stone – typically aggregates in 1 tonne blocks - is commonly used as a method of coastal protection. Smaller gabion stone is also used in river defence and other environmental schemes.

Our estimate of aggregates useage and the importance of the public sector is as follows:

<u>Sector</u>	<u>% use of aggregates</u>
Road maintenance	17%
Road construction	12%
Schools and hospitals	14%
Public housing	2%
Other publically financed schemes	10%
Total public	55%
Private housing	14%
Industrial	8%
Commercial	14%
Other private	9%
Total private	45%
Total	100%

From these figures it is evident the Public Sector pays most of the Levy raised so that the Treasury is effectively recycling cash in large measure from one government department to another. Expressed in money terms the figures for 2008 are:

<u>Total Levy Paid</u>	<u>£million</u>
185 m tonnes x £1.96 per tonne	362.6
Public Sector (55%)	199.4
Public sector + Private housing (69%)	250.2

There is accumulating anecdotal evidence that the size of the sums involved in the current recession is affecting investment decisions in the public sector. This is impacting directly on sectors such as highway maintenance where there is evidence of significant under-spending over recent years.

8 European comparisons

The UK continues to have levels of recycling well above the European average. Major countries such as Germany and France have recycling rates less than half of the UK. The UK now has a recycling rate of over four times the European average:

<u>Country</u>	<u>Proportion of recycled aggregates to total primary and recycled aggregates production</u>
UK	22%
Belgium	16%
Germany	8%
France	3%
Italy	2%
Spain	0.3%
Total Europe inc UK	5%
Total Europe exc UK	4%

(Source: UEPG)