

Affordability of National Flood Insurance Program Premiums— Report 2

Committee on the Affordability of National Flood Insurance Program Premiums

Water Science and Technology Board
Board on Mathematical Sciences and Their Applications
Committee on National Statistics

Webinar hosted by:

Leonard Shabman (committee chair), Resources for the Future
Allen Schirm (committee member), Mathematica Policy Research
Carolyn Kousky (committee member), Resources for the Future

January 20 2016
1.00 pm EST

The Origins of this Congressionally Mandated Study

Biggert-Waters 2012

- Section 100236. Study of participation and affordability for certain policyholders
- (a) FEMA study
- (b) NAS economic analysis

Homeowners Flood Insurance Affordability Act 2014

- Section 16. Affordability study and report
- (b) Timing
- (c) Funding



Source: FEMA News Photo

Two Report Series

Report 1

AFFORDABILITY OF
NATIONAL FLOOD INSURANCE
PROGRAM PREMIUMS

2. History of the NFIP
3. NFIP pricing and practices
4. Demand for flood insurance
6. Considerations for design of an affordability assistance program
7. Policy options for targeted assistance or for making premiums less expensive for all policyholders

REPORT 1

NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES

Report 2

AFFORDABILITY OF
NATIONAL FLOOD INSURANCE
PROGRAM PREMIUMS

2. Policy evaluation
3. Data for analysis of policy options
4. Analytical next steps and further thoughts

REPORT 2

The National Academies of
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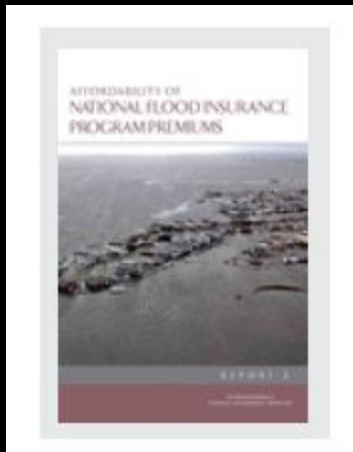
CONSTANCE F. CITRO, Senior Board Director, Committee on National Statistics

SCOTT T. WEIDMAN, Director, Board on Mathematical Sciences and Their Applications

ANITA A. HALL, Senior Program Associate, Water Science and Technology Board

Report 2 Task Statement

Report 2 will propose alternative approaches for a national evaluation of affordability program policy options such as those described in report 1.



Assessment of alternative approaches led to the finding about microsimulation

- Chapter 2

Data needs, availability, and quality for microsimulation

- Mostly Chapter 3

A proof-of-concept report with implications for future analysis

- Mostly Chapters 2 and 3
- North Carolina proof-of-concept is independently published.

Study Schedule

Report 1

Report 2

2014

- 4 Committee mtgs.

May
2015

- Committee mtg.

June
2015

- Committee mtg.

Sept.
2015

- Committee mtg.

Oct.
2015

- Report peer-reviewed

Dec.
2015

- Briefings and public release

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Report 2 Outline

1. INTRODUCTION

2. AN APPROACH TO POLICY EVALUATION FOR THE NFIP

- Elements of planning process
- Model development for evaluating the NFIP
- Microsimulation

3. DATA FOR ANALYSIS OF NFIP POLICY OPTIONS

- NFIP policy database
- FIRMS
- Other data sources for filling data gaps

4. ANALYTICAL NEXT STEPS AND FURTHER FINDINGS FOR AFFORDABILITY POLICY OPTIONS

- Near-term analysis
- Further findings after report 1

Comparing Cost Burden Measures

Annual flood insurance premium is unaffordable if...

Exceeds a % of coverage

Annual income is less than a specified amount

Housing expenses, including premium, exceed a specified % of income

Exceeds a % of assessed property value

Further Findings for Affordability Policy Options (Chapter 4)

Defining Cost Burden

Premium as a percent of coverage does not reflect “ability to pay.”

Cost Burden—Can be informed by technical analysis of alternative approaches, but the final selection is a policy judgement.

Further Findings (Chapter 4)

NFIP Pricing

- **Grandfathering** will perpetuate cross-subsidies.
- **NFIP Risk-Based Premiums:** Implementing BW 2012 will not result in NFIP risk-based premiums for properties outside SFHA.

The Insurance Purchase Decision

- **Promoting Takeup:** Aid may need to be extended to property owners who are not required to purchase flood insurance.
- **Information Dissemination:** Informing policyholders of the NFIP risk-based rate may help address the direction of Congress that policyholders be provided with accurate information on the flood risks they face.

An Approach to Policy Evaluation for the NFIP (Chapter 2)

Content

Elements of a planning process

- Step 1
- Step 2
- Steps 3, 4, 5, and 6

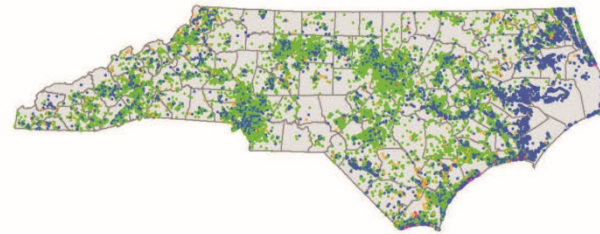
Model development for evaluating affordability policy options

- Policy modeling: What if?
- What is microsimulation
- Moving forward

Microsimulation modelling for the NFIP

- Identify policy relevant questions
- Specify baseline conditions
- Formulate alternative policy options
- Conduct simulations
- Compare effects of alternative options

Proof-of-Concept Pilot Analysis



National Flood Insurance Program Premiums in North Carolina

Case Study on Data Availability, Modeling and Analysis
Supporting Premium and Affordability Discussions

Prepared by:
North Carolina Floodplain Mapping Program
North Carolina Emergency Management



November 2015

Report available at:
<http://dels.nas.edu/resources/static-assets/wstb/miscellaneous/wstb-cp.pdf>

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Microsimulation (Chapter 2)

What's in a name?

- “Micro” – Micro data on decision making units
- “Simulation” – Policy changes are simulated, not implemented

Two Essential Elements of a Microsimulation Model (Chapter 2)

1. Micro database
2. Computer program
 - Baseline rules
 - Alternative rules
 - Aggregate and subgroup effects

Advantages of Microsimulation (Chapter 2)

- **Modeling is at the right level**
- **Provides framework for conceptual thinking and development of analytical capabilities**
- **Analytically flexible**
- **Developmentally flexible—modular, incremental**

Challenges of Microsimulation

(Chapter 2)

- **Complexity**
- **Time and resources to develop substantial capabilities**

Biggest Challenge for NFIP Policy Evaluation

(Chapter 2)

Data gaps

Data for Analyses of NFIP Program Policy Options (Chapter 3)

The NFIP Policy Holders

- Location of property
- Coverage
- Current premium
- First floor elevation
- Socioeconomic characteristics
- Response to price
- Grandfathered?

Property without Insurance

- Location of property
- First floor elevation
- Socioeconomic characteristics
- Potential premium
- Response to price

Flood Insurance Risk

- Probability of flooding
- Base flood elevation
- Stage damage curves

Filling data gaps

- Census/American Community Survey
- Federal Agency Admin. Records
- Tax assessment records
- LiDAR
- Proxy variables
- Sample survey

Analytical Next Steps for Affordability Policy Options (Chapter 4)

Near-Term Analyses of Policy Options

1. Some questions can be answered in a qualitative way.
2. Some alternatives might be initially removed.
3. After initial screening, some alternatives will remain candidates.
4. Some analyses can be completed with available data.
5. Additional analyses can be completed with limited investments in obtaining new data.

Bottom Line

- FEMA's capacity to evaluate policy options, including but not limited to affordability, is currently limited.
- But, analytical capacity can be advanced substantially over time by embracing a microsimulation modeling approach.

Thank you

Question & Answer Session
