

Sexual differentials in mortality

Stephen Richards outlines the problems with the European Commission's proposals on unisex pricing.

SEXUAL DIFFERENTIALS IN MORTALITY are so pronounced and long-established that actuaries have been using them for hundreds of years. A new proposal from the European Commission, purporting to implement the principle of equality between women and men, seeks to ban insurers from using sex as a rating factor for both general and life insurance. Actuaries must not be complacent and assume that, just because sexual differentials are self-evident, they will be allowed to use them for pricing without robust justification.

Background

In early November 2003, the European Commission published a proposal for a directive which would affect all forms of personal lines insurance which have different prices for men and women. If implemented, the proposal would force insurers to change their pricing and tariffs to a unisex basis within six years, depending on how quickly their own national legislatures pass the directive into national law. Only new contracts concluded after the so-called 'transposition date' would be affected. After

this, the burden of proof in any claim of discrimination would lie with the insurer, not the plaintiff.

The directive was not originally about insurance, but actually covered sexual equality in access to goods and services in general. Intriguingly, effective behind-the-scenes lobbying by hairdressers saw them keep their right to charge women higher prices. Hairdressers clearly have something to teach actuaries about lobbying skills, since the directive is now essentially about abolishing actuarial freedom to use sex-differentiated pricing.

EU law

The principle of equal treatment has developed from an isolated provision on equal pay in the Treaty of Rome. Subsequent revisions of the treaty have extended the legal base for sexual equality. For instance, Article 2 of the European Community Treaty enshrines the promotion of equality between men and women as a fundamental principle, while Article 3(2) confers on the Community a specific mission to include consideration of sex matters in all its activities.

In addition, secondary legislation has also been used to create rights for citizens. The proposed new directive on sexual equality is based on Article 13, which confers power on the European Council to combat discrimination on a number of grounds, including sex. The European Council must be unanimous to act

on a proposal from the Commission, and the European Parliament must be consulted. It is important to note that the draft directive must therefore be agreed unanimously by all member states before the Council adopts it formally.

The first reading of the proposal will take place in a plenary session of the European Parliament in March 2004.

Definition of discrimination

There is more than one definition of the word 'discrimination' in the English language. The most common meaning is the unfair treatment of a person, racial group, or minority, ie action based on prejudice (*Collins Dictionary of the English Language*). Most people are opposed to unfair treatment of any kind, and the EU is right to seek to eliminate this sort of discrimination.

It is interesting to note that the word 'discrimination' has a second meaning in English: the ability to identify distinctions and differences, ie recognising differences in a non-discriminatory manner. The insurance industry prices for risk and, where there are proven differences in risk, prices will differ to reflect this.

As the rest of this article will show, there are clear differences in male and female mortality rates. As a result, sex is widely used as a rating factor in insurance tariffs, both throughout the EU and in the rest of the developed world. Since males and females present different mortality risks, sex-based insurance tariffs are neither unfair nor prejudiced. Insurers price according to risk, and the risk is not the same.

Flaws in the argument of the directive

The directive affects all forms of private insurance, which is ironic since the examples and arguments contained therein relate largely to a very specific product line: annuities and life expectancy. In fact, this is doubly ironic, since pension annuities represent a major class of business only in Ireland and the UK, and not in any of the other 13 EU member states (or in any of the ten new 'accession states', for that matter). It is unclear why the directive is justified with reference to a product which is largely irrelevant to the majority of EU residents.

The text of the directive claims that 'studies show that sex is not the main determining factor for life expectancy'. This is true in the very narrowest sense: age is the dominant factor for future life expectancy. However, Prudential's analysis of its own annuitant mortality experience shows that sex is the next most important factor, far ahead of any other factors readily available, such as lifestyle or socio-economic group.

The directive further claims that 'the growing gap in life expectancy... cannot be attributed to biological

Table 1 Selected age-standardised cancer mortality rates per million

Cause of death	Male	Female
Cancer of cervix uteri	0	31
Ovarian cancer	0	112
Breast cancer	3	308
Prostate cancer	274	0

Source: ONS, 2001 figures, European Standard Population



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differences'. This is an interesting claim, as a quick check of the ONS figures for the UK in 2001 shows (see table 1).

Sexual differentials in these mortality rates are, by their very definition, biological: few women have a prostate gland to turn cancerous, yet it is the second-biggest cancer killer for males in the United Kingdom. Similarly, very few men can ever die of cancer of the ovaries or cervix. Most significantly of all, breast cancer is the major cancer cause of death for women in the UK, but a very uncommon cause of death for men.

Biologically based mortality differentials also extend beyond the obvious physical differences between men and women. Consider the mortality rates for diseases of the circulatory system shown in table 2.

Ischaemic heart disease is the major killer of both men and women in retirement, but male mortality rates are higher at all ages. One reason for this lies with behavioural differences, but there is also a very important biological driver: male and female hormones have sex-specific interactions with the processes leading to heart disease.

The directive also claims that 'other factors have been shown to be more relevant, such as marital status, socio-economic factors... and nutrition habits'. These are indeed important rating factors, but the text misses a pivotal point: the strength of these factors varies significantly by sex. For example, Prudential's own mortality experience – and that of the ONS itself – shows that the impact of socio-economic mortality differentials is strongly linked to sex.

One final word on the question of biology versus lifestyle. By definition, the unborn and newly born have not yet had the chance to make different lifestyle choices which could affect their mortality. Unless a mother-to-be behaves differently according to the sex of her child, environmental factors should be similar for newborn babies of either sex. There should, therefore, be no difference in male and female perinatal mortality, ie stillbirths and deaths in the first week of life. Sex-specific perinatal mortality rates are hard to come by, and some EU member states do not even provide aggregate rates. However, the General Register Office in Scotland does provide figures covering successive five-year intervals from 1946 onwards. These figures show typical excess male perinatal mortality of around 15%, with figures varying from 10% to 20% higher than the female rate. It looks as if males are 'programmed' with higher mortality because of their biology.

Risks

This directive clearly poses a threat to actuaries' ability to price accurately for risk in personal lines insurance throughout the EU. A ban on the use of sex in setting tariffs and pricing would deprive insurers of a key rating factor for risk. In addition to extra pricing risk, operational risk would also increase as the sexual mix in new business would have to be constantly monitored to avoid anti-selection.

Consumers would lose as much as they would gain. Young women would pay higher car insurance premiums to subsidise the claims of young men. Older men would receive lower annuities in retirement. Insurers would be forced to raise prices not just to cover the average cost, but also to raise them still further to cover additional pricing and anti-selection risks. Some insurers may even withdraw from certain markets, reducing the advantage of open competition to consumers. It is possible that, where sex is a critical risk factor, some insurance markets might cease to exist as we know them.

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Law of unintended consequences

Proponents of unisex insurance tariffs would argue the importance of sexual or social solidarity. One cannot but respect the intentions which lie behind such feelings, even if the justification given is not based on facts. However, unisex pricing in insurance has a number of very important secondary consequences which are not obvious to the casual observer. I shall illustrate a few key ones in relation to pension annuities, which is the Commission's own choice of product example.

Around four-fifths of individual pension annuities in the UK are written to a male first life. One – presumably unintended – consequence of unisex annuity rates may be to lower household income for future pensioner couples, both men and women. The majority of annuities written with a male first life also have dependent spouse's benefits. Since most wives outlive their husbands, it is ironic that the surviving female spouse may then have a lower income under unisex pricing, owing to the reduction in her husband's initial pension.

There are possible pre-retirement consequences, too. As all EU governments know, it is difficult to persuade people to save privately for their own retirement. Faced with not receiving fair value from a unisex annuity, men will have a reason not to put money into a pension fund. The consequence would be greater reliance on state benefits at a time when governments across the EU are trying to accomplish the very opposite.

Conclusion

The EU rightly outlaws unjustified discrimination on the grounds of sex. However, the proposed directive fails to recognise that insurers price for risk, not prejudice. This article shows that there is no basis for the 'facts' claimed in the Commission's proposal, however well-meaning the original intention. Actuaries must always be prepared to justify their practices, and must always be able to demonstrate that their work is based on solid facts. □

Table 2 Selected age-standardised circulatory mortality rates per million

Cause of death	Male	Female
Ischaemic heart disease	1,876	880

Source: ONS, 2001 figures, European Standard Population