Joint Colloquium of the IACA, PBSS and IAAHS Sections
of the International Actuarial Association
Westin Copley Place Hotel, Boston, U.S.A. – 4-7 May 2008

Annuities: Lessons from Pension
Reform in Latin America (IPT6)

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Options for Retirement Benefits

• Lump sum
  – Usually there are many restrictions
  – Justified to prevent "double dipping"

• Phased withdrawal (also called programmed withdrawal)
  – Problem of adverse selection

• Annuities
  – Individual or joint
  – Criticism against individual annuities
## Types of Payout

<table>
<thead>
<tr>
<th>Country</th>
<th>Payout Market Structure</th>
<th>Lump-sums Allowed?</th>
<th>Degree of Annuitization</th>
<th>Degree of PWs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Competitive</td>
<td>Yes</td>
<td>Very Low</td>
<td>Low</td>
</tr>
<tr>
<td>Chile</td>
<td>Competitive</td>
<td>Yes, but restricted</td>
<td>&gt; 60%</td>
<td>&lt; 40%</td>
</tr>
<tr>
<td>Denmark</td>
<td>Competitive</td>
<td>Yes, but restricted</td>
<td>&gt; 50%</td>
<td>&lt; 50%</td>
</tr>
<tr>
<td><strong>Sweden</strong></td>
<td>Monopoly</td>
<td>No</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Competitive</td>
<td>Yes, but restricted</td>
<td>Very high</td>
<td>0%</td>
</tr>
<tr>
<td>Colombia</td>
<td>Competitive</td>
<td>Yes, but restricted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>Competitive</td>
<td>No</td>
<td>Starts in 2013</td>
<td>Starts in 2013</td>
</tr>
<tr>
<td>Poland</td>
<td>Competitive</td>
<td>No</td>
<td>Starts in 2009</td>
<td>Starts in 2009</td>
</tr>
</tbody>
</table>

Source: Rocha, IIFA, Istanbul, 2006
In Chile (best case scenario)

<table>
<thead>
<tr>
<th>Year</th>
<th>Programmed Withdrawal</th>
<th>Annuities</th>
<th>Insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>32.20%</td>
<td>10.00%</td>
<td>57.80%</td>
</tr>
<tr>
<td>1990</td>
<td>42.10%</td>
<td>23.30%</td>
<td>34.40%</td>
</tr>
<tr>
<td>1995</td>
<td>46.00%</td>
<td>39.60%</td>
<td>11.20%</td>
</tr>
<tr>
<td>2000</td>
<td>40.60%</td>
<td>52.20%</td>
<td>5.30%</td>
</tr>
<tr>
<td>2005</td>
<td>37.30%</td>
<td>58.60%</td>
<td>2.80%</td>
</tr>
<tr>
<td>2006</td>
<td>38.30%</td>
<td>57.90%</td>
<td>2.60%</td>
</tr>
</tbody>
</table>

Source: SAFP, 2007
What happens in Mexico? 
.....and why should the rest of the world care?

- Where is the meat of contribution?
- 6.5% of base wage (upto a limit) for retirement
- 5% on housing account
- 2.5% on life and disability
- Workers compensation
- All the money in bold red are managed by the ubiquitous IMSS and in blue by INFONAVIT

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Rules

• SAR-97 reform treats differently members of the “transition cohort” from members of the “new cohort.”

• If a new entrant to the labor force after July 1997 ( “new cohort”) becomes disabled or dies, she or her beneficiaries must buy an annuity from a private insurance sector specialized annuity provider.
Where is the meat?

<table>
<thead>
<tr>
<th>Workers</th>
<th>Number</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitional generation</td>
<td>7,743,057</td>
<td>63 percent</td>
</tr>
<tr>
<td>New generation</td>
<td>4,604,993</td>
<td>37 percent</td>
</tr>
<tr>
<td>Total</td>
<td>12,348,050</td>
<td>100 percent</td>
</tr>
</tbody>
</table>

Source: IMSS, data for 2004
Source: CNSF, 2008
Number of companies

Source: CNSF, 2008
Why all specialized companies now?

- The 1997 LGISMS reform stated that insurance companies licensed to practice life insurance were allowed to offer pension annuities for a five years transition period.
- After that period, those insurance companies would have had to separate annuities operations in specialized pension annuity companies.
- This explains the transition.
Source: CNSF, 2008, vertical axis in percent
Summary of what has happened
(the tip of the iceberg)

• Foreign subsidiaries have come to dominate
  – This is a general pattern due to NAFTA

• Number of companies have shrunk somewhat – dominated by specialized companies
  – This is due to laws related to who can sell

• Concentration in the industry has stayed the same since 1999
Performance of annuity market

LR = the loss ratio; OR the operational expense ratio; UR = the underwriting expense ratio
Source: CNSF
The Iceberg: Pension becomes a significant player but then it shrinks
A closer look: A clear drop from the peak in 2001

The Rise And Fall of Annuitants

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The Initial Plan

• When the new regulatory regime came into effect in Mexico, the initial plan of 1995 called for buying **single premium annuities** for the **widows** and **disabled workers** under the new system.

• Given that all these affiliates under the new regime would not have enough money in their accounts, the government (through the IMSS) would pay a lump-sum to pay for such annuities.

• Specialized companies would enter this market.
### Additional benefits offered by private companies

<table>
<thead>
<tr>
<th>Company</th>
<th>Additional Benefits %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allianz</td>
<td>14.5</td>
</tr>
<tr>
<td>Inbursa</td>
<td>12.0</td>
</tr>
<tr>
<td>Comercial América</td>
<td>8.0</td>
</tr>
<tr>
<td>BBV</td>
<td>7.3</td>
</tr>
<tr>
<td>Banamex</td>
<td>7.0</td>
</tr>
<tr>
<td>GNP</td>
<td>7.0</td>
</tr>
<tr>
<td>Bital</td>
<td>7.0</td>
</tr>
<tr>
<td>Banorte</td>
<td>6.5</td>
</tr>
<tr>
<td>Génesis</td>
<td>6.3</td>
</tr>
<tr>
<td>Bancomer</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Source: Own, data from 2000
What happened during 1997-2000

• Before 1997, during the defined benefit regime, beneficiaries were paid annually and no annuity was bought

• Under the new regime, IMSS observed two facts between 1997-2000
  – First, cash outflow rose dramatically to pay for the disabled workers and the widows
  – Second, more than a third of the disabled workers died within three years
How much did it cost per annuitant to IMSS?

- It depended on the size of the annuity
- On the average, the cost was between 800,000 and 900,000 pesos per case
- With over 30,000 cases in 2001, it put severe pressure on the budget of the IMSS (which still had a pay as you go structure – the current expenditure came from current year's budget of the federal government)
Summary of additional outflow of IMSS due to annuities

- A study by IMSS showed that the minimum pension guarantee is a little less than USD 200 per month
- This pension is 10% more than what people got under the old law
- The lump sum required for a worker receiving a minimum pension is of a little less than a USD 100,000.
Comparative benefits under 1973 versus 1997 regimes

<table>
<thead>
<tr>
<th>Average salary</th>
<th>1973 Law</th>
<th>1997 Law</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Years of contributions</td>
<td>5</td>
</tr>
<tr>
<td>1,500</td>
<td>1,409</td>
<td>1,418</td>
</tr>
<tr>
<td>3,000</td>
<td>1,415</td>
<td>1,433</td>
</tr>
<tr>
<td>4,500</td>
<td>1,422</td>
<td>1,449</td>
</tr>
<tr>
<td>6,000</td>
<td>1,428</td>
<td>1,464</td>
</tr>
<tr>
<td>7,500</td>
<td>1,434</td>
<td>1,480</td>
</tr>
<tr>
<td>9,000</td>
<td>1,441</td>
<td>1,495</td>
</tr>
<tr>
<td>10,500</td>
<td>1,447</td>
<td>1,511</td>
</tr>
<tr>
<td>12,000</td>
<td>1,611</td>
<td>1,684</td>
</tr>
<tr>
<td>13,500</td>
<td>1,802</td>
<td>1,894</td>
</tr>
</tbody>
</table>

How much did the cost rise for IMSS

• In order to lower the costs, IMSS adopted a new policy:
• All disability pensions were going to be treated as provisional pensions
• This would avoid the lump sum payment of buying a single premium annuity for at least two years
• Why two years?
Why two years?

• By law, all temporary pensions must be renewed as temporary or changed to definitive pension within two years

• After this two year period rule during 2001-2003, outflow due to single premium annuity were dramatically reduced

• Most of the pensions granted were "renewed" temporarily instead of reassigned as "definitive"
This ruling became known as the Last Temptation of the IMSS

- Mexican law establishes that a disability pension must be granted whenever a person is unable to fulfill the exact same job they were doing before the disease or accident.
- The IMSS established more stringent medical criteria before granting a permanent disability pension.
- Essentially, a person had to prove to be very sick in order to get it.
Common problems got compounded with tightened requirements

• In Mexico, proving one's identity can be difficult
• For tax and social security purposes
  – First, the names have to match exactly
  – Second, the identity by RFC have to be right
  – Third, new identity by CURP have to be right
• Many people get multiple IDs
• It affects them severely when they try to collect their social security benefits
Does the IMSS REALLY reduce the cost in the long run?

- The IMSS did an internal study
- It projected forward the cost had the lump sum payment to buy annuities continued (called the "benchmark")
- It projected forward the cost with the new policy of payment with the tightened policy
- The comparison is shown in the next slide
IMSS study of cost comparison

Cost of two options 2005-2068

(million USD)

year
Some observations of the cost projection 2005-2068

- The big spike in the cost of year 2006 from the benchmark comes from assuming the costs of all the lump sums generated by the pensions that were handled as temporary but were supposed to be definitive.
- The current policy is cheaper until the year 2053
- Which one is cheaper?
- We have to choose a discount rate to make a comparison of the two vectors by converting them into scalars
## Comparison of the regimes

<table>
<thead>
<tr>
<th>Rate</th>
<th>PVCurrent</th>
<th>PVBenchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>$276,993.62</td>
<td>$314,310.60</td>
</tr>
<tr>
<td>2%</td>
<td>$132,821.26</td>
<td>$163,091.39</td>
</tr>
<tr>
<td>3.5%</td>
<td>$83,659.71</td>
<td>$109,329.31</td>
</tr>
<tr>
<td>5%</td>
<td>$56,633.42</td>
<td>$78,594.50</td>
</tr>
<tr>
<td>10%</td>
<td>$23,065.99</td>
<td>$37,416.61</td>
</tr>
</tbody>
</table>

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Conclusions

- New policy has reduced the “cost to IMSS” in the NPV sense in the order of $20 billion pesos (at a benchmark rate of 3.5%)
- However, such a reduction in cost has a price in the future
- The market for contingent annuities has collapsed
- This reduction in competition could increase the transactions cost of buying annuities in the future thus compensating for the saving that IMSS has generated
So what?
General lessons

• Institutional structures are important
  – It is possible that loopholes in reform can allow the (bad?) old regime to play havoc in the annuities markets

• Strict regulation does not necessarily benefit annuitants
  – Mexican companies offering annuities have heavy restrictions on investment regime
  – A quick change in market condition can actually make matters worse – it also discourages new entrants
Thank you. Questions?