ACTUARIAL ASSESSMENT OF DAMAGES IN PERSONAL INJURY LITIGATION: THE HONG KONG POSITION AND THE COMPARATIVE INTERNATIONAL ASPECTS

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Conventionally, the Hong Kong Courts follow English authorities in choosing multipliers in personal injury litigation. Most judges select the multiplier by reference to a spread of multipliers in comparable English and Hong Kong cases. The House of Lords deviated from this approach recently in Wells v Wells [1999] AC 345. It approved actuarial evidence as the primary method of assessing future pecuniary loss. The actuarial tables, known as the 'Ogden Tables', issued by the British Government Actuary's Department should be regarded as the starting point for selection of the appropriate multipliers in England. Although in theory the courts of the Hong Kong Special Administrative Region are not bound by this House of Lord decision, it is anticipated that the conventional approach to choosing multipliers in Hong Kong will be hotly contested. This article attempts to analyse the legal and practical implications of Wells v Wells in Hong Kong, and surveys the modern trend of using actuarial evidence in personal injury litigation in other major jurisdictions.

Introduction

When assessing future pecuniary loss in personal injury litigation, courts often use the multiplicand/multiplier approach. The objective is to calculate a lump sum amount to compensate the plaintiff for future loss of earnings and to cover future expenses. The lump sum is computed as the product of a multiplicand and a multiplier. The multiplicand, the future annual loss of income, and annual consequential expense, such as cost of care, is established by evidence put before the judge, who then has to decide an appropriate multiplier. The multiplier is used to discount the future pecuniary values into a present lump sum amount. Factors taken into account include the inflation rates; the general

mortality pattern of the population at large; investment returns; taxation and some additional factors reflecting contingencies other than mortality.

Conventionally, the Hong Kong Courts follow the English authorities in choosing multipliers. Most judges select multipliers by reference to a spread of multipliers in comparable English and Hong Kong cases. This practice can be illustrated by a straightforward hypothetical example. Assume that today, Mr A has been injured in an accident caused by the negligence of a taxi driver. Mr A is a 38 year-old engineer and suffered injuries to the spine. He has lost his job. In choosing the appropriate multiplier, the court will consider a spread of comparable multipliers based on previous cases:

Victim	Court	Age at date of trial	Injuries	Multiplier	Occupation	Date of Judgment
Ms W	England	29	Spinal Injuries	13	Bank Supervisor	Jan 1992
Mr X	Hong Kong	33	Spinal Injuries	15	Decorator	Aug 1998
Ms Y	England	46	Spinal Injuries	7.5	Clerk	Jun 1991
Mr Z	Hong Kong	42	Spinal Injuries	10	Clerk	July 1998

In choosing the multiplier, the court will consider all the circumstances and uncertainties surrounding Mr A. Let us assume that the judge chooses 10 as an appropriate multiplier reflecting the circumstances and uncertainties surrounding Mr A. Then the judge has to determine the multiplicand. Suppose Mr A earned HK$30,000 monthly before the accident. The judge's starting figure will be $30,000 per month. This will be adjusted by the judge to, say, HK$34,000 per month on account of inflation during the period between the accident and the trial. Multiplied by 12, the annual figure is HK$408,000. This is the figure which will be used as the multiplicand. The award for loss of future earnings should work out as follows:

$$\text{HK\$408,000} \quad \times \quad 10 \quad = \text{HK\$4,080,000.}$$
$$\text{(multiplicand)} \quad \text{(multiplier)}$$

The award in this hypothetical example will, in effect, compensate the plaintiff for the loss of the income he may have earned from the date of trial to the date when he will reach the retirement age of about 60.

This conventional approach was first challenged in the Hong Kong Court of First Instance in 1995, in *Chan Pui Ki (an infant) v Leung On*.[1] The trial judge abandoned the conventional method of choosing multipliers and admitted actuarial evidence to calculate the appropriate value. However, this decision

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[1] [1995] 3 HKC 732.

was subsequently reversed by the Hong Kong Court of Appeal in 1996,[2] which held that the conventional multipliers for the calculation of loss of future earnings should be maintained. The Court of Appeal also discouraged any further use of expert evidence given by economists and actuaries in Hong Kong personal injury litigation. In contrast, the House of Lords in its recent landmark decision in *Wells v Wells*[3] approved actuarial evidence as the *primary* method of assessing future pecuniary loss. This article will attempt to analyse the legal and practical implications of this decision in Hong Kong and other common law jurisdictions, and survey comparatively the modern trends of using actuarial evidence in personal injury litigation in other major jurisdictions.

The advent of using actuarial science in English courts: the Ogden Tables and *Wells v Wells*

The use and functions of the Ogden Tables
The first edition of the 'Ogden Tables', named 'Actuarial Tables with Explanatory Notes for Use in Personal Injury and Fatal Accident Cases', and prepared by the British Actuary's Department, was published in 1984. They are named after Sir Michael Ogden QC, who was responsible for their publication and was also the chairperson of the joint working party of actuaries and lawyers responsible for victim compensation. The Ogden Tables assist in the calculation of damages for personal injury, by multiplying an annual sum, which takes into account factors such as cost of care and loss of earnings, by the number of years over which the damages are to be awarded. They provide an aid for those assessing the lump sum appropriate as compensation, for a continuing future pecuniary loss or consequential expense in personal injury and fatal accident cases. The Ogden Tables are now in their fourth edition.[4] The latest is a response to criticism from actuaries and lawyers that multipliers devised by judges are too low. They contain, for the first time, a set of tables based not only on past, but also on projected mortality statistics. According to the explanatory notes attached to the Ogden Tables,[5] the following steps should be taken in their use:

(1) Choose the table relating to the appropriate period of loss or expense;
(2) Choose the table relating to that period, appropriate to the sex of the plaintiff;
(3) Choose the appropriate rate of return, before allowing for the effect of tax on the income to be obtained from the lump sum;

2 [1996] 2 HKC 565.
3 [1999] AC 345.
4 *1999 Facts and Figures: Tables for the Calculation of Damages* (London: Sweet & Maxwell Limited, 1999).
5 Ibid, p 18.

(4) If appropriate, allow for a reduction in the rate of return to reflect the effect of tax on the income from the lump sum;

(5) Find the figure under the column in the table chosen given against the age at trial (or, in a fatal accident case, at the death) of the plaintiff;

(6) Adjust the figure to take account of contingencies other than mortality as specified in the explanations attached to the tables; and

(7) Multiply the annual loss (net of tax) or expense by that figure.

An example is given in the explanatory notes of the Ogden Tables.[6] The plaintiff is a female, aged 35. She lives in London and is an established civil servant who was working in an office at a salary of £25,000 net of tax. As a result of her injuries, she has lost her job. The task of estimating her loss of earnings to retirement age of 60 is to be undertaken as follows:

(1) Tables 6 and 16 assume a retirement age of 60 for females. If the projected mortality tables are accepted, then Table 16 is relevant.

(2) The appropriate rate of return is determined to be 4.5%, based on *Wells v Wells* [1997] 1 WLR 652 (English Court of Appeal);

(3) Table 16 shows that, on the basis of a 4.5% return, the multiplier for a female aged 35 is 14.94;

(4) It is now necessary to take into account risks other than mortality. Let us assume that economic activity for the next few years, for the purpose of this exercise, is regarded as being 'high'. Table C would require 14.94 to be multiplied by 0.95;

(5) Further adjustment is necessary because the Plaintiff (a) is in a secure non-manual job, and (b) lives in the South East.

The adjustment should be made as follows:

Basic adjustment to allow for short-term high economic activity (Table C)	0.95
Adjustment to allow for occupation, say	+0.01
	0.96
Adjustment for geographical regions, say	+0.01
	0.97

The original multiplier taken from Table 16, namely 14.94, must therefore be multiplied by 0.97, resulting in a revised multiplier for use of 14.49.

In the above example given by the British Government Actuary, the appropriate rate of return is 4.5%, based on the decision of the English Court

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[6] Ibid, p 19.

of Appeal in *Wells v Wells*.[7] It should be noted that subsequently the House of Lords held that, in *Wells v Wells*,[8] the assumed rate of return should be 3 percent. On 28 April 1999, the working party chaired by Sir Michael Ogden QC recommended, through a press release, that the assumed rate of return on the investment of damages should be 2%, to reflect the recent low levels of return on index-linked Government stocks.[9] However, the working party stated that it would prefer the Lord Chancellor to use his power under s 1 of the 1996 Damages Act, to set the return rate to be expected from the investment of a sum awarded as damages. For many months the working party has been urging the Lord Chancellor's Department to have the rate set, but this has not been done as this article goes to press. Ever since the *Wells* decision the rate of return on the UK Government stock has been falling. The lower the rate the greater is the lump sum necessary to provide for the annual costs of care determined by the court. Sir Michael Ogden QC expressed his dissatisfaction and disapproval in strong terms: 'This injustice has gone on for too long. If the Lord Chancellor does not agree to consult and then set a rate at once, without waiting for issue of the Consultation Paper about changing the system for damages, he should be replaced by someone who will.'[10]

The legal status of the Ogden Tables in England
The Ogden Tables were first published in 1984 and initially had no legal authority. However, the working party responsible for their production strongly encouraged the legal profession and the judiciary to use the tables. In the introduction to the '1996 Facts and Figures: Tables for the Calculation of Damages', Robin de Wilde QC added humour to his plea for use of the Tables, when he quoted the historian Edward Gibbon's description of a Roman emperor:

> Twenty-two acknowledged concubines and a library of sixty-two thousand volumes, attested the variety of his inclinations; and from the productions which he left behind him, it appears that the former as well as the latter were designed for use rather than ostentation.[11]

According to Robin de Wilde QC, the Ogden Tables are also designed for use rather than ostentation. Although they have been widely used by judges at first instance since 1984, they have only recently received formal recognition. Under the Civil Evidence Act 1995, the actuarial tables (together with

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7 [1997] 1 WLR 652.
8 Note 3 above.
9 David Kemp, 'Damages: a period of uncertainty' (1999) 143 Solicitors Journal 480.
10 See William Norris, 'Multipliers: Do We Use a Discount Rate of 2 per cent or 3 per cent? Didn't Wells v Wells Settle the Argument?' (2000) 1 Journal of Personal Injury Litigation 40, 43.
11 Note 4 above, p 12.

explanatory notes) for use in personal injury and fatal accident cases, issued from time to time by the Government Actuary's Department, are admissible in evidence for the purpose of assessing, in an action for personal injury, the sum to be awarded as general damages for future pecuniary loss. In July 1998, the House of Lords made an innovative decision in *Wells v Wells*. It approved actuarial evidence as the *primary* method of assessing future pecuniary loss, rather than a mere check. The Ogden Tables should be regarded as a starting point for selection of the appropriate multipliers in England. Lord Lloyd of Berwick stated:

> I do not suggest that the judge should be a slave to the [Ogden Tables]. There may well be special factors in particular cases. But the tables should now be regarded as the starting point, rather than a check. A judge should be slow to depart from the relevant actuarial multiplier on impressionistic grounds, by reference to 'a spread of multipliers in comparable cases' especially when the multipliers were fixed before actuarial tables were widely used.[12]

The Hong Kong position: *Chan Pui Ki*

The Court of First Instance
Chan Pui Ki is a milestone in personal injury litigation in Hong Kong. Prior to this decision, there were no Hong Kong cases which admitted expert evidence given by actuaries and economists to challenge the appropriateness of conventional discount rates and conventional multipliers.

Miss Chan Pui Ki was knocked down by a double-decker bus in 1989 at the age of ten, and suffered severe head injuries. The plaintiff invited the High Court not to adopt the conventional multiplier (which would have been 20 only), but to receive actuarial evidence as to what was an appropriate multiplier. The plaintiff argued that the fundamental principle of law was that compensation should, as nearly as possible, put the party who had suffered loss, in the same position she would have been in if she had not sustained the wrong.[13] The conventional multipliers were only appropriate to discount rates of 4-5 percent (per Lord Diplock in *Cookson v Knowles Coal*[14]). The discount rate is the differential between the rate of investment return and the wage inflation for the period of the plaintiff's probable working life. The discount rate is an essential element in the actuarial formula as regards the calculation of multipliers. The plaintiff introduced evidence showing that in present day Hong Kong, the rate of real return on investment over wage increase falls

[12] Note 3 above, p 379F.
[13] *Lim Poh Choo v Camden Health Authority* [1980] AC 174 at 187E (per Lord Scarman); *Livingstone v Rawyards Coal Co* (1880) 5 App Cas 25.
[14] [1979] AC 556 at 571G.

below the rate of 4-5 percent. Thus, the conventional multiplier which was based on that range of return was not capable of giving the plaintiff a fair compensation, by covering her loss of earnings measured at the date of the trial and the amount by which future annual earnings would increase above the normal inflationary increase. Hence, it was argued that the multiplier had to be increased in order to give the plaintiff a fair compensation.

The trial judge, Mr Justice Cheung, did not adopt the conventional upper limit of the multiplier based on previous case law, namely 20. He boldly admitted the actuarial evidence introduced by the plaintiff. He chose 30 as the multiplier, based on a discount rate of 2.7 percent. In other words, the court assumed that the plaintiff would invest her money and obtain a return of 2.7 percent over inflation. The multiplier of 30 also reflected consideration of the various 'vicissitudes of life', chiefly mortality, illness and redundancy. The award for future loss of earnings by the High Court was:

$$\underset{\text{(multiplicand)}}{\text{HK\$120,900}^{15}} \quad \text{x} \quad \underset{\text{(multiplier)}}{30} \quad = \text{HK\$3,627,000.}$$

Justice Cheung said:

Short of picking a figure from the air, the only possible way of calculating the appropriate multiplier is by the assistance of expert evidence. It should be noted that the use of actuarial evidence has been accepted by the court in the past. Lord Denning MR in Hodges v Harland & Woolf Ltd [1965] 1 WLR 523 at 526D-E held that: ...loss of future earnings...is, of course, a proper head of compensation. The evidence receivable depends on the circumstances. The judges do take actuarial considerations into account...If the evidence of an actuarial would be helpful in any case, I know of no rule of law which prevents it from being entertained and considered.[16]

The Court of Appeal

The case went before the Court of Appeal in 1996.[17] The appeal was regarded by the Hong Kong legal profession as a test case for challenging the conventional approach to the assessment to damages for future loss of earnings. The Chief

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[15] At the date of the court's judgment, Miss Chan was only 16.5 years old and not yet in employment. Evidence showed that she was of no more than average intelligence before the accident. The judge's starting figure was $8,540 per month, being the published average monthly salary of all clerical and secretarial workers of all ages as at September 1994. This was increased by the judge to $9,300 per month on account of inflation since that time. The multiplicand was HK$9,300 x 13=$120,900 per annum. The RDS Survey on companies in Hong Kong revealed that the majority of companies in Hong Kong provided 13 months' wages to workers, the additional one month's wages represent the Chinese New Year bonus.

[16] Note 1 above, p 749G.

[17] Note 2 above.

Justice at that time specially convened a five-person court to hear the case. The Court of Appeal ruled that the conventional approach for selecting multipliers should be restored. It also discouraged any further use of expert evidence given by economists and actuaries in Hong Kong personal injury litigation. The conventional discount rate of 4 percent to 5 percent was restored. As a result, the level of award for loss of future earnings in *Chan Pui Ki's* case was substantially reduced to:

$$HK\$108,000^{18} \quad x \quad 15 \quad = HK\$1,620,000.$$
(multiplicand) (multiplier)

The difference between the High Court's award and the Court of Appeal's award for loss of future earnings was thus around $2 million. Of this difference, more than $1.8 million was due to the reduction of the multiplier from 30 to 15. The Court of Appeal took the view that for many years, the conventional method of assessing an appropriate lump sum to compensate for loss of future earnings had been to use the multiplier/multiplicand approach. Crude though the method might be, it was nevertheless a realistic acknowledgement of the inherent limitations of the whole exercise. It was based upon the applied wisdom of the courts over many years. Litton VP (as he then was) said:

> In the course of the hearing we were told by counsel that recently practitioners have been at a loss as to the right approach in cases involving future loss of earnings and have increasingly relied on 'experts' for assistance in advancing their respective cases. This is a trend which must stop, for it proceeds upon a fundamental misconception. Experts, be they economists, accountants or other professional persons, can of course testify in a court of law as to past events, and their views and opinions can sometimes be helpful in assisting the court in interpreting data...The object of such evidence—the *only* legitimate object—was to test the validity of the basic *Cookson v Knowles* assumption in the Hong Kong context. If necessary both facts and opinions on such matters could have been challenged; these were therefore justiciable issues. But the opinion evidence in the court below was allowed to stray far beyond proper realms. For example, the judge said '[The expert] was of the view that the period from 1962 to 1995 is probably fairly representative of the economic conditions that one might expect to see in 20, 30 or 40 years' time'. This, with respect to the judge, was of no evidential weight in a court of law and ought never to have been entertained. [The expert] who testified before the judge was an economist. He was no prophet.[19]

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[18] The multiplicand was reduced because the Court of Appeal took the view, *inter alia*, that the trial judge failed to take into account the amount the plaintiff would have earned in a sheltered workshop after recovery.

[19] Note 2 above, pp 591-92.

The approach adopted by the Hong Kong courts after the ruling of the Court of Appeal in Chan Pui Ki

The fairness of using conventional multipliers and the refusal to admit actuarial evidence are subject to doubts. The Court of Appeal's ruling in *Chan Pui Ki* demonstrated that after the abandonment of actuarial evidence, the choice of multiplier seems to have become an arbitrary exercise:

> ...Secondly, the multiplier. At the date of the judgment in October 1995 the plaintiff was 16-1/2 years old and, according to the judge, would not have started working until 18 or 20. The award would, in effect, compensate the plaintiff for the loss of the income she might have earned from about mid-1998 (when she was about 19) to mid-2039 (when she would be about 60). In these circumstances an appropriate multiplier for the judge to have selected would have been 15. This multiplier reflects the uncertainties surrounding a plaintiff who, at the date of the trial court's judgment, was only 16-1/2 years old and not yet in employment.[20]

The Court of Appeal did not explain why the multiplier of 15 should be selected to 'reflect the uncertainties surrounding a plaintiff'. Also, it did not provide any reasons explaining why the multiplier of 15 represented the figure to be used to discount the future pecuniary values into a present lump sum, shaped by inflation rates, mortality patterns, investment returns, taxation and other relevant factors. It is sad to note that under the current legal system in Hong Kong, a multiplier can simply be picked, arbitrarily, without any reference to any evidence. It is anticipated that the victim, Miss Chan Pui Ki, will suffer financial hardship in the not too distant future.

However, the Court of Appeal decision is still currently binding in the Hong Kong Court of First Instance. For example, Mr Justice Cheung of the Court of First Instance in *Dall v Choy Ying Wai* commented:

> I tend to agree that the multipliers for young persons or persons of young age have been over-discounted but as the law now stands, the conventional multiplier must be applied in the assessment. In the light of the Court of Appeal decision, *change in law can only be effectively made by way of legislative reform* and not by changes in individual cases. To use the actuarial evidence to cross-check the conventional multiplier will not serve any useful purpose because even if substantial discrepancy is shown, it is the conventional multiplier and conventional discount that one must apply.[21] (*emphasis added*)

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[20]   Note 2 above, p 595 (per Litton V-P).
[21]   [1997] 2 HKC 588E.

The *Chan Pui Ki* decision, in particular the Court of Appeal's refusal to admit actuarial evidence, disappointed many personal injury claimants in Hong Kong. Recently, however, there are signs showing that it will still be possible for each plaintiff to persuade the court to accept actuarial evidence as a means to cross check the conventional multiplier. *Shek Chor Tai the Administratrix of Estate of Lee Sheung Yin, Deceased v Yau Lee Construction Co Ltd*,[22] a recent decision of the Hong Kong Court of First Instance, provides a good illustration of this recent trend. The defendant was the principal contractor of a construction site. The deceased was employed by the defendant and drove a concrete mixer truck within that construction site. The deceased was killed in an accident at work. By a consent order dated 4 September 1998, judgment on liability was entered against the defendant in favour of the plaintiff to the extent of 90% with damages to be assessed. In determining the appropriate multiplier, the widow's counsel adduced actuarial evidence on the basis of the actuarial tables. The court was willing to entertain the actuarial evidence and did not reject its admission:

> Counsel for the plaintiff referred to the Watson Wyatt Actuarial Tables. In the table of Multipliers for Loss of Earning at page 19, the multiplier shown for a male aged 57 was 7.913. I noted that the multiplier for a male aged 58 was 6.362, and that the table was based on a working life of up to 65.
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> The defendant argued that a multiplier of 6 was appropriate. Counsel referred to *Lee Ping Foon v Lee Hoi* [1998] HKLRD E28 (age at 55/57, multiplier of 4); *The King Oh v Wong Yik Fai* [1997] HKLRD L38 (aged at 57/60, multiplier of 4); *Chan Kui v Lee Fai* [1997] HKLRD D41 (aged at 57/61, multiplier of 4); *Choi Chi Hung v Wong Kuen Bor* (1997) HKLJ 107 (aged at 55/63, multiplier of 10 months).
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> In all the circumstances, I am persuaded that a multiplier of 6 is appropriate for the widow. I see no basis for taking a different multiplier for the son. He was already an adult and working man at the date of the accident, yet the deceased still supported him by subsidising his living expenses. The evidence would tend to show that the deceased would have continued to subsidise his son for as long as possible.[23]

The openness of the Court of First of Instance in *Shek Chor Tai* and its willingness to receive actuarial evidence address the fundamental issues which increasingly will be faced by judges and masters in Hong Kong. Questions such as whether there should be any judicial departure from *Chan Pui Ki*, whether the lower courts are already overstepping the bounds of *Chan Pui Ki* set by the

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[22] [1999] HKCU 534.
[23] Ibid, p 560 (per Master Kwan).

Court of Appeal in line with the international practices, and whether the need for reform is pressing are expected to arise again and again in future personal injury litigation.

Widespread use of actuarial evidence in other jurisdictions

Australia

Actuarial evidence has long been in use in Australia. Early examples of actuarial evidence being given at trials can be found in *Smith v Mayor of Emerald Hill*[24] and *Fleming v Commissioner for Railways*.[25] More recent examples illustrate the common use and admission of actuarial evidence in Australian courts and tribunals. In *Workcover Corporation (Pine Village Holiday Resort) v Denise Winning*,[26] the South Australian Workers Compensation Appeal Tribunal admitted and considered actuarial evidence presented by the injured worker, who sustained disabilities to her back and right wrist in her employment. In *Jane Carolyn Murfet v AAPC Australia Pty Ltd carrying on business as Novotel Launceston*, Cox CJ said that 'the absence of any actuarial evidence makes the task of assessing the present value of an anticipated lump sum payment payable on retirement at age 60 and discounted for contingencies extremely difficult'.[27] *Dawes v FHD Air Conditioning & Others*[28] is a recent judgment rendered by the District Court of South Australia. The plaintiff, a refrigeration mechanic, was employed by FHD Air Conditioning installing condensers on the roof of a building. When moving equipment, the plaintiff fell down the roof surface. A nitrogen cylinder which he was carrying subsequently struck his middle back and he suffered permanent injuries. In assessing the future economic loss flowing from the plaintiff's loss of capacity to work as a refrigeration mechanic, the court admitted the actuarial evidence tendered by the plaintiff, on the basis of a male born on 1 November 1958 and using the recommended discount rate of 3 percent. The loss of superannuation benefits was said to be a valid head of claim, and must be the subject of specialized and acturial evidence.

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[24]   (1881) 7 VLR (L) 431 (FC).
[25]   (1886) 2 WN (NSW) 56 (FC).
[26]   [1997] SAWCAT 54 (reported at http://www.austlii.edu.au).
[27]   Tasmanian Supreme Court Decisions, No 152/1997, unreported. On appeal, Crawford J of the Appellate Jurisdiction of the Supreme Court of Tasmania (Full Court) averred: '[Cox J] commented that the absence of any actuarial evidence made extremely difficult the task of assessing the present value of an anticipated lump sum payment payable on retirement at age sixty, discounted for contingencies... If a plaintiff comes to court without evidence to support a claim he or she cannot expect a generous amount to be awarded.' [1999] TASSC 6 (reported at http://www.austlii.edu.au).
[28]   [1998] 3751 SADC (reported at http://www.austlii.edu.au).

The United States and Canada

In the United States, assessment of damages is a matter for the jury.[29] A victim of personal injury is entitled to have an award for decreased earning capacity reduced to its present value. It has been established in a number of cases that standard mortality, and annuity tables, are admissible to show the plaintiff's probable life expectancy and the cost of an annuity which will compensate him for his loss.[30] The testimony of an actuary is also admissible on the question of the present value of the impairment sustained.[31] The court can also consider the actuarial evidence in determining the appropriate discount rate.[32] However, the members of the jury are laymen. They may well encounter difficulty in understanding the actuarial evidence as to the present cash value of future earnings and costs of care. It has been held that the actuarial expert witness should use a neutral figure, such as one dollar, and not the actual amount of the plaintiff's wages, and explain to the jury the process by which that one dollar would be reduced to its present cash value.[33]

The Canadian courts have affirmed the use of actuarial evidence in assessing personal injury damages in a number of landmark cases.[34] Goodbridge CJN in *Dobbin v Aledxander Enterprises Ltd* said that 'the actuarial method seems to be preferable to the conventional method for it lends itself to a greater degree of precision'.[35] Dickson J in *Andrews v Grand & Toy Alberta Ltd* acknowledged the use of actuarial calculations as 'the best available means of determining the [appropriate award]', as long as care is taken as regards the soundness of the postulates from which the actuary proceeds.[36] In *Lewis v Todd*, Dickson J averred:

> The award of damages is not simply an exercise in mathematics which a judge indulges in, leading to a 'correct' global figure. The evidence of actuaries and economists is of value in arriving at a fair and just result. That evidence is of increasing importance as the niggardly approach sometimes noted in the past is abandoned, and greater amounts are awarded, in my view properly, in cases of severe personal injury or death. If the courts are to apply

[29] See *American Jurisprudence* (New York: Lawyers Cooperative Publishing, 2nd ed, 1988, Vol 22), p 150 and 976.

[30] *Southern Railway Company v Stallings* 268 Ala 463, 107 So 2d 873 (6 November 1958); *Sullivan v Price (Fla)* 386 So 2d 241(17 July 1980); *Mitchell v Arrowhead Freight Lines, Ltd* 117 Utah 224, 214 P2d 620 (6 December 1950); *Exxcon Corp v Fulgham* 224 Va 235, 294 SE2d 894 (9 September 1982).

[31] *Drayton v Jiffee Chemical Corp* (CA6 Ohio) 591 F2d 352, 12 Ohio Ops 3d 135, 26 UCCRS 865 (19 December 1978); *Osborne v Bessonette* 265 Or 224, 508 P2d 185 (23 March 1973).

[32] *Brown & Root, Inc v De Sautell (Tex Civ App Houston(1st Dist))* 554 SW2d 764 (16 June 1977).

[33] *Le Master v Chicago R I & P R Co* 35 Ill App 3d 1001, 343 NE2d 65 (10 February 1976).

[34] Ken Cooper-Stephenson, *Personal Injury Damages in Canada* (Canada: Carswell Thomson Professional Publishing, 2nd ed, 1996), pp 56-66.

[35] (1987) 63 Nfld & P E I R 1 at 12 (Nfld CA).

[36] (1978) 83 DLR (3d) 452 at 458 (Supreme Court of Canada).

basic principles of the law of damages and seek to achieve a reasonable approximation to pecuniary *restitutio in integrum* expert assistance is vital.[37]

Nevertheless, Dickson J went on to explain that the trial judge had a degree of freedom in dealing with the evidence presented by experts. The trial judge is entitled to make the necessary adjustment in light of the specific evidence and circumstances surrounding the claim. The same line of reasoning was also reflected in the English House of Lords decision in *Wells v Wells*, which stated that the judge should not be a 'slave' to the actuarial tables.[38]

Scotland
In Scotland, it was held in *O'Brien's CB v British Steel Plc*[39] that the Ogden Tables could be used as a cross check, but not a starting point, in selecting the multiplier for future services or care costs. However, the Ogden Tables should not be used in assessing future loss of earnings. Lord President Hope took the view that the factors which had to be taken into account in selecting a multiplier for future wage loss, are not the same as those which were appropriate to a claim for the cost of future care for the remainder of a person's life. He said:

> Mr. O'Brien's likelihood of continuing to earn his pre-accident wage up to the retirement age of 65 was affected by all the familiar risks relating to his state of health, the risk of injury or death due to accident, the possibility of redundancy and various factors, all of which are impossible to quantify but must be taken into account by discounting the multiplier... On the other hand the requirement to pay for the cost of future care will continue throughout the remainder of Mr. O'Brien's life irrespective of whether he could have remained in employment during that time.[40]

It is submitted that the above argument was obviously founded on a misapprehension of the nature of actuarial science and the function of the Ogden Tables.[41] The actuarial multiplier derived from the Ogden Tables is only a starting point. The court is entitled to make adjustment for contingencies resulting in a temporary loss of earnings. Such an adjustment will chiefly depend on the evidence and facts of the individual case, concerning the factors suggested by Lord President Hope. The latest edition of the Ogden Tables has given clear explanatory notes and guidance in respect of such adjustment.

[37] (1980) 14 CCLT 294 at 308-9 (Supreme Court of Canada).
[38] Notes 3 and 12 above.
[39] [1991] SC 315.
[40] Ibid, p 329.
[41] See David Kemp QC, *Damages for Personal Injury and Death* (London: Sweet & Maxwell Limited, 7th ed, 1999), p 245.

Fortunately, this judicial error was promptly corrected in Scotland through subsequent court decisions. In *Logan v Strathclyde Fire Board*,[42] the court held that the Ogden multiplier should be applied as a starting point for the assessment of future loss of earnings, not just the cost of future care. The court decided that the ruling of the English House of Lords in *Wells v Wells* disclosed nothing that was particular to English law, and it should be followed in Scotland. The court proceeded to use the Ogden Tables to assess the plaintiff's future loss of earnings. A more recent Scottish example is *McManus' Executrix v Babcock Energy Ltd*.[43] The victim died on 28 December 1996 as a result of mesothelioma, caused by exposure to asbestos while employed as a pipe fitter. The Scottish court followed *Wells v Wells* and affirmed the judicial status of the Ogden Tables. In assessing the widow's claim for future loss of earnings, the Ogden multiplier must be regarded as the starting point rather than a mere check:

> So far as the multiplier was concerned, parties before me were essentially agreed that, in light of the House of Lords decision in *Wells v Wells*, as applied in Scotland to loss of earnings claims by Lord Macfadyen in *McNulty v Marshalls Food Group Ltd* and Lord Eassie in *Logan v Strathclyde Fire Board* the appropriate starting point at least was to select a figure by reference to the Ogden Tables, on the basis of a rate of return of 3 per cent. It was agreed that the appropriate table 3 (multipliers for loss of earnings to pension age of 65(male)) produced a figure of 7.5.[44]

Using the Ogden actuarial multiplier of 7.5 as the starting point, the court went on to adjust that value by looking into the evidence and facts in connection with the victim. These factors included his residence in Scotland, his 'risky occupation', the possibility of loss of earnings caused by strikes and the contingency that the widow herself might not survive. The court decided that, considering all circumstances, a reasonable multiplier would be 6.5. Looking to previous case law, the multiplier would have been only about 5. However, the Scottish court boldly abandoned the conventional multiplier of 5 and adopted the actuarial multiplier on the foundation of the Ogden Tables.

In contrast, Singapore[45] and Malaysia[46] are still currently using the conventional approach in choosing multipliers, without admitting any actuarial evidence. They are encountering the same problems as Hong Kong is facing.

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[42] [1999] Rep LR 97 per Lord Eassie.
[43] [1999] SC 569.
[44] Ibid, p 586, per Lord Kingarth. *Logan v Strathclyde Fire Board* is cited at note 42 above; *McNulty v Marshalls Food Group Ltd* is reported at [1999] SC 195.
[45] See *Khoo Ih Chu v Chong Hoe Soing* [1989] SLR 855; *Ooi Han Sum & Anor v Bee Hua Meng* [1991] SLR 824; *Visvalingam a/l Arumugam v Toh Gim Choon (S Vickneswaran: third party)* [1998] 3 SLR 974.
[46] See *Ta Kong Tabari v Government of Sarawak & Ors* [1998] 4 CLJ 589.

Is there a need for reform in Hong Kong?

Litton VP of the Hong Kong Court of Appeal (as he then was) said that economists and actuaries were not prophets.[47] Of course they are not prophets. Prophecy and actuarial science are two totally different matters. It is submitted that the judges' refusal to admit and consider actuarial evidence was based on a fundamental misconception of the nature of actuarial science. It matters not that only *one* individual is to receive the amount of the assessment, or that he may die the next day, or for that matter lives to be a centenarian. So far as that individual is concerned, at the date of assessment, he should be awarded fair compensation in the sense that *if* there had been a very large number of similar individuals of the same age all receiving the same amount, then overall the amounts would have equated to the stated payments, allowing for the operation in due time of compound interest and mortality. The memorandum prepared for the UK Law Commission by a Working Party of the Institute and Faculty of Actuaries explained the issue clearly:

> Nor are the theories of probability and present value invalidated by the situation—very common in practice—that statistics for an identical group of lives do not exist. In practice it is necessary, more often than not, to proceed from the known to the unknown, to the determination of probabilities suitable to a *particular* risk, using material that is the best available to do the job. The whole of the actuary's training and experience is devoted to bridging this gap—to the choice of the most suitable statistics and, above all, to their application and adjustment to the circumstances of a particular situation, as they are seen to be at a particular moment of time. His opinion of the assessment in a particular case is therefore that of a professional expert skilled in this very art. Moreover, to discard his opinion on the grounds that precisely relevant statistics are not available would be to deny the usefulness of a technique that lies at the root of innumerable commercial transactions that are taking place daily.[48]

The difficulties which judges and lawyers generally have experienced in interpreting actuarial evidence and appreciating the assistance which it can give no doubt largely explain the reluctance of those advising litigants to instruct an actuary.

The implications of *Wells v Wells* in Hong Kong have not yet been felt. As discussed, the Hong Kong courts, following the Hong Kong Court of Appeal's decision in *Chan Pui Ki* in 1996, have resumed using the conventional

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[47]   Note 2 above, p 592.
[48]   Note 41 above, p 240.

approach to determine multipliers. On the other hand, it would not be practical for the Hong Kong courts to simply adopt the Ogden Tables, as they were constructed in the light of circumstances in the United Kingdom, not of Hong Kong. For example, the following graph (Figure 1) compares the population mortality experience between Hong Kong and the United Kingdom. It shows that Hong Kong enjoys a more favourable mortality pattern (except for very old ages) as compared to the United Kingdom. Hence, the appropriate multipliers for Hong Kong should be larger than those values in the Ogden Tables. Furthermore, investments in ILGS (British Index-linked Government Securities) are also not available in Hong Kong. Nevertheless, if the Hong Kong courts continue to use the conventional approach, the multipliers would not be linked to the mortality experience and the local economic environment. The economic landscape and mortality patterns in Hong Kong have been changing rapidly during the last thirty years. It is practically impossible to find any truly comparable cases, having similar factors in respect of age and sex of the victims, mortality experience of the general population, inflation, taxation and investment return rates. Therefore, the fairness of conventional multipliers, which are based on analogy, is questionable.

Figure 1: UK rates of mortality as percentages of Hong Kong rates
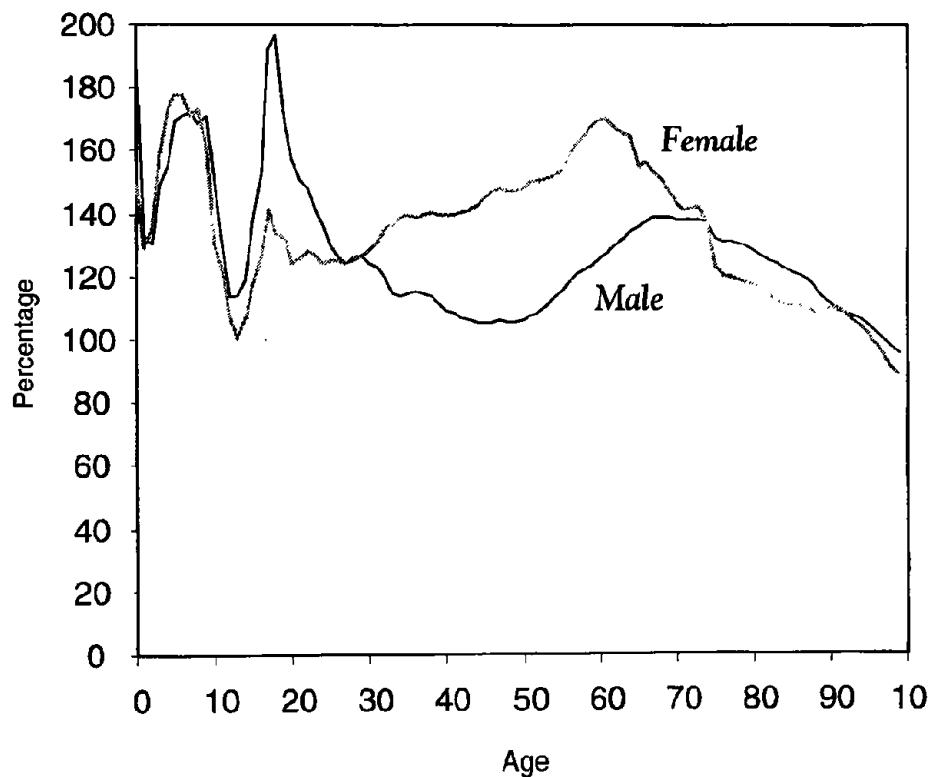
Source: English Life Tables and Hong Kong Life Tables (1997), Hong Kong

The Hong Kong courts have been slow to move to a standard method of assessing future loss by means of actuarial annuity tables. The need for reform is pressing. Interdisciplinary research between lawyers and actuarial experts should be pursued. The actuary undertaking the valuation of pecuniary loss will require the following principal elements as the foundation for the construction of the actuarial annuity tables: (a) mortality and contingencies; (b) earnings progression and inflation; (c) investment returns; and (d) taxation. Using Hong Kong as an example, these statistical data and information can be collected from various sources, *inter alia*:

- *Hong Kong Life Tables*, Demographic Statistics Section, Census and Statistics Department, Hong Kong.
- *Half-yearly Report of Wage Statistics* and *Monthly Report on the Consumer Price Index*, Census and Statistics Department, Hong Kong.
- *Measurement of Investment Performance Survey for Hong Kong Retirement Schemes: Annual Report*, Wyatt (Hong Kong) Company Limited.
- *Handbook of Hong Kong Tax Statutes*, Hong Kong: Butterworths.

It is suggested that modified forms of the Ogden Tables can be constructed for Hong Kong utilising an analogous methodology. The three sets of actuarial tables include: (a) Multipliers for pecuniary loss for life; (b) Multipliers for loss of earnings to pension age and (c) Multipliers for loss of pension commencing from the retirement age. Each set of tables should be comprised of different tables of multipliers, computed under different combinations of factors such as gender (male or female), mortality basis (observed or projected) and retirement age.

Conclusion

J H Prevett, an actuary, made the following comments, which are pertinent to understanding the division of roles between judge and actuary:

> The court is not able to do the best it can if it fails to apply tools which are available to reduce a complex problem to simpler and more manageable proportions. The use of such tools does not in any way remove the need for the application of judgment and experience but it allows these qualities to operate within more rational and logical limits.[49]

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[49] 'Actuarial Assessment of Damages: The Thalidomide Case – I' (1972) 35 MLR 140 at 141.

Unfortunately, the law of personal injury compensation in Hong Kong has fallen behind in many areas. Actuarial evidence has historically not always been favoured by the courts, in part because of the perceived inability of actuaries to explain technical aspects of their work effectively in written and oral testimony. Robin De Wilde QC commented in the introduction to the fourth edition of the Ogden Tables, and following the English Court of Appeal's judgment in *Wells v Wells*: 'Rightly was it said that most barristers and even more judges do not understand money'.[50] Interdisciplinary scholarship and research are only just catching on. The reluctance to hear expert evidence is symptomatic of the Anglophile outlook. Further, the exclusive examination of cases is a perpetuation of the self-referential characteristic of English law that has been followed closely by the Hong Kong courts in the past. The advent of admitting actuarial evidence in the courts of England and other jurisdictions seems to have generated suspicion, or even fear, in the Hong Kong Court of Appeal. This attitude has been abundantly shown in the Hong Kong Court of Appeal in *Chan Pui Ki*. The court ruled against the use of actuarial evidence in assessing future loss of earnings and stated that 'this is a trend which must stop'.[51] However, we are living in a period of dynamic change. England, the United States of America and Canada are ahead at the moment in respect of personal injury compensation. Australia is next, then Scotland, with Hong Kong surprisingly lagging behind. But it should not be long before Hong Kong catches up, if the courts are prepared to respond and not be reactionary when it comes to coping with the challenge of change. As Professor Ison stated:

How any society responds to the need of those who are disabled from earning, and the dependants of those who are prematurely killed is surely one of the moral indicators of its civilization.[52]

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[50] Note 4 above, p xi.
[51] Note 2 above, p 591G.
[52] T Ison, 'Human Disability and Personal Income' in L Klar (ed) *Studies in Canadian Tort Law* (Toronto: Butterworths, 1977).