Drug Price Adjustments under Taiwan’s Health Insurance System

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Dec.1, 2017
Outline

- Regulations regarding drug price adjustment
- Price and Volume Survey
- Principles of drug price adjustment
- Drug Expenditure Target (DET)
- Examples
Regulations Regarding Drug Price Adjustment

- Article 46, National Health Insurance Act
  - The Insurer should adjust drug prices based on prevailing market conditions; prices for drugs with patents, which have expired for a year, should start being lowered; gradual adjustment to reasonable prices should be done within five years based on prevailing market conditions.

  - The Competent Authority shall determine the operating procedure for the adjustment in the preceding paragraph as well as the relevant rules.

- Drug Price Adjustment Scheme
Outline

- Regulations regarding drug price adjustment
- **Price and Volume Survey**
- Principles of drug price adjustment
- Drug Expenditure Target (DET)
- Examples
Price and Volume Survey (1)

- **Pharmaceutical Companies:**
  - All the pharmaceutical companies selling drugs directly to the contracted medical care institutions shall declare to the Insurer the sales data of the previous season within 20 days on the first month following the end of every season.

- **Medical Care Institutions:**
  - **General purchase data survey:** The contracted medical care institutions shall declare to the Insurer the purchase data of the previous season within 20 days on the first month following the end of every season.
  - **Special purchase data survey:** The contracted medical care institutions shall declare items as well as follow the declaration time course as announced by the Insurer.
Ad hoc Survey:

When being reported as indicated by clear evidence and when the following criteria are met:

- Sales price is 50% lower than reimbursement price.
- More than 3 items in the same group.
- The total declared expenditure exceeds 100 millions.
- Not basic price.

Item of the same group shall be surveyed and dealt.
Survey on Sales Data

- Declare via internet:
  - Pharmaceutical companies shall upload transaction data via internet.

- Declaration system:
  - Website: [https://med.nhi.gov.tw](https://med.nhi.gov.tw)
False Declaration: when any of the following condition is met

- Did not declare gifted quantities or did not deduct discounts from the declared trading value.
- Only declare transaction data from part of the contracted medical care institutions.
- Other actions that may influence the accuracy or integrity of surveys.

Measures to deal with undeclared or false declaration

- Delisting
- Price reduction
- All items from the same drug license are dealt with together.
Undeclared or False Declaration (2)

- Principles regarding submission of new items listing and price adjustment
  - Drugs from the same license **can not submit** for listing until one year afterwards.
  - Basic price can not be applied until one year afterwards.
Outline

- Regulations regarding drug price adjustment
- Price and Volume Survey
- Principles of drug price adjustment
- Drug Expenditure Target (DET)
- Examples
Principles of Drug Price Adjustment

\[ \Delta P = \text{Reimbursement price} - \text{Trading price} \]

\[ \Delta M = \text{Trading price} - \text{Cost} \]

Declared by Medical providers

Price & volume survey

Reimbursement price

(profit for medical providers)

Trading price

(margin for pharmaceutical companies)

Cost (variable)
Principles of Drug Price Adjustment

Old price (before adjustment)

New price

WAP

R-zone

Adjustment
Principles of Drug Price Adjustment

- Adjust the reimbursement prices of drugs by referring to their actual transaction prices, so the reimbursement prices will get closer to the market trading prices.
- Timely reflect the market trading prices for off-patent drugs.
Framework of Drug Price Adjustment

Drugs covered by NHI

- Special items & orphan drugs
- Class 1 (Patented)
  - Priced by brand category
- Class 2 (Patent expired <5yrs)
  - Priced by brand category
  - listed \( \leq 15 \text{yrs} \) (3A)
  - listed > 15yrs (3B)
- Class 3 (Not Class 1 or Class 2)
  - Priced by brand category
  - Priced by ingredient(s)
Framework of Drug Price Adjustment

Patent expiration date

2000 2006 2011 2016 2022

Item A

Class 1  Class 2  Class 3A  Class 3B

Item B

Class 1  Class 2  Class 3B

※Listed > 15yrs (Class 3 B): Determined by when the first item with the same ingredient(s) and dosage form is listed.
# Time course of Drug Price Adjustment

<table>
<thead>
<tr>
<th>Class</th>
<th>Range</th>
<th>Time course</th>
</tr>
</thead>
</table>
| **Class 1** | 1. Patented items  
             2. Other items from the same group | 1. Once every 2 yrs  
                                    2. Under DET program: When the expenditure target is exceeded |
| **Class 2** | 1. Items with patent expired <5yrs  
             2. Other items from the same group | Once a year (by items) |
| **Class 3** | Items other than Class 1 or 2 | 1. Once every 2 yrs  
                                    2. Under DET program: When the expenditure target is exceeded |
Drug Price Adjustment - Data Collection & Effective Date (1)

- **Data collection of class 1 & 3 drugs**
  - Sales data of pharmaceutical companies within 1 year after the latest price adjustment are collected.
  - If less than 1 year, data up to the time point of the price review are collected.

- **Effective date of the new price after adjusting**
  - **Routine adjustment (once every 2yrs):** as announced by the Insurer
  - **Under DET program:** The 1st day of the 1st month of the 2nd season in the next fiscal year (April 1st).
## Class 2 drugs

<table>
<thead>
<tr>
<th>Season when the patent expires</th>
<th>Collection interval of sales data</th>
<th>Effective date of the new price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1\textsuperscript{st} season</td>
<td>The 3\textsuperscript{rd} &amp; 4\textsuperscript{th} season of the previous year</td>
<td>Jun. 1\textsuperscript{st}</td>
</tr>
<tr>
<td>2\textsuperscript{nd} season</td>
<td>The 4\textsuperscript{th} season of the previous year and the 1\textsuperscript{st} season</td>
<td>Sep. 1\textsuperscript{st}</td>
</tr>
<tr>
<td>3\textsuperscript{rd} season</td>
<td>The 3\textsuperscript{rd} &amp; 4\textsuperscript{th} season</td>
<td>Dec. 1\textsuperscript{st}</td>
</tr>
<tr>
<td>4\textsuperscript{th} season</td>
<td>The 2\textsuperscript{nd} &amp; 3\textsuperscript{th} season</td>
<td>Mar. 1\textsuperscript{st} of the next year</td>
</tr>
</tbody>
</table>
Grouping

- **Same Group**: Drugs with identical ingredients, content, specification and dosage form.

- **Weighted average market trading price (WAP)**
  \[ \frac{\sum (\text{Trading value of drugs within the same group and from the same license holder})}{\sum (\text{Trading volume})} \]

- **Group weighted average market trading price (GWAP)**
  \[ \frac{\sum (\text{Trading value of drugs in the same group})}{\sum (\text{Trading volume})} \]
Equation for adjustment

(一) $WAP \geq (1-R) \times P_{\text{old}}$: No adjustment

(二) $WAP < (1-R) \times P_{\text{old}}$: Adjust as following

$$P_{\text{new}} = WAP + P_{\text{old}} \times R \quad (R : 15\%)$$

- $P_{\text{new}}$: New reimbursement price after adjusting
- $WAP$: Weighted average market trading price
- $P_{\text{old}}$: Reimbursement price before adjusting
Price Adjustment - Class 1 (2)

- The upper limit of adjustment range: 40% (except under DET program)
- Set the lowest price within a group:
  - When the reimbursement price for an item after adjusting is 70% lower than the highest reimbursement price within the same group, then its price shall be adjusted to 70% of the highest reimbursement price within the same group.
- $P_{new}$ shall not be higher than $P_{old}$.
- Generic shall not be higher than originator.
**Price Adjustment-Class 2**

- **Patent expired >1 year**
  - Originator
    - The lowest 10 lowest
    - GWAP × (1 + R), \( P_{\text{new}} \leq P_{\text{old}} \)
  - Items within the same group
    - Adjustment range based on originator
      (If no originator is listed: GWAP × (1 + R), \( P_{\text{new}} \leq P_{\text{old}} \))

- **Patent expired for 2~5 years**
  - Originator
    - GWAP × (1 + R), \( P_{\text{new}} \leq P_{\text{old}} \)
  - Items within the same group
    - Adjustment range based on originator
      (If no originator is listed: GWAP × (1 + R), \( P_{\text{new}} \leq P_{\text{old}} \))

※ \( R = 15\% \)  GWAP: Group weighted average market trading price
# A-10 Reference Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Source of Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>Red Book (not official publication)</td>
</tr>
<tr>
<td>Japan</td>
<td>Drug price baselines (official website)</td>
</tr>
<tr>
<td>UK</td>
<td>NHS Prescription Service (official website)</td>
</tr>
<tr>
<td>Canada</td>
<td>Saskatchewan Formulary (official website)</td>
</tr>
<tr>
<td>Germany</td>
<td>ROTE LISTE (official website)</td>
</tr>
<tr>
<td>France</td>
<td>Base des Médicaments et Informations Tarifaires (official website)</td>
</tr>
<tr>
<td>Belgium</td>
<td>Centre Belge d'Information Pharmacothérapeutique (official website)</td>
</tr>
<tr>
<td>Sweden</td>
<td>Farmaceutiska specialiteter i Sverige (official website)</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Arzneimittel kompendium der schweiz (official website)</td>
</tr>
<tr>
<td>Australia</td>
<td>Pharmaceutical Benefits Scheme (official website)</td>
</tr>
</tbody>
</table>
Price Adjustment-Class 3

Subcategories of Class 3

- Listing of the 1st item with the same ingredient(s) and dosage form
- Adjusted by grouping

1. Listed $\leq 15$ yrs (3A)
2. Listed $> 15$ yrs (3B)
3. Same price for items of the same ingredient(s), specification and category
Price Adjustment-Class 3A (1)

The 1st item with the same ingredient(s) and dosage form has been listed \( \leq 15 \) yrs

1. Set temporary price after adjusting
   - GWAP as the target value of the temporary price
   - Items within the same group \( \leq 20 \) trading datas: Use item of other specifications with the highest sales volume in the previous year for calculating the target value (based on the conversion of specifications).
   - \textbf{Temporary price after adjusting} \( = \text{Min} \left[ \text{Max} \left[ \text{Min} \left( \text{WAP}, \text{target value} \times 1.05 \right), \text{target value} \times 0.9 \right], \text{Pold} \right] \)

If an item has no WAP, then the temporary price \( = \text{target value} \)
2. Adjustment range and the maximum adjustment range

Adjustment range (AR) = \( \frac{P_{\text{old}} - P_{\text{temp}}}{P_{\text{old}}} \)

\[ P_{\text{new}} = P_{\text{old}} \times \left( 1 - \text{Min} (\text{AR} - 15\%, \text{AR}_{\text{Max}}) \right) \]

★ Under DET program

\[ P_{\text{new}} = P_{\text{old}} \times \left( 1 - \text{(AR} - 3\% \text{ or } 5\%) \right) \]

- Items listed \( \leq 4\text{yrs} \): 5%
- Items listed >4yrs: 3%
3. Same group, same license holder and same category: prices are adjusted to the price of the item with the lowest price.

4. Set the lowest price within a group:
   - $P_{\text{new}} < 60\%$ the highest reimbursement price: Adjusted to 60% of the highest reimbursement price within the same group, but $P_{\text{new}} \leq 2 \times P_{\text{old}}$. (e.g. $P_{\text{old}} = 100$, $P_{\text{new}} = 50 \rightarrow P_{\text{new}} = 60$; $P_{\text{old}} = 100$, $P_{\text{new}} = 20 \rightarrow P_{\text{new}} = 40$)

5. The price of lower specification shall not be higher than higher specification (same license holder).

6. The price of Generic shall not be higher than originator within the same group.
Price Adjustment-Class 3B

The 1st item with the same ingredient(s) and dosage form has been listed > 15yrs

1. Set the **target value of adjustment**
   - GWAP as the target value of adjustment for each individual item.
   - The price of lower specification shall not be higher than higher specification.

2. **Equation for adjustment**
   - \( P_{\text{new}} = \min \left[ \text{Target value} \times (1 + 15\%), \text{Maximum } P_{\text{old}} \text{ within the same group} \right] \)
### Price Adjustment - Basic Price

For items complying with PIC/S GMP

<table>
<thead>
<tr>
<th>Dosage Form</th>
<th>The lowest price in the dosage form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tablets /Capsules</td>
<td>NT$1.5 /Tab or Cap (standard packing /originators: 2 NT$/Tab or Cap)</td>
</tr>
<tr>
<td>Oral solutions</td>
<td>NT$25/Bot</td>
</tr>
<tr>
<td>Solutions for IV infusion (≥100 mL, &lt;500 mL)</td>
<td>NT$22/Bot</td>
</tr>
<tr>
<td>Solutions for IV infusion (≥500 mL, &lt;1L)</td>
<td>NT$25/Bot</td>
</tr>
<tr>
<td>Solutions for IV infusion (&gt;1L)</td>
<td>NT$35/Bot</td>
</tr>
<tr>
<td>Injectables with penicillins/ cephalosporins /estrogens</td>
<td>NT$25/Bot</td>
</tr>
<tr>
<td>Other Injectables</td>
<td>NT$15/Amp or Vial</td>
</tr>
<tr>
<td>Suppositories</td>
<td>NT$5/piece</td>
</tr>
<tr>
<td>Ophthalmic preparations</td>
<td>NT$12 (NT$4/Bot for daily-dose packaging eye drops)</td>
</tr>
<tr>
<td>Small package of granule/powder /suspension</td>
<td>6 NTD/pack</td>
</tr>
<tr>
<td>Ointment /Cream</td>
<td>10NTD</td>
</tr>
</tbody>
</table>
Drugs Exempted from Routine Price Adjustment

- Drugs exempted from price adjustment
  - Orphan drugs
  - Special drugs (indicated by the Insurer)

- Reviewed and adjusted once every 2 years:
  - Refer to the international price of such drug or similar drug overseas
  - Cost-plus pricing for those without international price

- Date of implementation for such price adjustment: as announced by the Insurer
Outline

- Regulations regarding drug price adjustment
- Price and volume survey
- Principles of drug price adjustment
- Drug Expenditure Target (DET)
- Examples
DET Pilot Program

- Article 46, National Health Insurance Act
  - In case the payment of expense exceeds the preset total of drug expense ratio target, exceeding the targeted amount, the Insurer shall adjust the drug expense payment and payment schedule for the following year.

- A 2-year DET Pilot Program was first promulgated by NHIA on Feb. 8th, 2013. By Jul. 1st, 2015, NHIA announced that the program continue for another 2 years.

- The program was amended on Sep. 13th 2017 and it was announced that the program continue for another 3 years from 2017 onwards.
How a Target Amount is Set

Target amount = Basal value × [1 + Growth rate(%)]

- **Basal value:**
  - The 1\textsuperscript{st} year (2017): the target amount of 2016 (exclusive of the payment for drugs used in AIDS, Hepatitis C, Rare Diseases and Hemophilia)
  - From the 2\textsuperscript{nd} year onwards: the target amount of the previous year

- **Growth rate (%)**: 
  - The growth rate of the general part of the global budget (exclusive of the budget for Chinese medicine)
When the Payment Exceeds Target Expenditure

- When the payment of drug expense exceeds the target amount.
  - The amount in excess shall be paid by the budget for the medical benefit payment for the current year.
  - The Insurer shall adjust the drug expense payment and payment schedule for the following year.
## Price Adjustment under DET

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DET growth rate</strong></td>
<td>4.528%</td>
<td>3.309%</td>
<td>3.481%</td>
<td>4.950%</td>
</tr>
<tr>
<td><strong>Target amount (100M)</strong></td>
<td>1,380.0</td>
<td>1,425.6</td>
<td>1,475.2</td>
<td>1,548.2</td>
</tr>
<tr>
<td><strong>Payment (100M)</strong></td>
<td>1,436.7</td>
<td>1,507.7</td>
<td>1,507.0</td>
<td>1,605.3</td>
</tr>
<tr>
<td><strong>Amount adjusted (100M)</strong></td>
<td>56.7</td>
<td>82.1</td>
<td>31.8</td>
<td>57.1</td>
</tr>
<tr>
<td><strong>Effective date for new price</strong></td>
<td>103.5.1</td>
<td>104.4.1</td>
<td>105.4.1</td>
<td>106.4.1</td>
</tr>
<tr>
<td><strong>Adjustment range</strong></td>
<td>3.9%</td>
<td>5.3%</td>
<td>2.1%</td>
<td>3.5%</td>
</tr>
</tbody>
</table>
Principles of Price Adjustment under DET program (1)

- Drugs in Class 1 & 3 are subject to adjustment.

- The amount in excess of the target amount is shared among classes (Class 1, 3A and 3B), based on the proportion of the total amount adjusted in each class to the overall adjusted amount.

- Total amount adjusted in each class = \[ \sum (P_{old} - P_{temp} \times \text{volume}) \]

  Each item
Principles of Price Adjustment under DET program (2)

Amount in excess of target $T$

- Total amount adjusted in Class 1
- Total amount adjusted in Class 3A
- Total amount adjusted in Class 3B

Equation:

$$P_{\text{new}} = P_{\text{old}} - \left[ (P_{\text{old}} - P_{\text{temp}}) \times \left( \frac{Y'}{Y} \right) \right]$$

e.g. $95 = 100 - \left[ (100 - 80) \times \left( \frac{30}{120} \right) \right]$
Outline

- Regulations regarding drug price adjustment
- Price and volume survey
- Principles of drug price adjustment
- Drug Expenditure Target (DET)
- Examples
Example-Class 1

Class 1 \( P_{new} = WAP + P_{old} \times R \) (R : 15%)

<table>
<thead>
<tr>
<th></th>
<th>( P_{old} )</th>
<th>WAP</th>
<th>((1-R) \times P_{old})</th>
<th>( P_{temp} )</th>
<th>( P_{new} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>w/o DET</td>
<td>17</td>
<td>6.6</td>
<td>14.45</td>
<td></td>
<td>10.2</td>
</tr>
<tr>
<td>w/ DET</td>
<td>17</td>
<td>6.6</td>
<td>14.45</td>
<td>9.1</td>
<td>15</td>
</tr>
</tbody>
</table>

w/o DET
1. \( WAP < (1-R) \times P_{old} \rightarrow 6.6 < (1-15\%) \times 17 = 14.45 \)
2. \( P_{new} = WAP + P_{old} \times R \rightarrow 6.6 + 17 \times 15\% = 9.1 \)
3. As the upper limit for Class 1 is 40% \( \rightarrow 17 \times (1 - 40\%) = 10.2 \)
   \( P_{new} \) shall not be lower than 10.2 \( \rightarrow P_{new} = 10.2 \)

w/ DET (Suppose the adjustment ratio from DET=25%)
1. \( WAP < (1-R) \times P_{old} \rightarrow 6.6 < (1-15\%) \times 17 = 14.45 \)
2. \( P_{temp} = WAP + P_{old} \times R \rightarrow 6.6 + 17 \times 15\% = 9.1 \)
3. \( P_{new} = 17 - [(17-9.1) \times 25\%] = 15 \)
Example-Class 2

Class 2

- Patent expired > 1 year

<table>
<thead>
<tr>
<th>Category</th>
<th>$P_{\text{old}}$</th>
<th>GWAP</th>
<th>A-10 lowest</th>
<th>GWAP*1.15</th>
<th>$P_{\text{temp}}$</th>
<th>Adjustment range (AR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Originators</td>
<td>650</td>
<td>590</td>
<td>620</td>
<td>678.5</td>
<td>620</td>
<td>4.6%</td>
</tr>
<tr>
<td>Generics</td>
<td>520</td>
<td>590</td>
<td></td>
<td></td>
<td></td>
<td>496</td>
</tr>
</tbody>
</table>

**Originators**

$P_{\text{new}} = \min \left[ (GWAP \times 1.15), A-10 \text{ lowest} \right]$

$= \min \left[ (590 \times 1.15 = 678.5), 620 \right] = 620$

**Generics**

1. AR of originator = (650-620)/650 = 4.6%
2. $P_{\text{new}} = P_{\text{old}} \times (1- \text{AR of originator}) = 520 \times (1-4.6%) = 496$
### Example-Class 2

#### Class 2

- Patent expired for 2~5 years

<table>
<thead>
<tr>
<th>Category</th>
<th>( P_{\text{old}} )</th>
<th>GWAP</th>
<th>GWAP ( \times 1.15 )</th>
<th>( P_{\text{new}} )</th>
<th>Adjustment range (AR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Originators_5mg</td>
<td>620</td>
<td>527</td>
<td>606.05</td>
<td>606</td>
<td>2.3%</td>
</tr>
<tr>
<td>Generics_5mg</td>
<td>496</td>
<td>527</td>
<td>484</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generics_2.5mg</td>
<td>275</td>
<td>200</td>
<td>230</td>
<td>230</td>
<td></td>
</tr>
</tbody>
</table>

#### Originators_5mg

\[
P_{\text{new}} = \text{GWAP} \times 1.15 = 527 \times 1.15 = 606
\]

#### Generics_5mg

1. AR of originator \( = \frac{(620-606)}{606} = 2.3\%
2. \( P_{\text{new}} = P_{\text{old}} \times (1 - \text{AR of originator}) = 496 \times (1 - 2.3\%) = 484
\]

#### Generics_2.5mg

Since there’s no originator in the same group,
\[
P_{\text{new}} = \text{GWAP} \times 1.15 = 200 \times 1.15 = 230
\]
**Example-Class 3**

**Class 3A**

<table>
<thead>
<tr>
<th></th>
<th>$P_{\text{old}}$</th>
<th>WAP</th>
<th>GWAP</th>
<th>$P_{\text{temp}}$</th>
<th>AR</th>
<th>$AR_{\text{Max}}$</th>
<th>$P_{\text{temp}}$ (DET)</th>
<th>$P_{\text{new}}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>w/o DET</td>
<td>17</td>
<td>6.6</td>
<td>10.2</td>
<td>9.18</td>
<td>46%</td>
<td>32.5%</td>
<td>17</td>
<td>11.7</td>
</tr>
<tr>
<td>w/ DET</td>
<td>17</td>
<td>6.6</td>
<td>10.2</td>
<td>9.18</td>
<td>46%</td>
<td></td>
<td>9.6</td>
<td>15.1</td>
</tr>
</tbody>
</table>

**w/o DET**
1. $P_{\text{temp}}$ = 9.18 (WAP<target value $\times 0.9 \rightarrow$ target value $\times 0.9=10.2\times0.9=9.18$)
2. $AR=(P_{\text{old}}-P_{\text{temp}})/P_{\text{old}}=(17-9.18)/17=46%$
3. $P_{\text{new}}=P_{\text{old}}\times\left[1-\min(AR-15\%, AR_{\text{Max}})\right]$
   \[=17\times\left[1-\min(46\%-15\%=31\%, 32.5\% \text{ (p.43)}\right)\]=17 \times (1-31\%)=11.7\]

**w/ DET** (Suppose listed $\leq4$yrs; adjustment ratio from DET= 25%)
1. The calculation of $P_{\text{temp}}$及AR is the same as in the case w/o DET
2. $P_{\text{temp}}$ (DET) $= P_{\text{old}}\times\left[1-(AR-3\%)\right]=17\times(1-43%)=9.6$
3. $P_{\text{new}}=17-[(17-9.6)\times25\%]=15.1$
### The Maximum Adjustment Range

<table>
<thead>
<tr>
<th>Adjustment range (AR)</th>
<th>The maximum adjustment range</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR &lt; 15%</td>
<td>No adjustment</td>
</tr>
<tr>
<td>15% ≤ AR &lt; 20%</td>
<td>2.5%</td>
</tr>
<tr>
<td>20% ≤ AR &lt; 25%</td>
<td>7.5%</td>
</tr>
<tr>
<td>25% ≤ AR &lt; 30%</td>
<td>12.5%</td>
</tr>
<tr>
<td>30% ≤ AR &lt; 35%</td>
<td>17.5%</td>
</tr>
<tr>
<td>35% ≤ AR &lt; 40%</td>
<td>22.5%</td>
</tr>
<tr>
<td>40% ≤ AR &lt; 45%</td>
<td>27.5%</td>
</tr>
<tr>
<td>45% ≤ AR &lt; 50%</td>
<td>32.5%</td>
</tr>
<tr>
<td>50% ≤ AR &lt; 55%</td>
<td>37.5%</td>
</tr>
<tr>
<td>AR &gt; 55%</td>
<td>40%</td>
</tr>
</tbody>
</table>
Example-Class 3

Class 3B

<table>
<thead>
<tr>
<th></th>
<th>P_{old}</th>
<th>WAP</th>
<th>GWAP</th>
<th>Weighted average price</th>
<th>P_{temp}</th>
<th>P_{new}</th>
</tr>
</thead>
<tbody>
<tr>
<td>w/o DET</td>
<td>3.8</td>
<td>2.05</td>
<td>2.25</td>
<td></td>
<td></td>
<td>2.58</td>
</tr>
<tr>
<td>w/ DET</td>
<td>3.8</td>
<td>2.05</td>
<td>2.25</td>
<td>3.1</td>
<td>2.58</td>
<td>2.97</td>
</tr>
</tbody>
</table>

w/o DET (Suppose the Maximum P_{old} within the same group $= 3.8$)

$$P_{new} = \min \left( (GWAP \times 1.15), \text{Maximum } P_{old} \text{ within the same group} \right)$$

$$= \min \left( 2.25 \times 1.15 = 2.58, 3.8 \right) = 2.58$$

w/DET (Suppose P_{old} differs among items in the same group; adjustment ratio from DET=25%)

1. \(P_{temp} = \min \left( (GWAP \times 1.15), \text{Maximum } P_{old} \text{ within the same group} \right)\)

$$= \min \left( 2.25 \times 1.15 = 2.58, 3.8 \right) = 2.58$$

2. \(P_{new} = 3.1 - \left( (3.1-2.58) \times 25\% \right) = 2.97$$
Thank you for your attention!