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**Working Paper**

## Economic aspects of personal injury compensation in Ireland

UCD Centre for Economic Research Working Paper Series, No. WP10/23

**Provided in Cooperation with:**

UCD School of Economics, University College Dublin (UCD)

*Suggested Citation:* McCarthy, Colm (2010) : Economic aspects of personal injury compensation in Ireland, UCD Centre for Economic Research Working Paper Series, No. WP10/23, University College Dublin, UCD School of Economics, Dublin, <https://hdl.handle.net/10197/2656>

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*UCD CENTRE FOR ECONOMIC RESEARCH*

*WORKING PAPER SERIES*

*2010*

**Economic Aspects of Personal Injury Compensation in Ireland**

Colm McCarthy, University College Dublin

WP10/23

July 2010

**UCD SCHOOL OF ECONOMICS  
UNIVERSITY COLLEGE DUBLIN  
BELFIELD DUBLIN 4**

July 2010

# Economic Aspects of Personal Injury Compensation in Ireland<sup>1</sup>

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<sup>1</sup> The author would like to thank Marie Hyland for research assistance and FBD Trust for financial support.

## **Abstract**

Victims of events including road accidents, workplace injuries and medical negligence are compensated in the Irish legal system through once-off lump-sum awards. In cases where victims have suffered incapacitating injuries but have extended life expectancy, these awards include provision for loss of earnings and life-long medical care that can run into millions. Where liability is contested, significant litigation costs also arise, but even where liability is admitted, the determination of quantum is complex, requiring evidence about future medical care costs, loss of earnings, life expectancy and the returns to be expected from the investment of the lump sum award.

The once-off lump sum system of compensating successful plaintiffs has been criticised over the years from both legal and economic perspectives, and change was recommended in a Law Reform Commission report in 1996. Mr. Justice Nicholas Kearns, President of the High Court, established recently a working group to consider the issues involved and charged it to report by November 2010. Since 1995, courts in the United Kingdom have been free to award periodic payments, as distinct from once-off lump sums, where the parties agree, and since the passage of the 2003 Courts Act, whether or not they agree. It is opportune to consider whether periodic payments should be introduced in Ireland and this paper reviews the principal economic aspects of the issue. The paper also considers whether a move to periodic payments would require changes to the government bond market, specifically the issuance of long-dated index-linked Exchequer debt.

## **Key Words**

Compensation awards; catastrophic injury; lump-sum compensation; periodic payments; index-linked annuities.

## Section 1. Compensating Accident Victims in Ireland

Victims of events including road accidents, workplace injuries and medical negligence are compensated in the Irish legal system through once-off lump-sum awards. In cases where victims have suffered incapacitating injuries but have extended life expectancy, these awards include provision for loss of earnings and life-long medical care that can run into millions. Several recent cases have seen settlements of €4 million, €5 million and more. Where liability is contested, significant litigation costs also arise, but even where liability is admitted, the determination of quantum is complex, requiring evidence about future medical care costs, loss of earnings, life expectancy and the returns to be expected from the investment of the lump sum award. Even where quantum-only cases are settled before court hearings commence, substantial legal and expert witness costs may be incurred. Costs can reach 20% of the amount awarded and more. Virtually all costs fall to be met by private insurance companies or by the State Claims Agency in cases where the state or its agencies, including the Health Service Executive, are the defendants.

The once-off lump sum system of compensating successful plaintiffs has been criticised over the years from both legal and economic perspectives, and change was recommended in a Law Reform Commission report<sup>2</sup> as far back as 1996. Mr. Justice Nicholas Kearns, President of the High Court, established recently a working group to consider the issues involved and charged it to report by November 2010. He has outlined his reasons for taking this step in a recent newspaper article Kearns (2010).

Since 1995, courts in the United Kingdom have been free to award periodic payments, as distinct from once-off lump sums, where the parties agree, and since the passage of the 2003 Courts Act, whether or not they agree. It is opportune to consider whether periodic payments should be introduced in Ireland and this paper reviews the principal economic aspects of the issue which arise. These are the design of the compensation instrument, in particular whether it should be lump-sum or periodic and whether defendant or plaintiff should shoulder longevity and investment risk. A further critical element is the measurement of healthcare costs, and in particular whether settlements should be based on a presumption that healthcare costs will rise more quickly than the general rate of inflation. The paper also considers whether a move to periodic payments would require changes to the government bond market, specifically the issuance of long-dated index-linked Exchequer debt.

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<sup>2</sup> Law Reform Commission (1996).

## Section 2. Design of the Compensation Instrument

Many victims in Irish compensation cases have suffered injuries or been inflicted with medical conditions which inhibit their earning capacity, require ongoing medical care, or both. In some cases, these injuries are catastrophic. Cases are often settled several years after the injurious event occurred, and a portion of the lump-sum settlement represents upfront compensation for expenses and loss of earnings already incurred. There can be significant upfront costs awarded depending on the facts of a case. Where there is serious incapacity the award may include an element for modifications to an existing residence or the acquisition of a bungalow, for example. In addition, the courts may award general damages upfront, in addition to the specific provisions for future healthcare, loss of earnings and other items which are called special damages. The High Court decided in 2009 that these general damages would be capped at €450,000.<sup>3</sup> In total the upfront items, including general damages and costs already incurred, could total a quarter or more of the total award, although they are not always separately distinguished in the settlements agreed.<sup>4</sup>

In Ireland, the compensation instrument is a once-off lump sum, often running into millions. Plaintiffs are regularly deemed to have long life expectancies – they include infants who have suffered injuries at birth and young people injured in motor accidents. The lump sum must be invested and the beneficiary draws down regular amounts throughout their remaining life. Clearly the adequacy of the amount awarded will depend on investment returns actually achieved, and on whether the beneficiary survives for a longer or shorter period than was assumed when arriving at the lump sum settlement. There are plausible circumstances in which compensation could turn out to fall short of what the courts intended, for example if the beneficiary survived to a great age or if investment returns were poor. Equally the early demise of the beneficiary or sustained superior investment returns would result in an unintended excess compensation in the form of bequests to the beneficiary's heirs. It is argued below that over- or under-compensation is likely to be widespread under lump-sum compensation.

The alternative of periodic payments now available in the United Kingdom makes it possible for the courts to award, in addition to the once-off sum for the upfront components (general damages and costs already incurred), a recurring payment to last for the beneficiary's lifetime. This removes both investment and longevity risk from the plaintiff and thus reduces the risk of over- or under-compensation. It is also possible to structure periodic payments so that they are indexed to the price level, removing inflation risk also.

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<sup>3</sup> Judgement of Quirke J. in *Yun v MIBI and Tao* (2009) IEHC 318.

<sup>4</sup> The majority of cases do not go to court hearings, but are settled through negotiations between lawyers for defendant and plaintiff. These negotiations are of course influenced by the minority of cases which are the subject of judicial decision.

As a result of a decision in a case heard in 2001<sup>5</sup>, a higher rate of inflation is assumed for future medical expenses than for other future costs, and this is reflected in the assumption of a lower real rate of return (and hence higher capital sum) for the component of costs deemed to be medical. Actual settlements reflect the facts of each case and there can be many additional complexities, but the essence of the determination of quantum for our purposes can be distilled to the following simple equation:

$$S = C + \sum E/(1+r)^t + \sum M/(1+r-m)^t \quad (1)$$

where

S = the lump-sum settlement

C = the upfront capital element, including expenses already incurred and general damages

E = the expected annual future flow of regular non-medical expenses, in constant money

M = the expected annual future flow of medical expenses, in constant money

r = the real rate of return, in excess of general inflation, expected to be earned on the fund

m = the excess rate of inflation expected for medical expenses

t = the time index, running from zero to T, the presumed life expectancy.

The summation is for the period of the victim's life expectancy, from the date of settlement. The flows E and M are taken to be constant for simplicity, although the courts are free to take unequal future payment flows into account and this is often the case in practice. Thus the amounts awarded, whether through decisions of the High Court or as a result of successful negotiations between the parties, require that forecasts be made about the following:

- the life expectancy T of the individual victim;
- the future flow of medical expenses M, in real terms,
- the future flow of non-medical expenses E, in real terms;
- the real rate of return r on the invested lump sum;

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<sup>5</sup> Judgement of O'Sullivan J. in *McEaney v Monaghan County Council and Anor* (26 July 2001). Mr. Justice O'Sullivan's finding regarding medical inflation was not contested.

- the excess rate of inflation  $m$  for medical expenses.

Conducting the calculations in constant money and discounting with a real rather than a nominal interest rate obviates the need to forecast inflation rates, but the list of unknown and unknowable factors is formidable. Plaintiff's legal advisers can argue for assumptions under the headings listed which lead to lump sums as much as double those offered by the defendant's advisers. In 2006, Mr. Justice Quirke, a judge of the High Court, described the process involved as '...looking into a crystal ball' (actually five crystal balls). As a matter of social policy, and bearing in mind that several hundred plaintiffs per annum are the recipients of awards under these arrangements, it is important to see if, from the standpoint of these citizens and in order to reduce the costs of litigation, better compensation instruments can be designed.

The principal issues from an economic standpoint are that the successful plaintiff is being asked to bear the longevity risk; is being asked to bear the investment risk; and it is presumed that medical costs will rise more quickly than prices in general. Even if there is agreement on  $M$  (future medical expenses) and  $E$  (future non-medical expenses), there is great uncertainty about  $T$ , the life expectancy of an individual plaintiff, the variable  $r$ , the real rate of return and  $m$ , the excess inflation rate for medical expenses, any one of which can affect greatly the likelihood of over- or under-compensation.



### Section 3. Longevity Risk and Investment Risk.

Under current Irish arrangements, successful plaintiffs are expected to meet future expenses from the proceeds of invested funds. They are exposed to longevity risk and to investment risk.

#### 3.1 Longevity Risk under Lump-Sum Settlement

For the population as a whole the Central Statistics Office publishes, most recently for 2006, estimates of life expectancy at various ages, separately for men and women. For impaired lives, estimates must rely in addition on medical evidence.

The life tables give a single number, for each age and for men and women. But each of these numbers is the mean of a distribution centred on the figures cited: people die at all ages, as is clear from the table, a simple breakdown of deaths (both genders combined) for the most recent available quarter, namely Q3 2009.

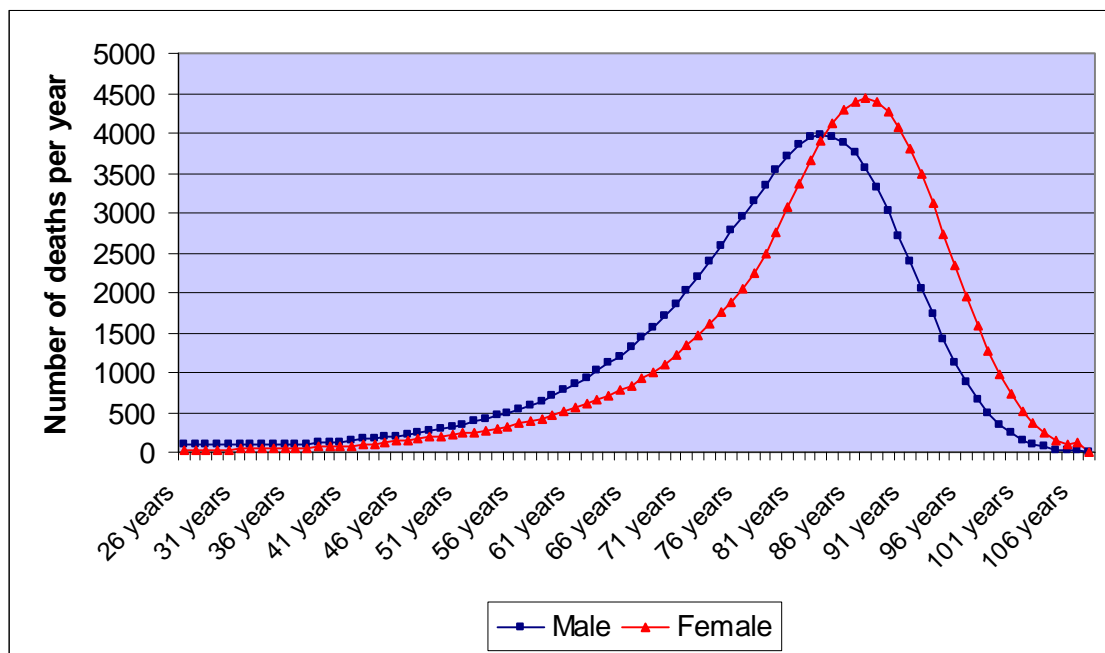
	0 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 to 84	85+	Total
Number	328	203	367	701	1150	2019	1870	6038
% of Total	4.9	3.1	5.5	10.6	17.3	30.4	28.2	100.0
Cumulative %	4.9	8.0	13.5	24.1	41.4	71.8	100.0	100.0

Thus 13.5% of deaths during the quarter occurred to people below the age of 54, and a further 10.6% to those aged between 55 and 64. The improvement in survivorship beyond 85 is also clear – 28.2% of deaths occurred to people aged 85 and older. The ten-year age group 75 to 84, in which mean life expectancy is located for both men and women, accounted for a less than a third of all deaths (30.4%).

Let us assume that the victim to be compensated is aged 25. If male, life expectancy according to the CSO is now 52.8 additional years, which we round to 53. Thus the victim is expected to survive to age 78. If female, an extra 57.2 years can be expected, which we round to 57, so survival would be to age 82.

The fact that individual lives cannot be predicted with any precision gives rise to risks of over-compensation (if the victim dies earlier than expected) or of under-compensation (if death is later than expected).

The CSO's most recent life tables show survivorship rates to various ages and hence a distribution of the likely age-at-death for men and women can be inferred. These are plotted in the chart below, which shows how many deaths, out of a population of 100,000, can be expected at each year of age.



A number of points should be noted about this chart. The principal one is that there are deaths in all years starting more or less straight away and continuing up to ages over 100. The incidence of death is not bunched around the mean expected life expectancy: any presumption that a person expected to die in, say, 55 years, will actually die within a year or two on either side is simply not realistic. Roughly 4% of men, for example, will die in the year corresponding to mathematical life expectancy, and just under 12% in the three years centred on that year.

The life tables permit us to compute answers to the following question. If a large number of men or women aged 25 were in receipt of compensation awards, and the CSO life expectancy figures were employed, how many would die *ten or more years earlier* than assumed, and how many would die *ten or more years later*? The calculations are in the next table.

**Table 2: Ranges of Life Expectancy at Age 25, 2006 Life Table.**

	Men	Women
Die at least 10 Years <i>Earlier</i> than Expected %	18.0	16.3
Die at least Ten Years <i>Later</i> than Expected %	19.3	18.0
Total – Either Ten Years <i>Earlier</i> or <i>Later</i> %	37.3	34.3

In order to focus on longevity risk, we abstract from investment risk by assuming that the compensation takes the form of a ‘bucket’ of constant-money from which, say, €50,000 per annum (actual awards often exceed this sum) is to be extracted up to life expectancy, after which point the bucket is intended to be empty. A person awarded this amount and who survived no longer than an age ten years short of assumed life expectancy would leave *at least* €500,000 to the benefit of heirs. A person who lived ten or more years longer than assumed would have been under-compensated by *at least* this amount. These are quite serious levels of under- or over-compensation. It is clear from the table that they can be expected to arise in at least one case in three.

We can conclude that, with once-off lump-sum settlement, substantial under- or over-compensation *because of longevity risk alone* is likely to be very widespread.

### **3.2 Investment Risk under Lump-Sum Settlement**

Even if individual life expectancy could be predicted accurately, with lump-sum compensation, the investment fund must yield precisely the real rate of return assumed in order to avoid under- or over-compensation. This rate has been taken to be 3% (in excess of inflation) in Ireland in recent years<sup>6</sup>. We can approach the issue by posing the following question: if a victim aged 25 was awarded a sum designed to generate draw-downs of €50,000 per annum up to the assumed life-expectancy, what would be the consequences if the real rate of return proved to be 2% or 4%, rather than the 3% currently applied? The lump-sum at the 3% rate for a man would need to be €1.32m and for a woman €1.36m to accord with the most recent CSO life tables. Actual awards for people in this age bracket often exceed these sums.

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<sup>6</sup> Gilligan J. in *Boyne v Dublin Bus and Anor* (2006).

If a person awarded these amounts lived precisely to life expectancy but achieved rates of return higher or lower than assumed, the impact is as shown in the table.

Rate of Return Achieved		2%	3%	4%
Funds Exhausted (prior to death) by - Male		16 yrs	nil	...
- Female		17 yrs	nil	...
Excess Funds at Death	- Male	...	nil	€1.80m
	- Female	...	nil	€2.26m

Thus funds would be exhausted well before the expected (assumed to be the actual) dates of death for both men and women if real rates of return were as low as 2%. But if they were 4%, very substantial sums would be available to family and heirs on death<sup>7</sup>.

We can conclude that, with once-off lump-sum settlement, under- or over-compensation *because of investment risk alone* is likely to be very substantial.

Historically real rates of return as low as 2% over extended periods have not been common (see Dimson, Marsh and Staunton (2002)). They have however arisen from time to time and returns from either equity or bond portfolios can be significantly negative, sometimes for several consecutive years. This gives rise to a further form of investment risk, where returns may average the assumed rate over the lifetime but may be poor in the initial years when the fund is large. Thus ten initial years of say 1% returns, offset at the end of the period by ten years of 5% returns, would under-compensate, even though the assumed average of 3% was achieved. The reverse pattern would result in substantial sums for heirs on death. So over- or under-compensation can result from variability in returns even if the average rate assumed is actually achieved.

Clearly, a lump-sum settlement could miss the target under both the longevity and rate-of-return headings: a combination of poor investment returns and long life, or of buoyant returns and early death, would see even greater under- or over-compensation than arises in the examples above, where only one effect is operative.

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<sup>7</sup> These effects are due to the ‘power of compound interest’ over the long periods involved in the examples – the rate of return effects are smaller at lower life expectancy.

## Section 4. Medical Cost Inflation

Since the judgement in the McEneaney case, settlements in Ireland have been based on the presumption that the future inflation rate to be applied to medical costs should be higher than the general rate of inflation. Evidence for the plaintiff in that case showed that, in the years prior to 2001, the medical components of the Consumer Price Index had risen more quickly than the index as a whole, and evidence for the defence on this point was not presented. The issue has not been adjudicated in any subsequent case, and continuing excess inflation for medical costs appears to be widely accepted as inevitable. For example, Mr. Justice Kearns, in his recent Irish Times article, remarked:

*'The scale of awards actually required to compensate for projected future care is set to rise exponentially because of the spiralling costs associated with medical treatment and care.'*

This issue is important for several reasons. The McEneaney judgement concluded that excess inflation for medical costs was 3%, which in turn implied that the real rate of return assumed on the capital sum set aside to cover these costs would be zero rather than 3%. If a large portion of total costs is deemed to be 'medical', the capital sum awarded will be substantially higher than otherwise. Clearly there is an incentive for plaintiffs' advisers to argue that as large a portion of costs as possible be classified as medical.

### 4.1 Measuring Inflation in Medical Treatment Costs

Court awards in catastrophic injury cases distinguish medical *treatment* from medical *care*. While price index sub-components for medical treatment costs in national Consumer Price Indices have often out-stripped general price inflation in Ireland and elsewhere, there are substantial methodological difficulties in drawing conclusions from these experiences. The issue has been most intensively studied in the United States, where the balance of professional opinion is that the official indices exaggerate the rise in medical treatment costs. The principal reason for this is that the conventional indices measure the price of a bundle of inputs (hospital-days, drugs, equipment, consultant-hours) rather than the constant-quality cost of the resultant output, the treatment the patient receives. There are continuing improvements in quality, for example in drugs and equipment, and in productivity, for example in improved training and skills of medical personnel, which are inadequately captured in the conventional fixed-weight Laspeyres indices. Familiar price index numbers, such as the Irish Consumer Price Index, measure the evolving cost to the consumer of a bundle of *constant-quality* goods and services. Explicit adjustments for quality change are undertaken where possible, and it is accepted that failure to make these adjustments can result in over-estimation of inflation. See CSO (2010).

The main issues were expressed thus by former Federal Reserve chairman Alan Greenspan (Greenspan (2001)):

*'These latent problems have emerged in full view in the pricing of medical services. Perhaps the inherent complexity of this undertaking is most clearly revealed by posing the question, what do we mean by a standardized unit of medical output? Is it the procedure, the treatment, or the outcome? What does the fee charged for the bundle of services associated with cataracts or arthroscopic surgery represent? How does one value the benefits to the patient of shorter hospital stays, more comfortable recoveries, and better physical outcomes? Clearly, the unadjusted fee for a single medical procedure does not adequately represent its "price".'*

*The price indexes for medical services used to be constructed by pricing a variety of inputs, for example, a night in a hospital, or an hour of a physician's time. A few years ago, the Bureau of Labor Statistics began moving toward pricing the treatment paths of particular diagnoses, the better to capture changes in the mix of inputs used to treat a given disease. For example, many surgical procedures that used to require an overnight stay in a hospital now can be performed on an outpatient basis, and the producer price index and consumer price index are now better able to measure the price decline associated with that change. Interestingly, when such techniques are applied to individual medical procedures they appear almost without exception to indicate falling prices at least since the mid-1980s. This has raised significant questions as to whether our current measures of overall medical service price inflation are capturing the appropriate degree of productivity advance evident in medicine'.*

In the preface to a recent volume devoted to measuring medical price inflation, the editor (Triplett (1999)) wrote:

*'Quite recently new techniques for measuring the prices of medical treatments have been developed. This research still covers only a small proportion of medical care expenditures, but its results are provocative. They suggest that medical care inflation is not nearly so severe as sometimes thought, provided appropriate allowances are made in economic statistics for the value of improvements in medical treatment'.*

In Chapter 1 of the same volume, Triplett and Berndt write:

*'Contrary to the usual presumption of runaway medical inflation, some very recent research, reported in this volume, suggests that prices for at least some medical care interventions are not rising rapidly and may even be falling'.*

In Chapter 2, Cutler, McLellan and Newhouse conclude that, when allowance is made for quality improvements and other factors, the rate of medical inflation for heart attack treatments differs hardly at all from general price index numbers; that is, there is no evidence of excess medical price inflation for this item. They write

*'And it implies that a true cost-of-living index for heart attack care – a price index for health after a heart attack – is falling over time, whereas conventional medical care price indexes have suggested a rapid rise'.*

In a further paper (Cutler, McLellan, Newhouse and Remler (1998)) the conclusion is that a quality-adjusted true cost-of-living index for heart attack treatments actually fell, by about 1% per annum.

In Chapter 3 of the Triplett volume, Frank, Berndt and Busch report that, over the period 1991-1995 in the United States, when the medical care services component in the US CPI rose 26.6% and the prescription drugs component 17.7%, the true index of the price of treating depression actually fell, by amounts ranging from 24.3% to 29.8% on their measures, which allowed for quality change in the service provided.

In summary, US research has tended to illustrate that the measurement of medical price inflation is complex, and that conventional fixed-weight indices based on prices of inputs to medical treatment, without quality adjustment, can and do over-state the true underlying increase in the price of medical treatment.

#### **4.2 Measuring Inflation in Medical Care Costs with the Irish CPI**

In addition to medical treatment, victims of catastrophic injury often require continuing care. Future costs of such care will reflect wage rates for care personnel and this item is often the largest component in settlements. These costs are not measured in the Consumer Price Index component for Health.

In the Irish CPI, the weight attaching to health items is 3.15%. This does not correspond to aggregate national expenditure on healthcare, a far higher figure, most of which is funded through the Government's budget and through private medical insurance companies. Only the items purchased out-of-pocket by the typical household at the time of the most recent Household Budget Survey are included. The weight of 3.15% in the CPI would correspond to about 1.6% of GDP, since consumer spending by households has been about one-half of GDP in recent years. According to the OECD, Ireland devoted 7.6% of its GDP to health spending in 2007, of which 81% was channelled through the Exchequer (OECD 2009). Thus for every €1 of health spending picked up in the Household Budget Survey and reflected in the CPI weights, a further €4 is being spent on healthcare through other channels. The behaviour of the CPI health component cannot therefore be relied upon as an indicator of health costs across the economy.

There has been a clear tendency for the Health item in the Irish CPI to exceed overall CPI inflation in recent years. The next table shows trends in the health component and in the overall CPI compared to base years of 2001 and 2006. Since December 2006, the health item has risen about 3% per annum faster than prices in general, and a similar pattern is evident from 2001 to 2006.

**Table 4: Health Inflation as Measured in the Consumer Price Index for May 2010**

	Base Dec 2006 = 100	Base Dec 2001 = 100
Health Component	111.8	150.5
All-Items CPI	101.3	119.6

The detailed breakdown of the CPI health component and the pattern of price changes over the last decade are shown in the next table.

**Table 5: Breakdown of Health Sub-Components in the CPI since December 2006.**

Component	Weight	Base Dec 06 = 100	% Change
Prescribed Drugs	0.6160	86.4	-13.6
Other Medicines	0.2512	102.3	+2.3
Other Medical Products	0.0456	95.2	-4.8
Therapeutic Appliances, Eqpmt	0.2637	112.8	+12.8
Doctors' Fees	0.4792	114.1	+14.1
Alternative Medicine	0.1893	111.4	+11.4
Dental Services	0.3628	123.9	+23.9
Hospital Services	0.9459	125.8	+25.8
Total Health	3.1536	111.8	+11.8

The practice of allowing a higher future inflation allowance for items classified as 'health', based on the history of the relevant CPI sub-component, creates an incentive for plaintiffs' advisers to classify as many items as possible as belonging to the medical category. But the list of items included in the relevant CPI category is much narrower than the range often included in the plaintiffs' claims. These latter include, for example, various items of capital equipment (residential accommodation, transport) and their replacement. The sub-category for Health costs in the Irish CPI does not cover these items, as is clear from the last table, and their prices have in many cases been declining in



recent years. Accordingly, comparisons of recent inflation rates in the health items in the Irish CPI with overall inflation do not provide a secure foundation on which the assessment of quantum might be based. In particular, the application of a low real interest rate in the case of such items, on the basis that their inflation rates exceed those of goods and services in general, is not soundly based.

I have reviewed statements of claim relating to several recent cases involving compensation to accident victims. In addition to medical treatment, drugs and medical supplies, a wide range of items is listed in the material supporting these claims which it can be argued will experience in future years a rate of inflation no different from goods in general, or even lower than goods in general.

If a low or zero real interest rate is applied to these items, on the grounds that they are medical items and likely to suffer a higher inflation rate than goods in general, then the capital sum to which the plaintiff would be entitled would be considerably greater than would be the case if the real rate of interest allowed were a positive rate such as 3%.

I have noted the following items classified as 'medical' or 'health' in statements of claim: Home Help; Washing Machine; Washing Powder; Clothes Dryer; Extra Heating; Hands-free speaker phone; Extra Phone Calls; Pillows; Sheets; Duvet; Med Alert; Monitoring; Battery Replacement; Sony TV; Video; Extra Channels; Computer; Installation of extra phone; Cooling Fan; Environmental Controls; Holidays; Glass House; Alarm System; Vehicle; Mobile Phone; Car Cleaning; Car Insurance. None of these items come under the health heading in the Irish CPI, and contentions that they should attract a higher allowance for future inflation cannot be based on the history of higher inflation in the health CPI component.

Actuarial reports for plaintiffs regularly include items such as car, bed, hoist, wheelchair, stair lift, residential accommodation, computer and holidays as items to which a 'medical' rate of inflation could be applied. Schedules of Damages regularly mention substantial costs associated with Aids, Appliances and Assistive Technology, as well as various household items, transport and accommodation (housing). Some of the items mentioned belong to the CPI category called Furnishings, Household Equipment and Routine Household Maintenance, which actually fell over the period from December 2001 to December 2006, by 5.5%, and by a further 10.0% up to May 2010. The sub-item Household Appliances fell 7.5%, over the five-year period to December 2006, during which the All-Items CPI rose 18%. It has fallen a further 9.4% since, while the overall CPI has risen 1.3%. In both cases, the item has registered an inflation rate *over 3% below* the overall CPI since 2001.

Some of these items belong in a CPI category called Transport. The sub-index called 'Motor Cars' rose just 7.2% in the five years to December 2006, versus 18% for the CPI, and fell by 9.8% from then until May 2010, as the CPI rose a further 1.3%. Over the full period from 2001 to date, this item experienced an inflation rate about 2% per annum *below* the overall CPI.

The allowability of these items is separate from the question of the future rate of inflation which ought to be applied to them. The Court, in other words, could deem all of these items to be allowable, but the differential inflation rate observed in the past for the health sub-category in the CPI ought not to be relied upon to predict the inflation rates of these items.

In my view, the evidence alluded to in the McEneaney judgement lends no support to the use of any future inflation rate higher than the general CPI for these items. Indeed, one could argue that a rate of inflation substantially lower than the All-Items CPI has been observed consistently for many years in the case of numerous durable items, and that it could continue. This reflects the widely-observed tendency for the relative prices of manufactured goods to decline over time.

Particularly when long time horizons are involved, great care needs to be taken to ensure that implausible assumptions about future relative prices are not built into the analysis through the use of lower real interest rates for items deemed ‘medical’, but which do not belong to the relevant CPI category. In the last two years, the CPI and HICP have both been falling sharply, and this process may have further to run.

Over the decade to 2008, real wage rates in Ireland for many categories of para-medical personnel rose significantly. This process appears to have run its course, excess labour supply is now evident and rates of pay have been falling in both the public and private sectors. Excess labour supply appears likely to persist for many years, and increases in real rates of pay are improbable until this excess supply has been absorbed.

## **Section 5. The Insurance Market and Index-Linked Annuities**

If periodic payments linked to an inflation index such as the CPI were to be introduced in Ireland, insurers, including the State Claims Agency, would wish to be able to draw a line under their liabilities, as they can do at present under the lump-sum compensation system. In order that they be enabled to achieve this objective, it would be necessary that the emergence of an *index-linked annuity market* be facilitated. In such a market, an insurer faced with an index-linked payment for life to a successful plaintiff would seek to purchase, from a life company, the necessary stream of real payments, with the life company absorbing the longevity risk. The life company would of course pool this risk with many other assured lives, as these companies do at present in the conventional (nominal) annuity market.

The life company would seek to ‘lay off’ the investment risk, and particularly the inflation exposure, through the purchase of a suitable mixture of index-linked government securities. These securities would pay interest and principal not in nominal terms, as with existing Irish government bonds, but linked to one of the available consumer price indices. Index-linked bonds at long dates would be required, and some countries which issue them offer maturities of 40 years and longer. The longest-dated UK issue available at present matures in 2055.

Ireland has never issued Exchequer index-linked debt. In Europe, France, Greece, Italy, Sweden, the United Kingdom and several others are major issuers. In the UK, the Debt Management Office targets about a quarter of issuance in index-linked form. There have been some quasi-government index-linked Irish instruments, including the Housing Finance Agency index-linked bonds. The buy-out of the NTR company’s toll concession on the M50 motorway involved the issue of an instrument paying €40m per annum for 15 years. In both cases, the link is to the CPI. There have also been a few small private-sector issues.

If Exchequer index-linked issues were to be designed, the CPI is probably not a good choice of index. It would be unfamiliar to international investors and is in any event an index with some unusual design features, see McCarthy (2007) and Central Statistics Office (2010). The practical options are the Irish HICP and the Euro-area HICP. The Agence France Tresor issues in both forms, and there would be merit in copying the designs of the benchmark issuer. Domestic funds will tend to prefer the domestic HICP index, and there is an established market for Euro-HICP linkers. There could be retail demand in Ireland for index-linkers, and pension funds regard them as an important asset class. Irish pension funds have been urging the authorities to consider index-linked issues for many years. Persons retiring with defined-contribution pension funds might prefer index-linked to conventional annuities, so the compensation of accident victims would not be the only potential market in Ireland for these instruments.

It is easy to go ‘jobbing backwards’ and to identify periods when index-linked would have offered savings to the Exchequer in debt-service costs. But there will be periods when the reverse is true. In the Irish case, the principal attraction seems to be the access to additional pools of funding, with the bonus of some possible savings in cost in the

short-term as inflation is low, particularly if a longer-dated issue were feasible. Over a really long time horizon, it may well be the case that costs of conventional bonds and of index-linked would be similar.

## **Section 6. Concluding Observations**

Insurers have understandably sought certainty in the settlement of claims and the avoidance of open-ended liabilities, which is afforded to them under the present lump-sum compensation system. But that same system leaves longevity risk and investment risk with the accident victims, and as a matter of social policy this arrangement does not withstand scrutiny. Under- and over-compensation are likely to be very widespread in Ireland under current arrangements, and a system of periodic payments, based on index-linked annuities, could address these problems and possibly enable a reduction in litigation costs.

From the insurers' standpoint, finality in claims settlement could be retained under an index-linked system and it is not axiomatic that costs to insurers would rise. Indeed, under the present system, judges may feel tempted to make generous awards, conscious that substantial longevity and investment risks are being borne by a party, the accident victim, not well placed to absorb them.

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