Modeling Polish Insurance Industry

Mariusz Plich
University of Lodz
Poland

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1. Definition of insurance industry

2. Performance of insurance industry in Poland – comparisons to other sectors (*static analysis*)

3. Problem of different "languages"

4. Performance of insurance industry in Poland – comparisons to other countries (*dynamic analysis*)

5. Examples of estimation of premiums equations

1. Definition

Insurance industry in NACE classification

<u>Section J</u> Financial intermediation

    <u>Division 65</u> Financial intermediation services, except insurance and pension funding services

    <u>Division 66</u> insurance and pension funding services, except compulsory social security services

        <u>Group 66.0</u>
            class 66.01 life insurance
            class 66.02 pension funding services (by general pension societies)
            class 66.03 non-life insurance

    <u>Division 67</u> Services auxiliary to financial intermediation

Insurance industry in io table

Pension funding services concentrates in consumption (PCE)

2. Performance of insurance industry – comparisons to other sectors (static analysis)

file 1

Inforum-type models can be used to forecast performance of insurance industry

3. Problem of different "languages"

Language of Inforum-type models: yearly data, output, employment, productivity, wages, operating surplus, etc. **by sectors**

Language of experts from insurance industry: quarterly or monthly data, premiums, claims, provisions, acquisition costs, administrative costs, etc. **by type of risk**
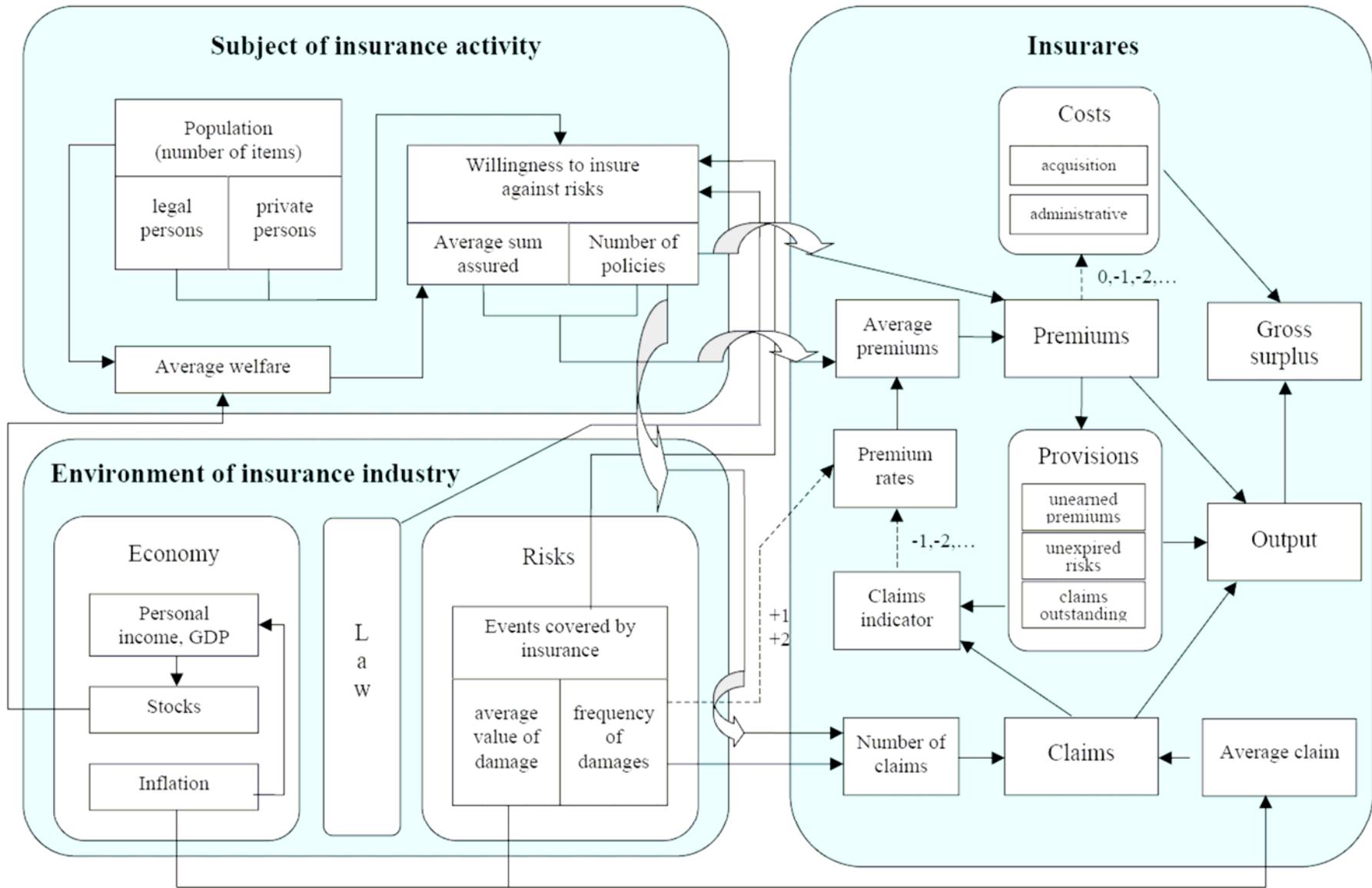
file 2 (risks, variables, ratios)

chart (next page)

Can Inforum model use insurance industry language?

output of insurance industry = premiums – claims

"bottom-up" or "top down" approach?

Subject of insurance activity

Population (number of items)
- legal persons
- private persons

Average welfare

Willingness to insure against risks
- Average sum assured
- Number of policies

Environment of insurance industry

Economy
- Personal income, GDP
- Stocks
- Inflation

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Risks
- Events covered by insurance
  - average value of damage
  - frequency of damages

Insurares

Costs
- acquisition
- administrative

0,-1,-2,...

Average premiums

Premiums

Gross surplus

Premium rates

-1,-2,...

Claims indicator

Provisions
- unearned premiums
- unexpired risks
- claims outstanding

Output

+1
+2

Number of claims

Claims

Average claim

4. Performance of insurance industry in Poland – comparisons to other countries (dynamic analysis)

Indicators

Density of Insurance Industry: direct gross premiums by the population (the average insurance spending per capita)

Penetration of Insurance Industry: ratio of direct gross premiums to GDP (the relative importance of the insurance industry in the domestic economy). A proxy for the stage of development of the insurance industry in a country relative to the global trends in the insurance business

Life Insurance Share: the ratio of gross life insurance premium to total gross premium (the relative importance of life insurance as compared to non-life insurance).

Premiums per Employee (the relative efficiency of a national insurance).

Retention Ratio: (the importance of reinsurance for domestic insurance companies).

Ratio of Reinsurance Accepted (the significance of reinsurance accepted in the national insurance market)

Foreign Companies' Market Share in the Domestic Market (the importance of foreign companies in the domestic insurance market)

file 3

Insurance industry in Poland is growing dynamically

Is it better to predict io coefficients in the row of "insurance industry" or build a model with industry specific variables?

5. Examples of estimation of premiums equations

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The end