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# **Margin Protection Expansion and Changes**

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## Margin Protection Overview

Summer, 2018

# Topics

- Margin Protection
  - Overview
  - Margin Protection Fundamentals
    - The Margin Concept
    - A simple example: MP
    - A simple example: MP - HPO
  - How does MP stack up?

# Background

- The Original Concept paper for Margin Protection was provided to RMA staff in 2007.
- The 2008 Farm bill included the “Concept” 508(h) process.
- Farm Risk and Watts & Associates submitted concepts under these provisions in 2009.
- The Agricultural Act of 2014 amended the Federal Crop Insurance Act to authorize MP.
- MP was offered for the first time in 2016 in select areas, only Iowa for Corn and Soybeans.
- For the 2018 Crop Year, FCIC approved a major expansion of MP throughout the Midwest.

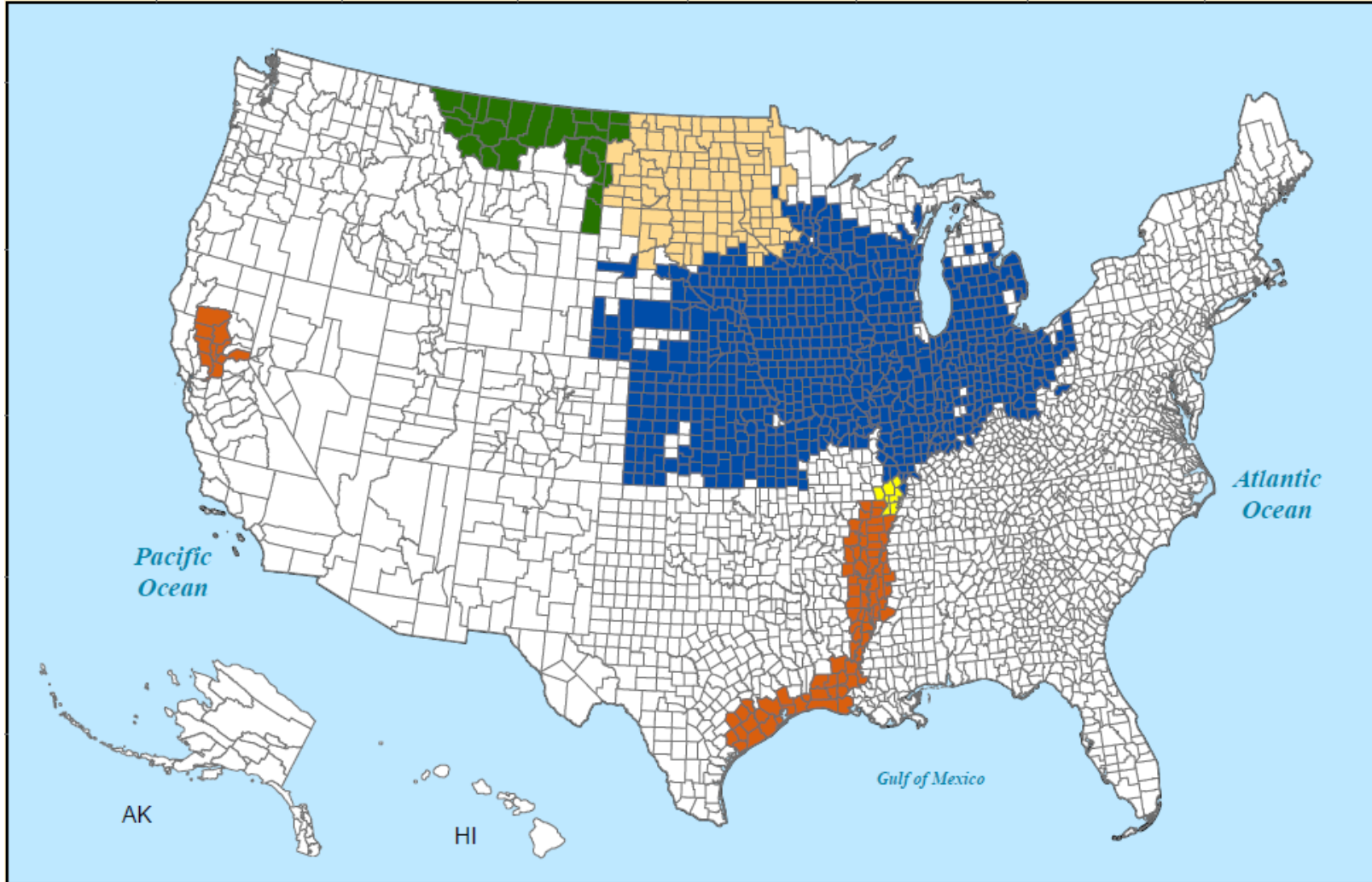
# What is Margin Protection?

- MP provides growers with an insurance product that protects their expected operating margin, i.e., the difference between expected revenue and specific expected costs.
- MP takes into consideration changes in crop prices, reductions of yields, **and changes in the prices of inputs used to grow the crop.**

# Why Margin Protection?

- 1<sup>st</sup> Generation of Crop Insurance – Yield
  - GYC, APH, and YP
  - Insures against: reduction in yield
- 2<sup>nd</sup> Generation of Crop Insurance – Revenue
  - RA, CRC, IP, GRIP, RP, and ARP
  - Insures against: reduction in yield or price
  - Revenue = Price x Yield
- 3<sup>rd</sup> Generation of Crop Insurance – Margin
  - Margin Protection
  - Insures against: reduction in margin
  - Margin = (Price x Yield) - Cost

# MP Expansion



- Corn, Rice, and Soybean Margin Protection Available
- Corn, Soybean, and Wheat Margin Protection Available
- Corn and Soybean Margin Protection Available
- Rice Margin Protection Available
- Wheat Margin Protection Available
- No Margin Protection Available

**Margin Protection Plan**  
**Corn, Rice, Soybeans, and Wheat**  
**2018**



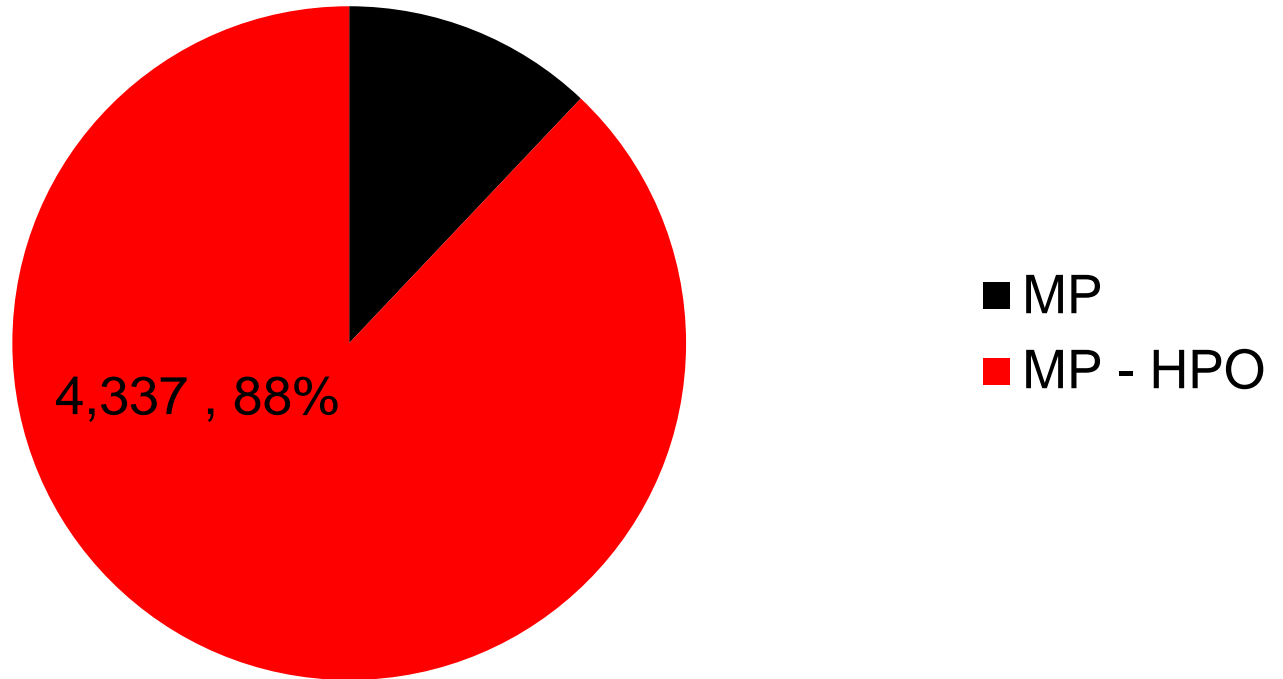
Coordinate System: Albers  
 Central Meridian: 96°0'0"W  
 1st Std Parallel: 20°0'0"N  
 2nd Std Parallel: 60°0'0"N  
 Latitude of Origin: 40°0'0"N  
 Metadata:  
 County Files - US Census Tiger  
 Files 2016  
 Margin Protection Availability  
 USDA - RMA - June 2017

**STATEMENT**  
 The Map represents  
 the availability of Margin  
 Protection offerings from  
 the Risk Management Agency



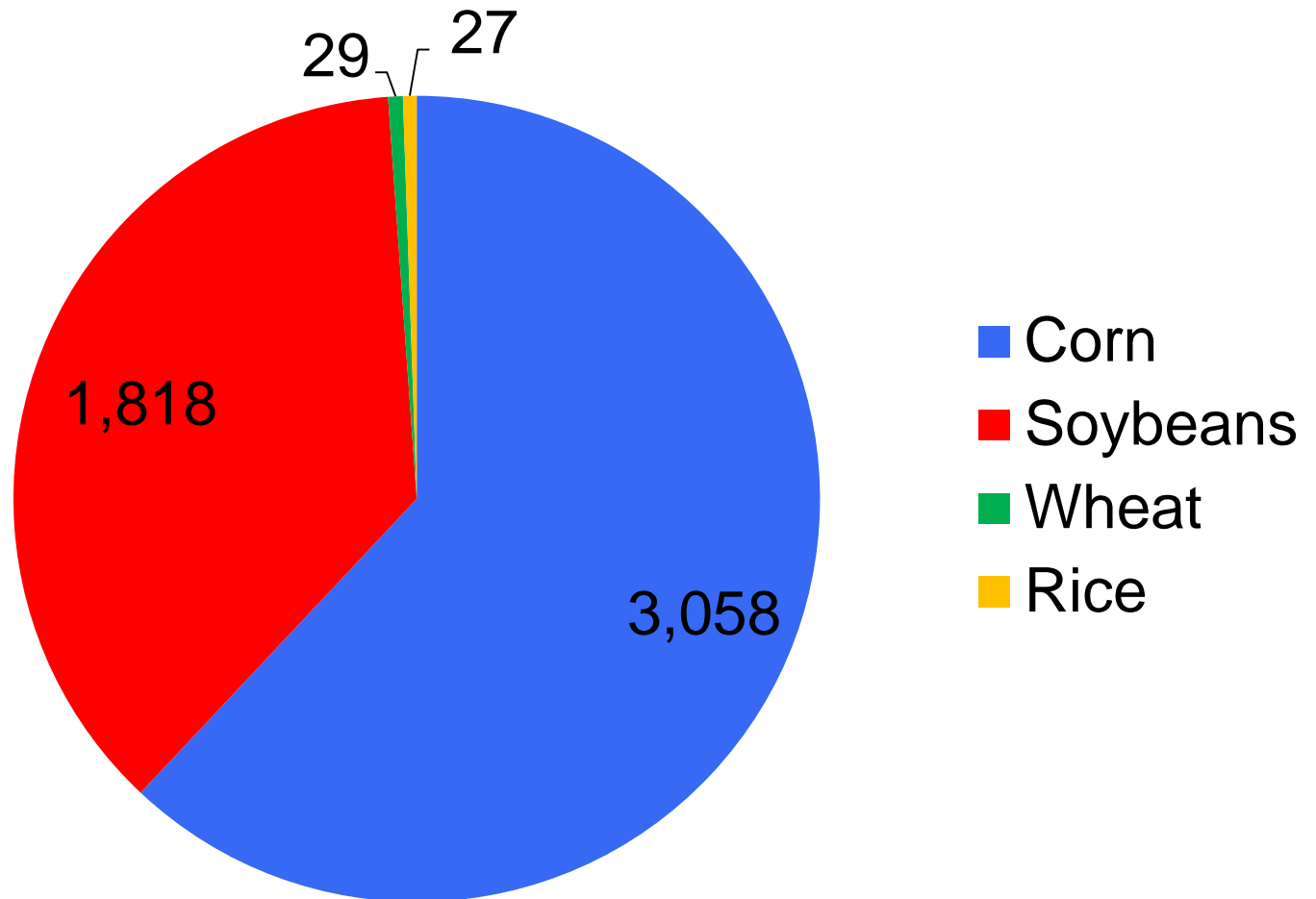
# Margin Protection Sales

## Margin Protection Sales by Plan - 2018



# Margin Protection Sales

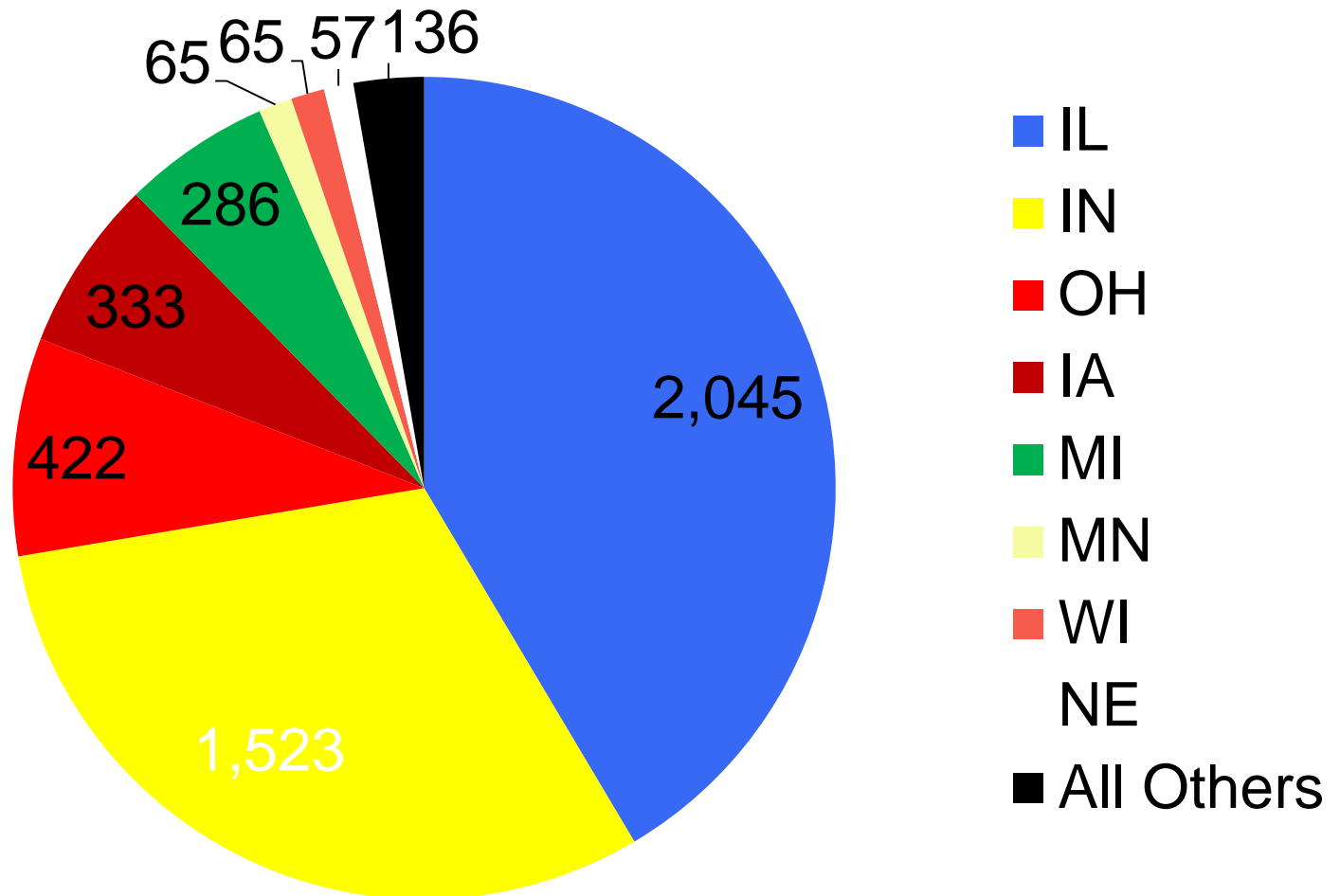
## Margin Protection Sales by Crop - 2018





# Margin Protection Sales

## Margin Protection Sales by State - 2018



# Margin Protection Basics

- Margin Protection has a September 30 SCD
  - Price discovery for Projected Prices is August 16 to September 15.
  - MP and RP use the same harvest prices.
- Margin Protection is Area-Based
  - The same expected county yields used for ARP are used for MP
  - MP offers coverage levels from 95% to 70% and protection factors from 0.8 to 1.2
- Margin Protection is Unique
  - Growers can choose to also buy (RP) in the spring. Growers who do so get a premium credit on the MP premium and receive the greater of the MP or RP indemnity in the fall.

# The Margin Concept

- Crop insurance is designed to transfer risk from farmers to insurance companies. Crop insurance is designed to assure that at the end of the year farmers' potential losses are limited.
  - Yield Risk (bu/ac)
  - Price Risk (\$/bu)
  - Revenue Risk (bu/ac x \$/bu = \$/ac)
  - Cost risk (Cost expended \$/ac)
- The money that a farmer has left after harvesting bushels, selling them, and paying operating costs is the margin. This is the money the farmer has to cover land costs, pay for management labor, and support their family.
- Margin, not bushels, prices, or costs, is the number a farmer has been looking to insure.

# Understanding Expected Costs

- Margin Protection makes no effort to measure any individual grower's actual costs incurred.
- Instead, assumptions are made based on the local agronomic conditions to establish the quantity of key inputs. These are based on the relationship between expected county yield and the volume of an input needed to grow a bushel
- Costs included:
  - Diesel
  - Nitrogen (Urea)
  - Phosphorus (DAP)
  - Interest
  - Potassium (Potash)
  - Seed and other costs

# Margin Protection Concepts

- Prior to SCD, RMA releases

- County Expected Yield (ECY)
- Projected Price
- Expected Cost

- Expected Margin is calculated

Expected Margin = (ECY x Projected Price) – Expected Cost

- After Harvest, RMA releases

- Final County Yield (FY)
- Harvest Price
- Harvest Cost

- Harvest Margin is calculated

Harvest Margin = (final Yld x Harvest Price) – Harvest Cost

# Simple Example: MP

## Calculating an MP Trigger

- Expected Margin  
(Expected Yield x Projected Price) – Expected Cost  
 $(180 \text{ bu/ac} \times \$4.00) - \$260/\text{ac} = \$460/\text{ac}$
- Margin Deductible  
Expected Revenue x (1-Coverage Level)  
 $(180 \text{ bu/ac} \times \$4.00 \times (1-95\%)) = \$36/\text{ac}$
- Trigger Margin  
Expected Margin – Margin Deductible  
 $\$460/\text{ac} - \$36/\text{ac} = \$424/\text{ac}$

# Simple Example: MP

## Calculating an MP Indemnity

- Harvest Margin  
(Harvest Yield x Harvest Price) – Harvest Cost  
 $(160 \text{ bu/ac} \times \$3.80) - \$260/\text{ac} = \$348/\text{ac}$
- Margin Loss  
Trigger Margin – Harvest Margin  
 $\$424 - \$348 = \$76/\text{ac}$
- Margin Indemnity  
Margin Loss x Protection Factor  
 $\$76/\text{ac} \times 1.20 = \$91.20/\text{ac}$

# Simple Example: MP-HPO

## Calculating an MP Trigger

- Expected Margin  
(Expected Yield x max{Proj, Harv}) – Expected Cost  
(180 bu/ac x max{\$4.00, \$4.10}) - \$260/ac = \$478/ac
- Margin Deductible  
Expected Revenue x (1-Coverage Level)  
(180 bu/ac x \$4.10 x (1-95%) = \$36.90/ac
- Trigger Margin  
Expected Margin – Margin Deductible  
\$478/ac - \$36.9/ac = \$441.10/ac



# Simple Example: MP-HPO

## Calculating an MP Indemnity

- Harvest Margin  
(Harvest Yield x Harvest Price) – Harvest Cost  
 $(160 \text{ bu/ac} \times \$4.10) - \$260/\text{ac} = \$396/\text{ac}$
- Margin Loss  
Trigger Margin – Harvest Margin  
 $\$441.10 - \$396 = \$45.10/\text{ac}$
- Margin Indemnity  
Margin Loss x Protection Factor  
 $\$45.1/\text{ac} \times 1.20 = \$54.12/\text{ac}$

# MP Liability

## Calculating an MP Indemnity

- Liability
- Expected County Yield x Projected price x Coverage level x share x protection factor
  
- MP-HPO Liability
- Expected County Yield x max(Projected price, Harvest Price) x Coverage level x share x protection factor

# How does MP stack up?

|                   | RP       | ARP      | MP-HPO   |
|-------------------|----------|----------|----------|
| Expected Yield    | 180      | 180      | 180      |
| Projected Price   | \$4.00   | \$4.00   | \$4.00   |
| Expected Revenue  | \$720.00 | \$720.00 | \$720.00 |
| Coverage Level    | 85%      | 90%      | 95%      |
| Protection Factor |          | 1.20     | 1.20     |
| Expected Cost     |          |          | \$400    |
| Deductible        | \$108.00 | \$72.00  | \$36.00  |
| Trigger           | \$612.00 | \$648.00 | \$284.00 |

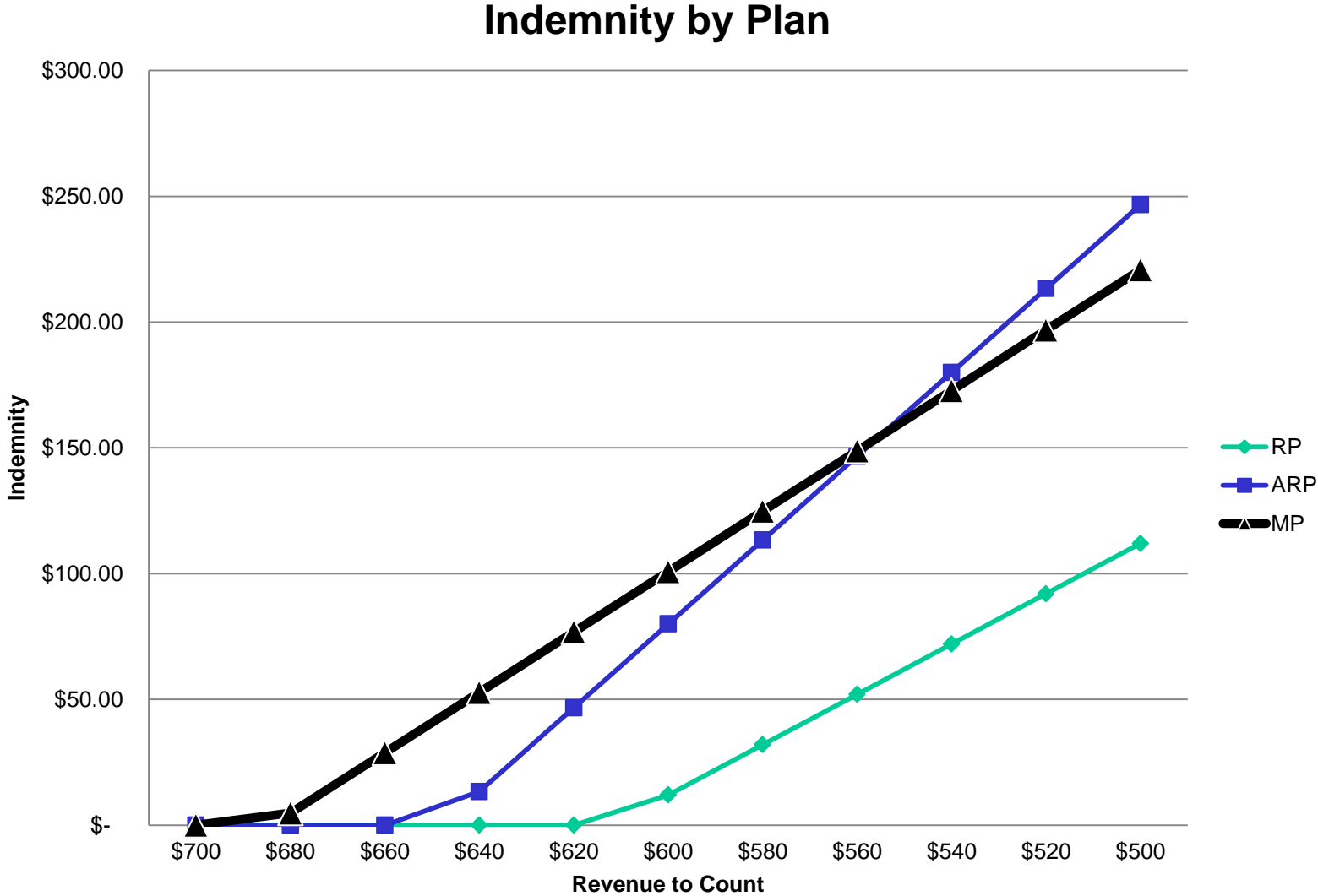
# How does MP stack up?

|                    | RP       | ARP      | MP-HPO   |
|--------------------|----------|----------|----------|
| Premium Rate       | 7.49%    | 8.30%    | N/A      |
| Premium            | \$ 45.84 | \$64.54  | \$ 69.16 |
| Subsidy            | \$ 24.29 | \$ 28.40 | \$ 30.43 |
| Producer Premium   | \$ 21.54 | \$ 36.14 | \$ 38.73 |
|                    |          |          |          |
| Net Deductible     | \$129.54 | \$108.14 | \$74.73  |
| A&O Rate           | 18.5%    | 12.0%    | 20.1%    |
| A&O Reimbursement* | \$ 8.48  | \$7.74   | \$ 13.90 |

# How does MP stack up?

|                | RP       | ARP      | MP-HPO   |
|----------------|----------|----------|----------|
| Final Yield    | 160      | 160      | 160      |
| Harvest Price  | \$3.80   | \$3.80   | \$3.80   |
| Rev to Count   | \$608.00 | \$608.00 | \$608.00 |
| Harvest Cost   |          |          | \$400    |
| Harvest Margin |          |          | \$208.00 |
| Indemnity      | \$4.00   | \$ 66.67 | \$91.20  |

# How does MP stack up?



# Questions?

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