6. (2 points)

The current workers compensation indemnity benefit structure in a state is as follows:

- The compensation rate is 80% of the workers pre-injury wage.
- The state average weekly wage (SAWW) is currently $1,500.
- The minimum indemnity benefit is 50% of the SAWW.
- The maximum indemnity benefit is 125% of the SAWW.

The following changes have been proposed to the workers compensation indemnity benefit structure:

- The proposed minimum indemnity benefit is 75% of the SAWW.
- The proposed maximum indemnity benefit is 100% of the SAWW.

The distribution of injured workers for Company A is shown below:

| Ratio to SAWW | # Workers | Total Weekly Wages |
|---|---|---|
| <50% | 150 | $108,750 |
| 50%-75% | 100 | $110,000 |
| 75%-100% | 95 | $137,750 |
| 100%-125% | 50 | $87,500 |
| >125% | 45 | $216,000 |
| Total | 440 | $660,000 |

a. (1.5 points)

Calculate the impact to Company A of the state's proposed workers compensation indemnity benefit change.

b. (0.5 point)

Briefly describe two potential indirect effects of the benefit change.

CONTINUED ON NEXT PAGE

**QUESTION 6**

**TOTAL POINT VALUE: 2** | **LEARNING OBJECTIVE(S): A3**

**NOTE FROM THE SYLLABUS AND EXAMINATION COMMITTEE**

It was not the intention of this question to have the cutoff for the minimum/maximum to land in the middle of the given wage bands. Because of this ambiguity, reasonable assumptions, including assuming all workers in a band earn the average or a uniform distribution of workers across the band were accepted.

**SAMPLE ANSWERS**

**Part a:** 1.5 points

*Sample 1*

Min before change = 0.5(1500) = 750
Max before change = 1.25(1500) = 1875
Min after change = 0.75(1500) = 1125
Max after change = 1500

| | [A] | [B] | [C] | [D] |
|---|---|---|---|---|
| Ratio | #workers | Average weekly wage per worker | Pre-Change Benefit | Post-Change Benefit |
| <50% | 150 | 725 | 750 | 1125 |
| 50-75% | 100 | 1100 | 880 | 1125 |
| 75-100% | 95 | 1450 | 1160 | 1160 |
| 100-125% | 50 | 1750 | 1400 | 1400 |
| >125% | 45 | 4800 | 1875 | 1500 |
| Total | 440 | 1500 | | |

B = (Total Weekly Wages) / A
C = min(max(0.8 x B, 750), 1875)
D = min(max(0.8 x B, 1125), 1500)

Pre-change total benefits = sumproduct(A,C)
= (750 x 150) + (880 x 100) + (1160 x 95) + (1400 x 50) + (1875 x 45)
= $465,075
Post-Change total benefits = $528,950
Direct impact of benefit changes = (528,950/465,075) – 1 = **+13.73%**

*Sample 2*

| Ratio to SAWW | # Workers | Curr Ben | Proposed |
|---|---|---|---|
| <0.5 | 150 | 750(150) = 112500 | 1125(150) |
| 0.50-0.75 | 100 | 81150 = 81150 | 1125(100) |
| 0.75-1.0 | 95 | 0.8(137,750) = 110200 | 108537.5 |
| 1.0-1.25 | 50 | 0.8(87500) = 70,000 | 0.8(87500) |
| >1.25 | 45 | 1875(45) = 84375 | 45(1500) |
| Total | 440 | 458,575 | 527,287.5 |

SAWW = Total Wages/# Workers = 600,000/440 = 1500

Current comp = 0.8 x SAWW
Min = 0.5 x SAWW (1500 x 0.5 = 750) received by 0.5/0.8 -> ≤ 0.625
Max = 1.25 x SAWW (1.25 x 1500 = 1875) rec'd by 1.25/0.8 -> ≥ 1.5625

Since don't have ratio to SAWW broken at btwn 50-62.5 and 62.5-75, will allocate workers evenly into two buckets:
50-75%: 50 get min, 50 get 80% weekly wages
50(750) + 0.5(0.8)(110,000) = 81,500

Proposed comp =0.8 x SAWW
Min = 0.75(1500) = 1125 rec'd by 0.75/0.8 -> ≤ 0.9375
Max = 1.00(1500) = 1500 rec'd by 1.25/0.8 -> ≥ 1.25 x SAWW
Since don't have broken out will assume even split in ratio
Will allocate (95)(0.5)(1125) + (0.5)(0.8)(137750) = 108537.5

Impact to Company A = prop/curr = 527287.5/458575 = 1.149 or 14.98%

**Part b:** 0.5 point

*Sample 1*

- higher wage workers will avoid WC time off if possible
- more claims for lower benefit beneficiaries

*Sample 2*

- because of the raised minimum I would expect more low wage workers to submit claims and duration of healing to increase (less incentive to come back)
- because of the lower max benefit I would expect less high wage workers to submit claims and if they do, to come back to work sooner

**EXAMINER'S REPORT**

Candidates were expected to demonstrate knowledge of the impact on losses of law changes. Part a. focused on direct impacts on losses, and part b. on indirect impacts

**Part a**

Candidates were expected to calculate minimum and maximum benefits, determine benefit wages for each band, and then calculate total benefits by multiplying the benefit wage by the number of workers in each band and summing. This needed to be done for current and proposed benefit structures, and then total proposed and current benefits can be compared to determine a percent change.

Common errors included:

- applying min/max benefits incorrectly
- not applying the 0.8 factor to go from wage to benefit wage
- determining the benefit change as the difference between current and proposed benefits, rather than a percent change.

**Part b**

Candidates were expected to list two indirect effects of the benefit changes from part a.

A common mistake was mentioning the indirect impact of a min or max benefit change without also saying among which workers we would expect to see such an effect.