The Reformed Mexican Social Security System: 15 years of experience ...

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This year (2012) will mark the 15th anniversary of the reforms to Mexico’s social security law that radically changed the framework for pensions in that nation. The purpose of this paper is to evaluate the degree to which they fulfilled the benefits expected at the time of their inception. The reform proposal and the subsequent debates clearly identified the shortcomings and failures of the old, pay-as-you-go system, as well as the potential benefits of the new individual account framework and associated transition costs. These will be described, as well as the arguments presented by various critics.

The paper will examine evidence of the costs and benefits brought by the new system in three main areas: benefits to employees, impact on public finances, as well as the externalities it has produced.

Specifically, it will look at the pensions delivered by social security in the past 30 years and their corresponding replacement rates and projections for the next 30 years.

It will also make a rough evaluation the transition costs so far incurred as well as current projections of future costs, compared with projections made during the reform discussions;

It will comment on some externalities such as increased depth of financial markets; internal savings; transparency of public finances; impact in public and private pension plans; etc.

Finally, it will highlight the virtues and failures of the new system and propose a path for improvement.
**Mexico’s Social Security ecosystem**

Mexico has several Social Security Systems:

- **IMSS**: Covers workers of private enterprises
- **ISSSTE**: Covers federal public employees
- **State government ISSSTEs**: Covers state (provinces) and municipal public employees
- **ISSFAM**: Covers armed forces employees
- **Pemex**: Covers Pemex’s workers
- **RJP IMSS**: Covers IMSS employees

Besides pensions, all these systems provide health care as well as other benefits (e.g.: child care) to employees and their families.

Still, less than half of the working population is not permanently enrolled within these social security schemes, due to various forms of informal employment.

<table>
<thead>
<tr>
<th>Size of the workforce</th>
<th>48,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributing to Social Security</td>
<td>18,850,000</td>
</tr>
<tr>
<td>IMSS</td>
<td>14,600,000</td>
</tr>
<tr>
<td>ISSSTE</td>
<td>2,500,000</td>
</tr>
<tr>
<td>State government ISSSTEs</td>
<td>1,000,000</td>
</tr>
<tr>
<td>ISSFAM (Armed Forces)</td>
<td>250,000</td>
</tr>
<tr>
<td>Pemex</td>
<td>150,000</td>
</tr>
<tr>
<td>RJP IMSS employees</td>
<td>350,000</td>
</tr>
<tr>
<td><strong>Non-Contributing</strong></td>
<td><strong>29,150,000</strong></td>
</tr>
</tbody>
</table>

2011 estimates based on various sources (see bibliography)

For the sake of simplicity, this paper will only refer to the old-age pensions at the IMSS system, although other systems have also gone—or are going through—similar reform paths.

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1 Alberto Valencia Armas, “El impacto de la estabilidad laboral en los montos de las pensiones”, Presentation at a Pension’s Seminar at ITAM, February, 2007
Historical Background: The Social Security System until 1997

A Social Security Law was promulgated in 1943, creating the IMSS. Until 1997 it managed a traditional defined benefit pension system with the benefit dependent on the total years of contributions and the average salary\(^2\) of the last 5 years of contributions.

Contributions to the system since 1973 were 4.5% of salaries and, under normal economic conditions (i.e.: moderate inflation and salary increases slightly above inflation), the system’s benefits would have implied a replacement rate of 60%-80% of final salary for someone retiring at 65 after 35-40 years of contributions. (See Appendix A)

**It has to be noted that under these “normal economic conditions” there is a huge gap (actuarial deficit) of 4:1 between present value of benefits and that of contributions. (See appendix B).**

In any case, the IMSS did not create any reserves: it subsidized its other benefits (health care, hospitals, recreation centers, theaters and even a football team) with the system’s “surpluses”.

This would soon have been unsustainable, but economic conditions were far from “normal”:

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1. The salary based for both contributions and benefits was capped at 10 times the minimum wage.
Mainly due to wide differentials in inflation and salary increases within different periods of time, replacement rates and purchasing power of pensions varied depending on the retirement year of each person:

Furthermore, pensions were not linked to inflation or salary increases until 1985, when most pensions had already seen their real value fall, regardless of their original replacement rate or purchasing power. Also, by that time the informal economy was growing at such a pace that average contribution density was below 60%.³

Partly due to the diminishing purchasing power of pensions and the system’s fiscal unsustainability, in 1992 an additional contribution of 2% was mandated into individual accounts in order to have individual savings that would complement the social security system’s pensions.

1996: The Year of the Reform

In 1994/1995 Mexico suffered what has now been called the Tequila Crisis. This included the devaluation of the peso, high inflation (reaching 52% in 1995), a 6.2% fall in GDP and rising interest rates.

The United States, the World Bank and the IMF came to the rescue with a $50 billion USD package (President Clinton immediately approved a $20 billion loan; partly to avoid the financial damage to American financial institutions that a Mexican default would cause). As now with Greece, these loans included terms and conditions that Mexico would have to implement.⁴

³ Based on estimations done from a study of transition probabilities within social security systems and the informal economy in 1995 for the IMSS by Abraham Hernández and Sergio Campos-Ortega

⁴ Las relaciones de México con el Fondo Monetario Internacional, C. José Aranda Izguerra, Carta de Políticas Públicas, Facultad de Economía, UNAM, 2005
One of these conditions ("recommendations") was the reform of the Social Security system, which under normal economic conditions was unsustainable and otherwise it was not delivering the promised benefits.

As with any other Social Security system, the choices were limited and faced opposition from the affected parties:

- **Increase contributions**: Corporations were opposed since they made most contributions.
- **Increase the retirement age**: Public opinion, unions and politicians opposed this measure.
- **Reduced replacement rates**: Opposed by the same parties as above.
- **Continue subsidizing the system**: Unsustainable for public finances; opposed by creditors: IMF, World Bank, foreign banks.

After months of debate, Congress approved a new Social Security Law in 1996 to enter into effect in 1997. This reform consisted of structural changes to the existing defined benefit system, turning it into a defined contribution system based on the Chilean model and the guidelines set forth in the World Bank’s 1994 publication “Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth”.

The reform was based in the following principles and objectives “agreed” upon with corporations, unions and workers:5

- “No to the privatization of Social Security”
- “No to increasing contributions”
- “Avoid the financial collapse of the IMSS”
- “Increase affiliation to Social Security”
- “Improve benefits”
- “Promote employment and economic growth”
- “Increase internal savings”
- “Protect the disposable income of workers”
- “Increase government contributions transparently”
- “Avoid subsidies within the IMSS (i.e. between retirement and health)”
- “Make the system fairer and reinforce solidarity and its public nature”
- “To solve the actuarial deficit of the system”
- “Make it immune to economic crisis, especially to inflation and devaluations”
- “Define properly the property of contributions by workers”
- “To have dignified pensions”
- “Define and respect vested benefits”
- “Guarantee a minimum pension”
- “Transition period for current affiliates”
- “The creation of specialized entities to manage the contributions into individual accounts”
- “Freedom of choice”

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5 Propuesta Obrero-Empresarial de Alianza para el Fortalecimiento y Modernización de la Seguridad Social, CCE/Congreso del Trabajo, 1995
Indeed, contributions were not increased and retirement ages were not increased (in fact, it’s possible now to retire earlier). Also, the system is not subsidized, except for a known and small contribution of the government. As a result, replacement rates were lower.

However, this was never communicated to the beneficiaries. For example, the first advertisements of the private administrators pictured animated ants skiing in the snow and old couples dancing by the beach.

**The reformed system**

The new social security system thus works as following:

Contributions (6.5% of salaries -same as before) go into individual accounts managed and invested by private special entities (AFORES) chosen by each employee.

The salary considered for contributions was capped at 25 times the minimum wage, from 10 times in the previous system.

The government contributes an additional amount to each individual account. It was originally a flat amount –now differentiated by salary: it amounts to 16% of salary for those earning the minimum wage; less than 2% of salaries for those earning up to 15 times the minimum wage; none for those who earn more.

At retirement, the accumulated amount in the individual account must buy -from any authorized insurance company- a life annuity worth at least 1.3 times the prevailing minimum wage.

If the accumulated amount is less than a pension worth the minimum wage, the government pays the balance to the insurance company, provided that the retiree has at least 60 years of age and 1250 weeks (24 years) of contributions.

With whatever is left the retiree might buy a larger annuity, make programmed withdrawals or even withdraw the balance as a lump sum.

When the pensioner dies, his/her widow(er) and/or his descendants are entitled to a portion of the original pension.

People registered on the system prior to the reform (June 1997) may choose, at retirement, between applying the old system’s defined benefit or using their accumulated amount the way they may under the new system (transition generation).

For the most part, the administration in power at that time stressed two benefits: 1) people who could not meet the eligibility criteria for a pension (60 years of age and 9.5 years of contributions) would now receive something instead of nothing; and 2) the new system would be more transparent and IMSS would not be able to channel contributions to other, non-pension, benefits.

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Given that most workers frequently rotated between formal and informal employment, many did not meet the criteria for receiving a pension. Based on estimations done from a study of transition probabilities within
Under “normal economic conditions” - i.e. moderate inflation (3%-5%); investment returns of 3%-4% above inflation; and salaries increases of 1%-3% above inflation – the new system benefits will yield a net replacement rate of 30%-35% of final salaries at 65 years of age and 35-40 years of contributions for an average earner. This replacement rate would be half of the one obtained under the old system and is the lowest replacement rate of all OECD countries.\(^7\)

Replacement rates will evidently depend on average investment returns, but also on the choice made of the investing management firm (called AFORE by their initials in Spanish) and the investment returns just prior to retirement -which in the case of a year like 2008-2009 can certainly make a big difference.\(^8\)

Wide variations will be observed for workers retiring at the same time after a similar career just by having chosen a different AFORE (whose average annual return may range from 6% to 12%):

<table>
<thead>
<tr>
<th>Net investment returns (SB 3)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Invercap</td>
<td>12.42%</td>
</tr>
<tr>
<td>SURA</td>
<td>11.33%</td>
</tr>
<tr>
<td>Bancomer</td>
<td>10.96%</td>
</tr>
<tr>
<td>Banamex</td>
<td>10.82%</td>
</tr>
<tr>
<td>XXI</td>
<td>10.67%</td>
</tr>
<tr>
<td>PensionISSSTE</td>
<td>10.51%</td>
</tr>
<tr>
<td>Principal</td>
<td>10.50%</td>
</tr>
<tr>
<td>Metlife</td>
<td>10.25%</td>
</tr>
<tr>
<td>Profuturo GNP</td>
<td>10.01%</td>
</tr>
<tr>
<td>Azteca</td>
<td>9.59%</td>
</tr>
<tr>
<td>Afirme Bajio</td>
<td>8.62%</td>
</tr>
<tr>
<td>Coppel</td>
<td>8.00%</td>
</tr>
<tr>
<td>Inbursa</td>
<td>5.97%</td>
</tr>
</tbody>
</table>

As Calderón-Colín et al (2008) show, workers do not have the knowledge necessary to make rational choices of investment managers.

Furthermore, given the option for the transition generation and the fact that the new system’s benefit are around one half of the previous one, we might see people entering a job with one week of difference, following the same career path and retiring at the same time one with half a pension as the other.

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\(^7\) OECD: Pensions at a Glance 2011: Retirement-income Systems in OECD and G20 Countries, p. 125

\(^8\) Figure 4 in Brown, Robert, Retirement 20/20: Innovation in Pension Design, University of Waterloo, 2011

social security systems and the informal economy in 1995 for the IMSS by Abraham Hernández and Sergio Campos-Ortega
Were expectations met?

We will now analyze if the new system achieved what was expected from it.

“No to the privatization of Social Security”: The new system is managed and funds invested by mostly private companies. The IMSS partly owns one of them, which manages 12% of all investments. The system has in all but name been privatized.

“No to increasing contributions“: Mostly they were kept the same (6.5% of salaries) plus a fixed government contribution representing 0%-16% of salaries. They were increased for higher earners, since now the salary taken into account for contributions is capped at 25 times minimum wage instead of 10 times.

“Avoid the Financial Collapse of the IMSS”: The IMSS is technically broke; and not because of the new system (for which the IMSS has no further obligations), but by the benefits offered to its employees (who do retire after 30 years of service with a pension larger than its final salary).

“Increase affiliation to Social Security”: Contributors to IMSS in 2006 were ca. 28% of total working force; in 2011 they are 31%.

“Improve benefits”: Replacement rates were halved under normal economic conditions.

“Promote employment and economic growth”: Economic growth in Mexico averaged 2.9% in real terms from 1996 to 2010. This rate was well below the 3.3% rate observed for Latin America and the Caribbean or the 5.7% rate for emerging economies as a whole during the same period.

“Increase internal savings”: Before the reform, companies and workers contributed 6.5% of salaries (4.5% to IMSS and 2% to federal government bonds). At the beginning of the reform, 97% of contributions were invested in federal government bonds. After 15 years of various changes in the investment rules, still around 70% is invested in federal, state and municipal government or other bonds placed by public entities (CFE, Pemex, Infonavit, etc.). Robert Brown would insist that not much has changed. In fact, the gross national savings rate has remained very stable between 1996 and 2010 (around 23% to 25% of GDP, according to the IMF).

“Increase government contributions transparently”: The government still has to pay the transition costs of the system (currently 0.5% of GDP; it’s expected to reach 2.56% of GDP in 2035\(^9\)) and still subsidizes IMSS activities (medical care, child care, etc.) which were previously subsidized by the old system’s “surpluses”.

“Avoid subsidies within the IMSS (i.e. between retirement and health)”: This is doesn’t take place any longer since pension contributions are now directed to individual accounts (the government subsidizes the IMSS’s non-pension activities through the general budget).

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\(^9\) Sales-Serrapy, Carlos et al (1998). This figure is derived from their High Growth Scenario, with a real interest rate of 3.5%.
“Make the system fairer and reinforce solidarity and its public nature”: Individual accounts are by definition non-solidary and the new system naturally allows for different replacement rates for similar workers. This not only due to the economic environment but it is also a result of individual choice.

“To solve the actuarial deficit of the system”: The system has a large transition cost to pay (and no assets).

“Make it immune to economic crisis, especially to inflation and devaluations”: Many workers saw their savings reduced by more than 10% in 2008 due to the global financial crisis.

“Define properly the property of contributions by workers”: Few understand the system; few pay attention to its individual statement; few have any idea of how much will they receive.10

“To have dignifying pensions”: Mexico has the lowest replacement rate of all OECD countries:

“Define and respect vested benefits”: In the past system you could lose all your contributions if you didn’t meet certain requirements (e.g. number of weeks of contributions and being active in the system at age 60). Now, they are portable within social security systems (IMSS/ISSSTE) and may be withdrawn even if one stopped working before reaching retirement.

“Guarantee a minimum pension”: The same as the old system: the minimum wage (currently $1,870 MXP per month –ca. $150 USD). But now this guarantee is granted after 25 years of contributions, compared with 10 years of contributions previously.

“Transition period for current affiliates”: Indeed, every worker enrolled before June 1997 may choose, at retirement, between the old and the new system. They have an added benefit: their pension from the old system will be calculated with a capped salary of 25 times the minimum wage instead of 10 (as it was under the old system). The cost will be paid from general taxation.

“The creation of specialized entities to manage the contributions into individual accounts”: AFOREs have been very profitable. According to CONSAR (the new system’s regulator), in 2011 the AFOREs had a ROE of 27% and receive commissions worth US$ 1.5 billion per year.

“Freedom of choice”: Workers may indeed choose the AFORE that manages and invests their contributions ... at their own risk. There is evidence that they don’t necessarily choose the ones with lower commissions or greater returns.

The new system has certainly helped to reduce the federal government’s fiscal deficit, which was the real priority of the reform.

One externality produced by the system—and not stated specifically in the principles of the reform—has been the deepening of domestic financial markets and a lower reliance of the government in foreign debt.

Conclusions and paths for improvement

The first conclusion is that a structural reform of a social security system does not magically avert old age crises nor necessarily promotes growth. And it does not avoid the hard choices of increasing contributions (or subsidies), increasing retirement age or reducing benefits.

Changing from an unfunded system to one invested mainly in government bonds does not change the fact that benefits will be paid in the future by the government (most likely, through taxation or even worse, through inflation). However, excluding the transition costs, it is now clear which is the government’s debt with the system and it’s transparently accounted for.

People are not aware of expected replacement rates and the transitory regime will not make it clear until it’s too late.

Privatization of the system has not avoided governments (e.g.: Argentina, Hungary) from nationalizing its assets in case of “emergencies”. A big pot of money is always a big temptation for any politician.

The most pressing problem in Mexico’s Social Security is not a new vs old, collective vs individual, funded vs unfunded system, but a lack of coverage for most workers, followed by insufficient contributions for those in the new system.
Some ideas that have been aired to enhance the system are:

Increase contributions to at least 10% of salaries (a 5% contribution is already been made for housing through Infonavit, the federal government’s housing agency, to a separate individual account).

Create a Universal Pension for people reaching old age, regardless of employment conditions. Schemes of this type already exist in the Federal District and for certain other groups.

Independent workers (doctor, lawyers, “free lancers”) and the self-employed should be forced into contributing for their retirement.

Rules should be eased to promote more private investments (debt and equity).

Pool investment returns so that everyone receives the same return.

Clearly inform workers of expected replacement rates.

Incentivize the creation of private corporate pension plans.

Ask (mandate) companies to send employees an annual letter with a projection of their expected pension at retirement from Social Security and from their company (if any).
Pensionable Salary: Average salary of last 250 weeks of contributions.

Pension = Pens. Sal. * [Basic Quantity + Additional Quantity (weeks contributed – 500)/52]

<table>
<thead>
<tr>
<th>Final Salary (times minimum wage)</th>
<th>Basic quantity (%)</th>
<th>Additional quantity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 1</td>
<td>80</td>
<td>0.563</td>
</tr>
<tr>
<td>From 1.01 To 1.25</td>
<td>77.11</td>
<td>0.814</td>
</tr>
<tr>
<td>From 1.26 To 1.50</td>
<td>58.18</td>
<td>1.178</td>
</tr>
<tr>
<td>From 1.51 To 1.75</td>
<td>49.23</td>
<td>1.43</td>
</tr>
<tr>
<td>From 1.76 To 2.00</td>
<td>42.67</td>
<td>1.615</td>
</tr>
<tr>
<td>From 2.01 To 2.25</td>
<td>37.65</td>
<td>1.756</td>
</tr>
<tr>
<td>From 2.26 To 2.50</td>
<td>33.68</td>
<td>1.868</td>
</tr>
<tr>
<td>From 2.51 To 2.75</td>
<td>30.48</td>
<td>1.958</td>
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<td>From 2.76 To 3.00</td>
<td>27.83</td>
<td>2.033</td>
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<td>From 3.01 To 3.25</td>
<td>25.6</td>
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<td>22.07</td>
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<td>From 3.76 To 4.00</td>
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<td>From 4.76 To 5.00</td>
<td>16.41</td>
<td>2.355</td>
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<td>From 5.26 To 5.50</td>
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<td>2.398</td>
</tr>
<tr>
<td>From 5.51 To 5.75</td>
<td>14.22</td>
<td>2.416</td>
</tr>
<tr>
<td>From 5.76 To 6.00</td>
<td>13.62</td>
<td>2.433</td>
</tr>
<tr>
<td>Above 6.01</td>
<td>13</td>
<td>2.45</td>
</tr>
</tbody>
</table>
Appendix B

Individual Actuarial Deficit Calculation

Assumptions

Entry age: 25 years
Retirement Age: 65 years
Contribution’s density (percentage of time contributing to the system): 90%
Mortality assumptions:
Before retirement: None (probability of survival from 25 to 60 is ca. 75%, but the system also considers death benefits prior to retirement)
Life Expectancy at 65 years: 15.5 years (1982 mortality table)
Average inflation: 4.5%
Interest rate: 3.5% above inflation
Salary increases (2% above inflation)
Minimum wage salary increases: same as inflation
Salary at retirement: 4 times minimum wage

Present Value of Benefits

Pensionable Salary (5-years average salary): 3.31 times minimum wage (83% final salary)
Years of contribution: 36 years

Pension at retirement = Pensionable Salary \( \times \left( 0.1939 + 0.0227 \times (\text{years of contributions} – 9.5) \right) \)
= 2.64 times minimum wage = 66% final salary

Joint (75%) life annuity: 167.8

Present value of pension (at 65): 167.8 \( \times \) 2.64 times minimum wage = \textbf{443 times minimum wage}

Future value of contributions

Initial salary: 1.81 times minimum wage

Average contributions: 4.5% \( \times \) Contribution’s density (90%) = 4.05%

Initial annual contribution = 4.05% \( \times \) 1.81 times minimum wage \( \times \) 12 = 0.88 times minimum wage

Present value of contributions (at 25) = 0.88 times minimum wage \( \times \) 30.07 = 26.48 times minimum wage

Future value of contributions (at 65) = 26.48 times minimum wage \( \times \) \(1.035)^{40} = \textbf{104.84 times minimum wage}\
Bibliography


Alonso-Ortiz, Jorge (2011), “Social Security and Retirement across the OECD”, Centro de Investigación Económica, ITAM.


