International Association for the Study of Insurance Economics

26
October 2010

World Fire Statistics

Information Bulletin of the World Fire Statistics Centre

Geneva Association Information Newsletter

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The Geneva Association

The Geneva Association is the leading international insurance "think tank" for strategically important insurance and risk management issues.

The Geneva Association identifies fundamental trends and strategic issues where insurance plays a substantial role or which influence the insurance sector. Through the development of research programmes, regular publications and the organisation of international meetings, The Geneva Association serves as a catalyst for progress in the understanding of risk and insurance matters and acts as an information creator and disseminator. It is the leading voice of the largest insurance groups worldwide in the dialogue with international institutions. In parallel, it advances—in economic and cultural terms—the development and application of risk management and the understanding of uncertainty in the modern economy.

The Geneva Association membership comprises a statutory maximum of 90 Chief Executive Officers (CEOs) from the world's top (re)insurance companies. It organises international expert networks and manages discussion platforms for senior insurance executives and specialists as well as policy-makers, regulators and multilateral organisations. The Geneva Association's annual General Assembly is the most prestigious gathering of leading insurance CEOs worldwide.

Established in 1973, The Geneva Association, officially the "International Association for the Study of Insurance Economics", is based in Geneva, Switzerland and is a non-profit organisation funded by its members.

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Aims and Activities of the World Fire Statistics Centre

The Centre's main objective is to persuade governments to adopt strategies aimed at reducing the cost of fire which, although running at around 1 per cent of GDP in most advanced countries, has generally received much less attention than the cost of crime or of road accidents. In pursuit of this objective, the Centre collects statistics on national fire costs (see Contents above) from some 20 leading countries, upon which it reports annually to a United Nations Committee.

Apart from undertaking an annual questionnaire enquiry among national correspondents in participating countries, the Centre also makes use of relevant data published by the World Health Organization in respect of its annual causes of death enquiry, in which many of its member countries take part.

World Fire Statistics Centre (affiliated organisation of The Geneva Association):
Director: Prof. Brian WOODROW

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See also: *www.genevaassociation.org/Affiliated_Organizations/WFSC.aspx*

The Geneva Association Newsletter – "World Fire Statistics", No. 26, October 2010
Information Bulletin of the World Fire Statistics Centre

This information bulletin of the World Fire Statistics Centre appears annually. It presents statistics on national fire costs from around 20 leading countries in an effort to persuade governments to adopt strategies aimed at reducing the cost of fire. It has been published since March 1984.

Printed copies: 1'100. Unrestricted circulation. Free of charge.

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ISSN:1605-8291

I. EDITORIAL: FIRE AS VULNERABILITY—THE CHANGING FACE OF WORLD FIRE STATISTICS

By Brian Woodrow[*]

From the earliest times, fire has been regarded as one of the elemental forces shaping life on Earth. The early Greeks treated fire as one of the four essential elements which make up our world—along with earth, air and water—and there were similar understandings in Ancient China, India and elsewhere. Fire possesses both powerful destructive and enabling properties, whether occurring within the natural and physical world or when ignited deliberately or accidentally by humans. Its captivating flames continue to fascinate us, its heat and light sustain our lives, its elemental energy underlies our technological civilisation and, when in an uncontrolled state, fire can and has caused destruction, damage and loss of life of great magnitude.

Over the centuries, our understanding of fire has changed and progressed. Instead of being just an elemental force, modern science has lead us to understand fire as a chemical process of combustion, to investigate the varied contexts and conditions in which combustion will and does occur, and to invent ways and means of averting or dealing with its incidence. Fire no longer holds the same pervasive mythological and mystical connotations it once did, and modern economies and societies now accept fire as one of many risks to life and property which must be managed. Widespread multi-risk property and casualty insurance, improved fire protection services and activities, stricter construction and building codes, more extensive safety standards for products and materials, and more sensitive urban and environmental planning have all helped to reduce the danger and damage of uncontrolled fire. Still, the scale, scope and intensity of fire as vulnerability remains great, leading the WFSC in the 1980s to estimate the economic cost of fire at around 1 per cent of gross domestic product in developed countries—an estimate which remains widely accepted to the present day.

It is the destructive aspects of fire which has been the prime concern of the World Fire Statistics Centre since its inception in the early 1970s. Surprisingly given its clear importance, work on fire statistics has generally not been undertaken by national governments themselves nor by any of the possible international organisations which might have taken on the task. Grounded upon the shared interest of the insurance industry in learning more about the risks posed by fire and driven by the talents and energy of Tom Wilmot and later Tony Paish, The Geneva Association has provided the congenial home within which the WFSC could operate and develop over the past nearly 30 years. Over those years, Tom and Tony developed, revised and applied the basic methodology for assessing fire costs in the European context and then extended it to North American and selected Asia/Pacific countries.

The process of assembling and validating world fire statistics is a difficult and exacting one. By integrating data on insured fire losses to property and goods with data on deaths and injuries caused by fire each year as well as public expenditure on fire protection and related services, national correspondents specifically familiar with the fire situation within their own countries respond to a questionnaire each year and submit their national data. It is important to note in passing that the questionnaire has always sought data on fire as classified and collected primarily in relation to the deaths and damage caused and costs incurred in an urban/residential/commercial/industrial context. The WFSC then assembles this data for each country, standardising it and adjusting for elements that might be missing or underrepresented, and then makes its results public in an annual report to the United Nations Economic Commission for Europe (UNECE) and through a WFSC information bulletin issued subsequently: *http://www.genevaassociation.org/Affiliated_Organizations/WFSC.aspx*. Despite the sad fact that only about 20 of the world's countries are presently accounted for in the current results, the WFSC reports are where practitioners and others interested go when looking for national or comparative statistics on fires affecting modern economies and societies.

Not only will it be important in the coming years to increase the number of countries reporting and especially to extend its global reach and representation, it will also be important for the WFSC to take account of the changing contexts and conditions within which fires arise and cause death and destruction. First and foremost, the increasing incidence and importance of wildfires in many of the reporting countries and elsewhere is not currently being properly recognised in terms of the damage they cause to resources and the environment. Forest fires have long been treated separately from fires

[*] Professor, University of Guelph.

in urban areas, and statistics on forest fires—which have not been collected directly within the WFSC database but are available from other sources—are typically represented in terms of numbers of incidents and hectares of forest burned rather than in terms of economic losses. There are reasons why wildfires have not been taken adequately into account: forests are often in public rather than private hands and not valued economically; only when an insured structure is damaged or destroyed or deaths or injuries occur will a claim be made, and the cost of insuring forested land against fire is usually prohibitive. Nevertheless, wildfires are an increasingly prevalent natural disaster in many countries around the globe and, as the wildfire-urban interface becomes more extensive, greater attention needs to be directed to their incidence, scope and economic importance.

Greater attention needs also to be directed towards viewing fire in a broader risk management and disaster mitigation perspective. In articles and interventions at numerous conferences over the past two decades, Tom and Tony have called repeatedly for governments to develop "national risk management strategies" within which "a national fire strategy" would be one important component. The starting point for such a strategy must be the collection and availability of comparable and reliable statistics on fire deaths and injuries, direct and indirect fire losses, and the costs of fire protection and prevention activities. That focus has been at the heart of the WFSC mission from its inception and must remain so. In addition, however, it is also important to situate fire among the wide range of natural disasters occurring worldwide each year—from volcanoes and earthquakes to windstorms and heatwaves—and to understand the possible linkages and comparabilities among them. Only then can we see where fire fits in the broader picture and how governments, practitioners and informed citizens can make proper decisions about and take cost-effective actions in adopting risk management and disaster mitigation strategies in the years to come.

Thirdly, one common theme underlying these new understandings of fire is the notion of fire as vulnerability. The concept of vulnerability has drawn increasing attention within the natural, physical and social sciences over the past decade or so and provides an interesting way of understanding the future role and importance of fire. The Applied Services Economic Centre (ASEC) Services and Vulnerability project is just one example of such a focus on the concept of vulnerability. (*http://www.genevaassociation.org/Affiliated_Organizations/ASEC.aspx*). In essence, vulnerabilities are those contexts and conditions, inherent or circumstantial, which precede the occurrence of extreme events whose specific causes and consequences may be largely unpredictable. Uncontrolled fire, as is evident in the increasing incidence of wildfires or the continued burning of fossil fuels, may act as one vector of vulnerability which leads to those extreme events and, through rising global temperatures, contributes to global climate change of significant size and scope. Indeed, the Intergovernmental Panel on Climate Change (IPCC) has only recently identified fire as just such a vector of vulnerability and contributor to global climate change in its climate models.

Just as our understandings of fire itself and its causes and consequences are changing as well as our requirements for world statistics on fire, so too the World Fire Statistics Centre is in transition. The work which Tom Wilmot began over 30 years ago and which Tony Paish then assisted him with and continued on—a true "labour of love" but hard work nonetheless—is passing on to other hands. After more than 15 years of dedicated and most able service, Tony Paish is relinquishing his responsibilities as Director of WFSC in London, although the good news is that Tony has kindly agreed to continue to share his formidable energy and expertise as national correspondent for the United Kingdom.

Professor Brian Woodrow of the University of Guelph has agreed to take on the task of running the WFSC and gradually to integrate WFSC activities with his current responsibilities at ASEC. The WFSC will still be domiciled in Geneva as it has been from the outset, though the day-to-day operations for both will now move from London to the city of Guelph, near Toronto in Canada where ASEC is based. For my part and on behalf of The Geneva Association, I want to thank Tony Paish most sincerely for his dedication to the work of the WFSC and I look forward to the opportunities, challenges, and changes which will undoubtedly lie ahead as the World Fire Statistics Centre goes forward.

Prof. Brian Woodrow
Director
World Fire Statistics Centre

United Nations Fire Statistics Study

The Centre presented its annual report to the UN Committee on Housing and Land Management at the meeting in Geneva in September 2010.

The following eight tables of international fire cost comparisons are based on those which appeared in the report:

II. COST OF DIRECT FIRE LOSSES—Table 1

Table 1

Adjusted direct losses (in millions, except for Japan—billions)

Country	Currency	2005 Direct Losses	2006 Direct Losses	2007 Direct Losses	Percentage of GDP 2005-07	
Singapore	$S	135	125	110	0.05	
Czech Republic	CzKr	1,850	2,200	2,450	0.07	
Poland	ZI	645	750	920	0.07	
Slovenia	SIT				0.07	(2002-04)
Australia	$A	855	845	885	0.08	
United States	$US	12,000	13,000	16,500	0.10	
New Zealand	$NZ	165	165	180	0.11	
Hungary	Ft				0.12	(1986-88)
Japan	Yen	615	625	560	0.12	
Spain	Pta				0.12	(1984)
Germany	€	2,900	3,300	3,400	0.13	
United Kingdom	£	1,900	1,650	1,600	0.13	
Netherlands	€	765	745	900	0.15	
Finland	€	225	260	315	0.16	
Canada	$Can				0.17	(1999-2001)
Italy	€	2,350	2,350	2,700	0.17	
Sweden	SKr	4,750	4,300	5,400	0.17	
France	€	3,350	3,300	3,400	0.19	
Denmark	DKr	2,600	3,000	4,050	0.20	
Norway	NKr	3,850			0.22	(2003-05)
Switzerland	SwF				0.23	(1989)
Belgium	€				0.24	(1998-2000)
Austria	Sch				0.26	(1998-2000)

Note : Fire losses include explosion losses following fires, but exclude explosion losses where no fire occurs (for example, some acts of terrorism).

III. COST OF INDIRECT FIRE LOSSES—Table 2

Table 2

Average percentage of GDP (2005-07)

Country	%
Norway	0.002 (2003-05)
Czech Republic	0.005 (2000-02)
USA	0.006
New Zealand	0.007 (2004)
Sweden	0.008
Finland	0.009
France	0.010
U.K.	0.011
Italy	0.014 (1993-94)
Austria	0.016 (1998-2000)
Japan	0.016 (1985-86)
Germany	0.017
Slovenia	0.021 (2002-04)
Canada	0.022 (1991)
Netherlands	0.027 (1995-96)
Denmark	0.029 (1993-95)
Hungary	0.029 (1992-93)
Switzerland	0.095 (1989)

Note: This table must be regarded with serious reservations—the figures are produced on widely varying bases and some of the differences seem too large to be credible.

IV. FIRE DEATHS—Tables 3 & 4

Table 3

Country	Adjusted estimates (fire deaths) *		
	2005	2006	2007
Singapore	5	10	
Switzerland °	35	30	15
Austria	45	30	30
Italy		280	250
Netherlands	70	85	70
Australia	140	90	100
Spain	280	245	235
Germany	605	510	
New Zealand	30	25	35
U.K.	515	515	465
France	660	620	605
Ireland	45	40	55
Sweden	110	90	100
USA	4,000	3,550	3,750
Norway	65		
Denmark	85	70	70
Czech Republic	145	150	135
Greece	140	100	265
Poland	590	605	600
Japan	2,250	2,100	2,050
Hungary	195	180	175
Finland	85	125	95

* Adjusted for deaths unknown to fire brigades and/or hospitals, and for rounding.
° Excluding firefighter deaths; deaths in buildings only.

Population Comparisons for Fire Deaths (2005-07)

Table 4

Deaths per 100,000 persons

Country	Deaths per 100,000 persons
Singapore	0.19 (2004-06)
Switzerland *	0.36
Austria	0.42
Italy	0.44 (2006-07)
Netherlands	0.46
Australia	0.53
Spain	0.58
Germany	0.68 (2004-06)
New Zealand	0.72
U.K.	0.82
France	1.02
Ireland	1.09
Slovenia	1.09 (2002-04)
Sweden	1.11
Canada	1.15 (2000-02)
Belgium	1.21 (2004)
USA	1.23
Norway	1.27 (2003-05)
Denmark	1.38
Czech Republic	1.41
Greece	1.52
Poland	1.57
Japan	1.67
Hungary	1.82
Finland	1.93

* Excluding firefighter deaths; deaths in buildings only.

Note: Population figures used are derived from the United Nations Population website.

V. COST OF FIRE FIGHTING ORGANISATIONS—Table 5

Table 5

Average percentage of GDP (2005-07)

Country	%
Singapore	0.03
Slovenia	0.05 (2002-04)
Denmark °	0.07
Austria	0.11 (1994)
Norway	0.11 (2003-05)
Belgium	0.14 (1998-2000)
Sweden	0.14
Australia	0.15
New Zealand	0.16
Poland	0.16
Netherlands	0.18
Finland ×	0.20
U.K.	0.21
USA	0.26
Japan	0.32
Canada	0.35 (1991)

° The low Danish cost is largely due to the private company, Falck, which runs many fire brigades, together with ambulance, rescue and motor breakdown services.

× Excludes the cost of private fire brigades.

VI. COST OF FIRE INSURANCE ADMINISTRATION*—Table 6

Table 6

Average percentage of GDP (2005-07)

Country	%
Hungary	0.01 (1987-88)
Singapore	0.02
Finland	0.03
Netherlands	0.04 (1987-88)
Germany	0.04
Sweden	0.04
Italy	0.05
Spain	0.05 (1986)
Canada	0.06 (1991)
Slovenia	0.06 (2002-04)
France	0.07
Japan	0.08
New Zealand	0.08 (2004)
Denmark	0.09
Norway	0.10 (2003-05)
U.K.	0.11
USA	0.13
Austria	0.14 (1979-80)
Belgium	0.23 (1999-2000)

***** "Administrative costs" cover all expenses incurred in transacting fire insurance, including marketing costs and commission, except for the costs of paying and administering claims.

VII. COST OF FIRE PROTECTION TO BUILDINGS—Tables 7 & 8

Table 7

Estimated Cost of Fire Protection to Buildings

Country	Fire Protection° (%)	Currency	Cost in millions (except for Japan – billions)		
			2005	2006	2007
Australia		$A	3,600		
Canada	3.9	$C	4,100	4,650	5,000
Czech Republic	3.0	CzKr	5,300	6,050	6,950
Denmark	5.0	DKr	3,600	4,350	4,850
France	2.5	€	2,900	3,200	3,400
Italy	4.0	€	5,200	5,250	5,300
Japan	2.5	Yen	745	760	670
Netherlands	3.0	€	1,450	1,600	1,750
New Zealand	2.5	$NZ	350	380	410
Norway	3.5	NKr	7,050		
Singapore	4.0	$S	450	645	980
Sweden	2.5	SKr	4,850	5,550	6,150
U.K.	2.5	£	2,700	2.900	3,050
USA		$US	46,000	48,500	61,500

° Estimated cost of building fire protection in relation to total national cost of building and construction.

Note: In the United Kingdom, the estimated fire protection costs varied from 1 per cent for housing to 7 per cent for hospitals and office buildings; in the United States, from 2.5 per cent for housing to 12 per cent for private non-residential structures; and, in Canada from 2 percent for single homes to 13.2 per cent for high-rise apartments.

Cost of Fire Protection to Buildings

Table 8

Average percentage of GDP (2005-07)

Country	%
Japan	0.14
Slovenia	0.16 (2002-04)
France	0.18
Czech Republic	0.19
Sweden	0.19
U.K.	0.22
New Zealand	0.24
Denmark	0.26
Belgium	0.29 (1998-2000)
Switzerland	0.29 (1989)
Netherlands	0.30
Singapore	0.31
Canada	0.32
Italy	0.35
Norway	0.36 (2003-05)
Australia	0.37 (2005)
USA	0.39
Hungary	0.42 (1987-88)

VIII. UN SCHEME ENDORSED

In their session held in Geneva on 20-21 September 2010, the United Nations Committee expressed its interest in the Report, thanked Mr Paish, invited the WFSC to present a similar report to the Committee's next session and encouraged countries which had not yet done so to participate in the study.

IX. EUROPEAN FIRE SAFETY ACTION

In a report on "Social and Economic Challenges in Distressed Urban Areas of the UNECE[1] Region" presented to the meeting of the UN Committee on Housing and Land Management in September 2006, the authors drew on the 2005 WFSC report to the Committee in the following paragraph:

> *"For the UNECE region the annual toll of fire deaths is measured in tens of thousands ….*
> *The most effective way to minimize this toll is better fire protection, coupled with consumer education. To coordinate such efforts, urgent actions by governments are needed, which should include (a) collecting fire statistical data and analysis, and (b) developing a national fire safety strategy …."*

Another European fire initiative, organised in 2003 by the Swedish Fire and Rescue Service (SRSA), under a contract from the European Commission's DG III (Environment), was to study "Fire Prevention and Other Incidents" at the European level. This aimed to find common problems associated with fires and to prepare principles and guidance to handle these problems. A group of five countries worked on the project, which resulted in the publication of a comprehensive report, with recommendations for action, in February 2004. As a result, with the support of the Commission, an EU Fire Safety Network, composed of relevant government representatives from EU States, was set up to interchange information and statistics on fire safety matters, and has held regular meetings. The Network's latest initiative is to commission outside researchers to undertake a study of European fire statistics which is now under way.

[1] United Nations Economic Commission for Europe; the region in question covers the whole of Europe, together with all the republics of the former Soviet Union, even though some are situated in Asia.

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X. CONFERENCES ORGANISED AND / OR SPONSORED BY THE GENEVA ASSOCIATION

2010

September

27-28	São Paulo	**2nd CC+I Seminar on "Climate Change: Opportunities for Latin American Insurers"**, hosted by Allianz Brazil

October

4-5	Madrid	**8th Meeting of The Geneva Association's Chief Communications Officers**, *(Chief Communication Officers only)* hosted by Caser Group and MAPFRE
12	Rome	**Italian AXA Forum on "Future, Finance, Trust, Facts. Challenges for financial and insurance industry between reality and perception"**, organised by AXA in Italy, ANIA and The Geneva Association
19-20	London	**7th Liability Regimes Conference on "Exploring Environmental Liability: An Open Flank for Insurers and their Clients"**, hosted by RSA Insurance

November

8-9	London	**1st MENA Insurance CEO Club on "How to set visions for the Middle Eastern and North African countries"**, co-organised by Asia Insurance Review and The Geneva Association
17	London	**5th Meeting of the Climate Change and Insurance Project of the Geneva Association** *(CC+I Working Group members only)*, hosted by Axis Re
18-19	Paris	**7th Health & Ageing Conference of The Geneva Association on "U.S. and French Long-term Care Insurance Markets Development"**, co-organised with Willis Re
24-25	Munich	**6th CRO Assembly on "A vision for risk management in the «new normal»"**, jointly organised by The Geneva Association, Munich Re and CRO Forum

December

6-7	London	**7th International Insurance and Finance Seminar of The Geneva Association**, hosted by Prudential plc

2011

January

11	New York	**Joint Industry Forum for P&C Insurance Industry**, co-sponsored by The Geneva Association
16-18	Singapore	**1st Asian Climate Change Summit on "Tackling Climate Change – Being ready to face threats & Opportunities"**, co-hosted by Asia Insurance Review and The Geneva Association