

The Actuarial Profession

making financial sense of the future

IP vs. BU

A comparison of the UK & German Disability Markets

2003 Life Convention

9-11 November

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Hilton Birmingham Metropole Hotel

Agenda

- q German Background
- q Market Comparison
- q Product Comparison
- q Pricing Comparison
- q Summary

German Background

Germany

- **DAV**
 - Deutsche Aktuarvereinigung
- **BAFin / BAV**
 - Bundesanstalt für Finanzdienstleistungsaufsicht
 - Bundesaufsichtamt für das Versicherungswesen
- **GDV**
 - Gesamtverband der Deutschen Versicherungswirtschaft
- **VVG**
 - Gesetz über den Versicherungsvertrag
- **VAG**
 - Gesetz über die Beaufsichtigung der Versicherungsunternehmen
- **VDR**
 - Verband Deutscher Rentenversicherungsträger
 - Bfa Bundesversicherungsanstalt für Angestellte
 - 22 * Lva Landesversicherungsanstalten

Useful Abbreviations

UK equivalent

- **IoA / FoA**
 - Institute / Faculty of Actuaries
- **FSA**
 - Financial Services Authority
- **ABI**
 - Association of British Insurers
- **Insurance Contract Law**
- **Insurance Company Law**
- **DWP**
 - Department for Work & Pensions

German Background

State Benefit pre 2001

Pre January 2001

- q **Entitlement to disability pension if**
 - q unable to perform own or suited occupation (Berufsunfähigkeit)
 - q had a compulsory contribution period of three years within the last five years before disability occurred and completed qualifying period of five years.
- q **Occupational disability means**
 - q At least 50% disabled in capacity to carry out own profession, or any other reasonable occupation.
- q **Pension is age independent.**
- q **Supplementary income limit for disability pension.**
 - q Introduced in January 1996
 - q Pension reduced to 1/3 or 1/2 dependent on additional income.
 - q 2002 limit for supplementary income = € 325 per Month

German Background

State Benefit post 2001

Post January 1st 2001

- q All insured persons insured in statutory pension scheme lost occupational disability (Berufsunfähigkeit) protection if below 40
- q Replaced by 2 Tier system.
- q **Tier 1**
 - q Pension due to **inability to work** (Voll Erwerbsminderung)
 - q Full reduction of work capacity means **"unable to be active for three hours a day in the general workplace due to health reasons."**
 - q Contribution rules as for pre 2001
- q **Tier 2 (As Tier 1 but...)**
 - q Pension due to **partial** loss of earning capacity (Teilweise Erwerbsminderung)
 - q A partial loss is where a person, for health reasons, **"is able to work > 3 hours but < 6 hours a day on the general work market."**

German Background

State Benefit post 2001

- q **For Both Tiers (& previous BU benefit)**
 - q For general waiting period, following taken into account:
 - q contribution periods (compulsory and voluntary contributions)
 - q child-rearing periods
 - q periods of marginal employment with contributions paid by the employer
 - q periods of compensation (e.g. military service, wartime imprisonment)
 - q Waiting period completed if reduction of earning capacity due to accident at work or injuries incurred during military or community service.
 - q Temporary Claim Acceptance
- q **Transitional phase**
 - q For those over 40 allowing partial occupational disability benefit and Tier 2 benefits if work fewer than 6 hours.
- q **UK State Benefit Definitions**
 - q Short Term Incapacity Benefit (< 28 weeks) = "Own Occupation"
 - q Long Term Incapacity Benefit = "Personal Capability Assessment"

German Background

State Disability Pensioners

German State Disability Pensions

1.8MM receiving disability benefit = 3.2% of working population

Age Group	Total State Disability Pensions			Voll EM			Voll / All
	Female	Male	All	Female	Male	All	
< 25	1,009	1,881	2,890	975	1,852	2,827	98%
25-34	19,721	23,870	43,591	18,866	22,552	41,418	95%
35-44	94,614	108,952	203,566	90,742	97,738	188,480	93%
45-54	209,499	242,119	451,618	199,606	206,393	405,999	90%
55-64	490,855	626,616	1,107,471	468,991	572,807	1,041,798	94%
Total	805,698	1,003,438	1,809,136	779,180	901,342	1,680,522	93%

Source : VDR Bestand 31.12.2002

UK

2.4MM claiming & 1.5MM receiving incapacity benefit end May 2003

4.2% of working population

Excludes Severe Disability Allowance

61% Male, 39% Female

19% under 34, 48% 34-54, 33% 54-64

75% unable to work for more than 2 years

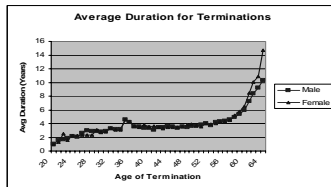
Source : DWP May 2003

German Background

State Disability Duration

German State Disability Duration

For most ages – average claim duration of 4 years



Source : VDR Rentenwegfälle 2002

German Background

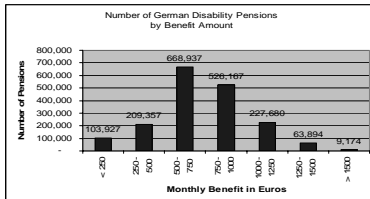
State Disability Amount

German State Disability Pensions

Average Pension = €8,850 pa. (Voll EM €9,000 Teilweise EM €6,750)

Male = €9,700 pa. (Voll EM €10,000 Teilweise EM €7,200)

Female = €7,800 pa. (Voll EM €7,900 Teilweise EM €5,300)



Source : VDR Bestand 31.12.2002

UK

Short Term

Long Term Incapacity Benefit £72.15 per week = €6,300 per year

Supplementary additions for adults with dependents

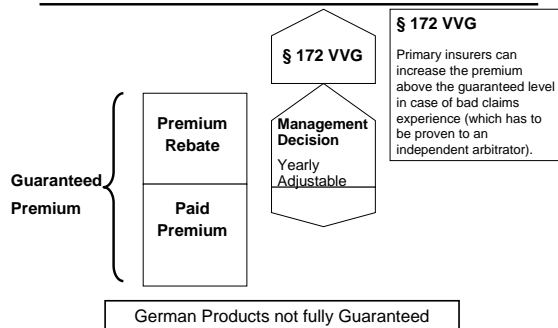
German Background

Insurance Legislation

- q Up until 1994 German market heavily regulated
 - q Pricing and Reserving Bases set by German Insurance Regulators (BAV) in association with actuaries (DAV)
 - q Key aims:
 - Protection of Policyholders
 - All Reserves must be deposited with direct writer
 - » Can't reduce for reinsured business
 - Premium Rates must be Guaranteed
 - » But can be increased under §172 VVG
 - Minimum Profit Share of 90% (Investment and Morbidity/Mortality)
 - Protection of Insurance Firms against bankruptcy
 - High margins in Pricing
 - Ability to increase price under §172 VVG
 - q All products similar as needed to apply to BAV for regulatory approval
 - q Competition was based on amount of profit share offered

German Background

Guarantees



German Background

Insurance Legislation 2

- q In 1994 German Insurance Market deregulated
 - q Minimum Profit Share of 90% to apply to Investment gains only
 - q Theoretically more pricing & reserving freedom
 - q In practice most follow DAV guidance
 - q Standard Mortality/Morbidity Tables
 - q Calculation methods
 - q More variety in insurance products as no need to get BAFin approval.
 - q Only need to inform BAFin of product offered
- q Guaranteed Interest rate
 - q Proposed by BAFin – set by Bundesrat & Bundestag
 - q Minimum interest rate which Insurers must achieve on investments.
 - q Changed when 60% of average Bond yield falls below statutory rate
 - q Changing on 1.1.2004 from 3.25% to 2.75%
- q Solvency Margin
 - q BUZ treated as Life Business (4% of Reserves + 0.3% of "sum at risk")
 - q BUZ treated as Non Life (16-18% of premiums)

Market Comparison

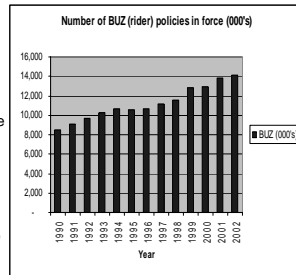
In Force

UK – end 2002

- q 1.4 MM policies in force
 - q Of which around 10% were budget policies
 - q Excludes Waiver Only
- q Additional 1.8MM group policies
- q Estimated 1 in 10 people in workforce with some type of income cover

Germany – end 2002

- q 14MM BUZ policies in force
 - q Includes waiver only products
- q Additional 1MM BUV policies in force
- q Group Cover Not Common
 - q bAV (betriebliche Altersversorgung)
- q Estimated 1 in 4 people in workforce with some type of insured disability cover



Market Comparison

In Force (Germany)

Company	Sum Insured TEURO	No. of Policies
Allianz	136,081,180	2,570,966
Nürnberger	42,317,715	609,039
Axa Colonia	36,229,668	526,967
Aachener & Münchener	35,905,398	950,898
Schweizer Leben & Renten	28,845,111	290,911
Debeka	28,160,700	339,372
Hamburg-Mannheimer	27,273,565	1,038,122
Victoria	26,667,876	491,707
Alte Leipziger	20,480,200	186,541
Cosmos	20,246,936	155,935

Source : GDV

- q Top 10 companies account for 51% of business cf. 80% in UK
- q Companies mostly not household names in UK

Market Comparison

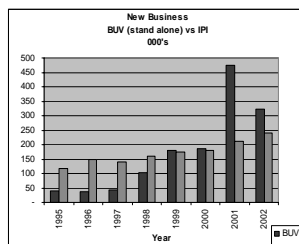
New Business

UK

- q Mortgage Market driving growth from 2000 > 10% p.a.
- q Average benefit £10,693
- q Budget £8,445

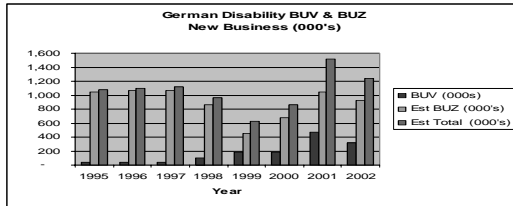
Germany

- q BUV 50% pa growth since 1997
- q Main Driver = change in state benefit in 2001
- q Average benefit £7,800
 - q Does not include BUZ



Market Comparison

New Business



Germany

- Estimated 1.2MM total disability products sold in Germany in 2002
 - Using In-Force Business & conservative 5% lapse rate,
- Roughly 3 BUZ policies to 1 BUZ policy sold
- Average BUZ Yearly benefit in 2002 £3,948

Product Comparison

Definitions

- UK IP – "Own Occupation"
 - Totally unable by reason of sickness or accident to follow one's own occupation and is not following any other occupation."
- Own Suited
 - "inability to follow any other occupation for which suited by education, training or experience".
- Deferred Period
 - Choice of 1,3,6,12 months
- German BU - Berufsunfähigkeit
 - The insured person, due to illness, bodily injury or decline of physical or mental forces, which have to be
 - proven by medical evidence** from a suitably qualified specialist, that
 - Person is expected to be **permanently incapable** to follow **at least 50%** of his profession or that suited by education & social status.

Edv: Qdz = Surj qvrvr16 | hduv

Standard BU product has stronger definition than IP

Product Comparison

Definitions

- UK IP – "Any Occupation"
 - UK Ombudsman ruling means that "Any" has become Own Suited
- Germany - EU / EM
 - The insured person, due to illness, bodily injury or decline of physical or mental forces, which have to be
 - proven by medical evidence** from a suitably qualified specialist, that
 - Person is expected to be **permanently incapable** to work
 - at least 2 hours a day** Erwerbsunfähigkeit (EU)
 - at least 3 hours a day** Erwerbsminderung (EM)
 - "Pflegedürftigkeit"

German Any Occupation products similar to Social Insurance

Product Comparison

Tax & Replacement Ratio

UK

- q **Tax**
 - q Individual Policies, Premiums paid after tax with benefits tax free
 - q Group Policies, Premiums paid by employer, Benefits taxed
- q **Replacement Ratio**
 - q Individual : 60% of Pre Tax Income less State benefit or 50% flat
 - q Group : 75% of Pre Tax Income

Germany

- q **Tax**
 - q System complex.
 - q Private Disability Insurance benefit counts in annual tax assessment
- q **Replacement Ratio**
 - q German Insurance policies do not take State Benefit into account
 - q To qualify as life insurance need to have defined sum assured,
 - q As level of state benefit unknown, can not integrate with state benefits
 - q Typical replacement Ratio less than 75% of Pre Tax salary but
 - q Benefit not adjustable at claim stage

Product Comparison

German Exclusions

- q **War and civil unrest**
 - q Excludes indirect or direct participation in War or Civil unrest where insured is on side of the troublemaker.
 - q Contract pays if insured unable to perform own occupation as result of non direct participation in warlike event outside Germany.
- q **Crime**
 - q Deliberate crime actions or misdeeds of insured person
 - q Still pays if result of negligible offences e.g. Road Traffic offence
- q **Deliberate self-injury or attempted suicide.**
- q **Unlawful acts**
 - q From insurance policyholder causing insured to be unable to work.
- q **Radiation as a result of nuclear energy.**
 - q Covers those exposed as result of profession (and hence rated) or exposed due to medical treatment prescribed by a doctor.
- q **Air travel other than that as a passenger**

Exclusions similar to UK except for war and radiation

Product Comparison

Rating Agencies

- q Deregulation post 1994
- q Strong Competition
- q Introduction of specialist product rating agencies
 - q Franke & Bornberg
 - q Rates BU Policies from FFF (hervorragend – excellent) to F-- (Sehr Schwach = Very weak)
 - q Ratings based on benefit definitions and policy conditions
 - q Focus on customer rather than insurer
- q Introduction of new products
 - q Comfort BU plans
 - q Hybrid products
 - q Rating by Occupation Groups

Strong growth in German product development

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Product Comparison

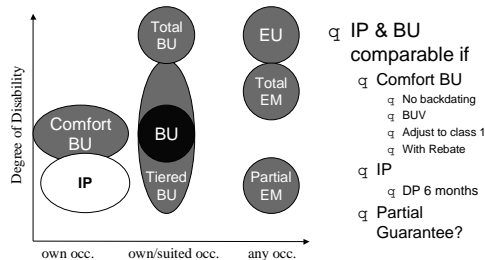
Comfort BU

- q Waiver of "Abstrakte Verweisung"
 - q Makes product closer to "Own Occupation"
 - q Waives insurers' right to indicate alternative occupation to which policyholder would be suited
 - q Benefit payment ceases if policy holder has actual job
- q Waiver of §41 VVG
 - q Waives insurers right to increase premium / reduce benefit in the event of non disclosure
- q Waiver of §172 VVG
 - q Full guarantee though can still reduce premium rebate
- q Shortening of Prognosis Timeframe
 - q Definition of permanence reduced from 3 years to 6 months
- q Backdating of Benefit
 - q Retroactive payment from the medical starting point of disability

Additional Loadings of up to 30% for weakening of conditions

Product Comparison

Product Summary



IP is similar to Comfort BU product

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Pricing Comparison

German Disability Tables

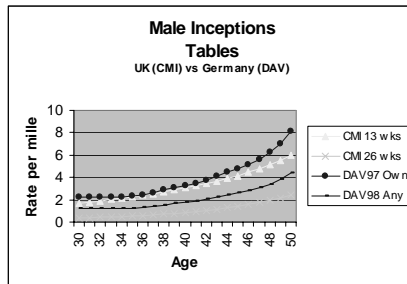
- q German Official Disability Tables come from DAV
- q Most recent tables based on market experience from Years 1987 to 1991
 - q Experience is for Classical BUZ products
 - q All Occupations
 - q All Smoker types
 - q Waiver + Income Protection
 - q Suggested Loading for BUW +35%
 - q Suggested Discount for Waiver only -30%
- q Separate Tables available for
 - q BU & EU Products
 - q 1st and 2nd Order
 - q Males & Females
 - q Inceptions
 - q Recoveries
 - q Deaths in Claim

Tables	BU	EU
Inceptions	DAV97I	DAV98E
Recoveries	DAV97RI	DAV98RE
Deaths in Claim	DAV97TI	DAV98TE

24 Standard German disability tables

Pricing Comparison

Inception Tables

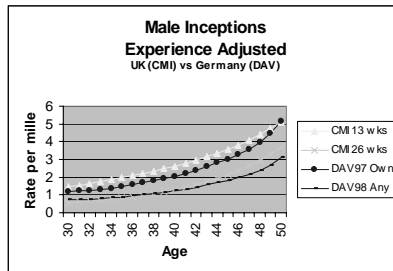


Source: CMI / DAV

- DAV97I 1st Order is approx. 110% of CMI 13 wks & 350% CMI 26 wks
- DAV98E 1st Order is approx. 190% of CMI 26 wks

Pricing Comparison

Inception Experience

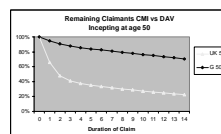
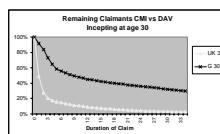


Source: CMI / DAV

- Graph compares CMI Class 1 1995-98 with DAV 2nd Order Tables
- DAV97I = 90% of CMI 13
- DAV98E rates close to CMI 26 Own Occ. Experience

Pricing Comparison

Termination Rates



Source: CMI / DAV / Own Calculations

IP Vs BU : Male Claim Annuities at 4%					
Age	20	30	40	50	60
IP	2.05	2.79	3.74	4.46	3.15
BU	7.18	9.80	11.00	9.28	4.24
BU / IP	350%	351%	294%	208%	135%

- Table compares CMI dp 26 wks with DAV 1st Order
- Rates of Recovery & Death from DAV Tables are much slower than those obtained from the underlying CMI Tables.
- At Key ages BU claims annuities are around 3 times IP annuities

Pricing Comparison

Termination Rates

- CMI dp 26 wks experience
 - Years 0-2 40% Years 3-4 45% Year 5+ 55%
- Expected German Experience = DAV 2nd Order
- Annuities reflecting UK Own Occupation Experience are similar to DAV 2nd Order
- Guaranteed rates in Germany include safety margins and hence use 1st Order rates

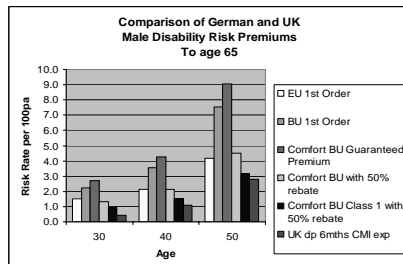
IP Vs BU : Male Claim Annuities at 4%					
Age	20	30	40	50	60
IP	7.22	8.06	8.47	7.62	3.89
BU 2nd Order	5.09	7.48	9.43	8.58	4.15
BU 2nd Order / IP	70%	93%	111%	113%	107%
BU 1st Order	7.18	9.80	11.00	9.28	4.24
BU 1st Order / IP	100%	122%	130%	122%	109%

Source : CMI / DAV / Own Calculations

Pricing Comparison

Risk Premium Rates

- For comparable products UK risk rates much lower
- Difference in Risk Premium narrows with age

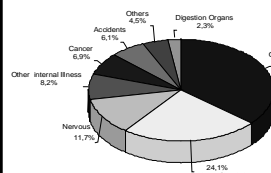


Source : Own Calculations

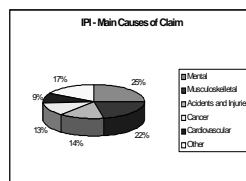
Pricing Comparison

Cause of Claim

- Causes of Claims in Germany & UK
- 47% of claims are due to Back / Mental
- Many more claims in Germany due to Heart Conditions



Source: German Industry data, Male Aged 40 years and above



Source: GE Frankona Re

Pricing Comparison

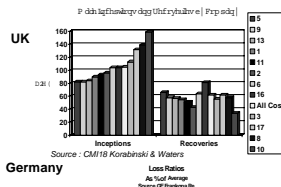
Company Experience

UK

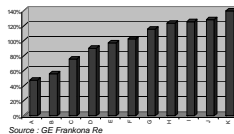
- CMIR 18 - Korabinski and Waters
 - Looked at variation by company
 - By fitting GLM for each of 18 companies
 - To Inceptions & terminations for 1987-94
 - By sex and deferred period
 - All Occupations combined
 - Following results
 - Only include results from companies with at least 50 inceptions and at least 25 terminations
- Germany
 - No Industry Source
 - GE Frankona Re Internal Data Experience
 - Claims Ratio as % of Average

Pricing Comparison

Company Experience



Germany



- UK & Germany both show large variation by company
- Best company 2-3 * worst
- Reasons
 - Strength of Claims Handling
 - Underwriting
 - Importance of Portfolio
 - Distribution Channel
 - Portfolio Mix
 - Type of Product

Summary

Disability SWOT Analysis

- Fastest Growing life insurance product in Germany
- High premium with Profit share reduces risk to insurer.
- Standard definitions (mainly)
- Needs based product
- Living benefit

SW
OT

- Weakening of State Benefits
- Product Development
- Decline of CI in UK
- Rider to Pension Funds in Germany
- Use of support services to improve claims management
- Medical advance leading to faster/ more recoveries

- Complicated - many policy conditions
- Reliance on claims management and U/W skills of direct insurer
- Potential for anti-selection
- Rate guarantees
- Economic Cycle / Level of Unemployment
- Disability Legislation
- Weakening of Policy conditions in Germany
 - Rapid medical advances leading to longer for disabled lives on claim.
 - Changes in Causes of Disability
 - Increase in Propensity to Claim
 - Emerging diseases (RSI etc.)