

9. (2.25 points)

Suppose the federal government wants to offer insurance to reduce banks' risk on loans to prospective homeowners to mitigate increased default risk in a recession.

a. (1.25 points)

Design a program to fund this insurance and briefly explain how it would meet the following goals of government participation in insurance:

- Convenience
- Greater efficiency
- Social purposes

b. (1 point)

Explain whether or not this new program can meet its goals while satisfying the following ratemaking principles:

- A rate provides for all costs associated with the transfer of risk.
- A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer.

## SAMPLE ANSWERS AND EXAMINER'S REPORT

<b>QUESTION 9</b>	
<b>TOTAL POINT VALUE: 2.25</b>	<b>LEARNING OBJECTIVE: B1/B2/B3</b>
<b>SAMPLE/ACCEPTED ANSWERS</b>	
<b>Part a: 1.25 points</b>	
<p>Design of Program - Funding Sources:</p> <ul style="list-style-type: none"><li>• Actuarially sound insurance premium paid by buyer/taxes</li><li>• Premium subsidized by government</li><li>• Ability to borrow from treasury if costs exceed premiums</li><li>• Reinsure private mortgage insurers that offer coverage</li><li>• Exclusive Insurer arrangement</li></ul> <p>Government Goals</p> <ul style="list-style-type: none"><li>• Convenience<ul style="list-style-type: none"><li>• Buyer does not have to shop around for insurance</li><li>• Ease of being covered by insurance program<ul style="list-style-type: none"><li>i.e., Payroll taxes, Automatic Enrollment, % of Outstanding Enrollment, Included in Mortgage Payment</li></ul></li></ul></li><li>• Greater efficiency<ul style="list-style-type: none"><li>• Government insurer costs are lower due to the unnecessary nature of marketing costs, commissions, and lower administrator costs, as well as the lack of taxes</li><li>• Private mortgage insurers have incentives to work more efficiently</li><li>• An experienced insurance operation (i.e., claims organization already established)</li></ul></li><li>• Social purposes<ul style="list-style-type: none"><li>• Encourages banks to offer more loans to lower qualified applicants</li><li>• Works to enable housing sales</li><li>• Encourages buyers that may not be qualified</li><li>• Protects the overall economy by protecting against the systematic risk of all banks defaulting at once.</li></ul></li></ul>	
<b>Part b: 1 point</b>	
<ul style="list-style-type: none"><li>• Principle 2: A rate provides for all costs associated with the transfer of risk.<ul style="list-style-type: none"><li>- Doesn't include all costs because governments don't need to account for cost of capital</li><li>- It does include all costs due to governments not needing to account for cost of capital, because the government can borrow against general revenue</li><li>- Private insurance structures: All Costs - Cost of loss, expenses, and profit load were included in price</li><li>- To fulfill the government goals of convenience and efficiency, the rate does not account for all costs associated with transfer of risk</li></ul></li><li>• Principle 4: A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual</li></ul>	

## SAMPLE ANSWERS AND EXAMINER'S REPORT

risk transfer.

- Uniform Premium structure is not an actuarially sound estimate for individual risk transfer due to better risks subsidizing worse risks
- It would violate the principle because cross-subsidization of risk given the % of loan fee wouldn't satisfy the individual risk transfer requirement
- Subsidized risks do account for all future costs
- The rate is unfairly discriminatory because it is based on the insured's credit score, which is a discriminatory rating factor according to regulators
- To fulfill the government goal of social purpose, the rate would be inadequate

### EXAMINER'S REPORT

The question being asked tests a higher level of Bloom's knowledge on Government Regulation & Insurance and the application of key actuarial principles and concepts.

#### Part a

The candidate was expected to provide a program design that detailed the funding of that program. They also then needed to provide a brief explanation as to whether their program met the 3 government goals and why it met or didn't meet those goals. Many candidates gave a brief explanation of their program, but lacked either providing program details and/or the funding details that were asked to gain full credit. Candidates generally did well, but where they tended to lose credit was not fully explaining the funding sources or relating one of the goals of government insurance back to their program design. Most candidates were able to correctly identify how their program either satisfied or didn't satisfy the goals of government participation in insurance for at least 2 of the 3 goals.

#### Part b

The candidate was first expected to identify whether their program met the ratemaking principles, on their own merits given their selected program design and funding. Then, they were expected to fully explain why their program did or didn't meet the ratemaking principles. Many candidates were able answer if their program did or didn't meet the ratemaking principles, but either incorrectly supported their answer or struggled to fully explain why their program did or didn't meet those principles.

For example for Principle 2, which asked about a rate providing for all costs associated with the transfer of risk, many candidates said it would provide for all costs but failed to explain further or their explanation was simply rewording the question and failed to provide any new information.

- "Yes, the rate would provide for all costs associated with the transfer of risk"
- "Yes, since this rate provides for all costs associated with the transfer of risk, this principle would be met."

The issues were similar for Principle 4, which asked about the rate being reasonable, not excessive, inadequate or unfairly discriminatory. Most common mistake was supporting the answer by

## SAMPLE ANSWERS AND EXAMINER'S REPORT

restating the question. Another frequent mistake was contradicting their answer in their explanation such as saying the program did meet the principle, but explaining it with an explanation that would violate the principle.

- "Yes the rate would be reasonable, not excessive, inadequate or unfairly discriminatory since the government would subsidize the rate."