

# The Financial Crisis and Mandatory Pension Systems in Developing Countries

## Short- and medium-term responses for retirement income systems

The international financial crisis has severely affected the value of pension fund assets worldwide. The unfolding global recession will also impose pressures on public pension schemes financed on a pay-as-you-go basis, while limiting the capacity of governments to mitigate both of these effects. Governments are reacting to these events in different ways. Some are asking whether the balance between funded defined-contribution and unfunded pension schemes should be reconsidered. A few have already taken actions to reverse prior reforms.

This note discusses the potential impacts of the financial crisis on fully funded and pay-as-you-go retirement-income systems in World Bank client countries, and identifies key short- and medium-term policy responses. The note does not go into depth on the issues identified. Stand-alone technical notes will be prepared subsequently. This note itself will be updated and refined as new issues emerge.

The main messages from the note can be summarized as follows:

**Abrupt policy changes in response to the immediate circumstances should be avoided.**

Pension systems are designed to function over long time periods. Poorly designed short term responses to relatively rare events can potentially have negative long-term consequences on the capacity of pension systems to reliably provide adequate levels of retirement income.

**It is important to observe that only a small number of retiring individuals are affected by the crisis.** Targeted measures can be considered to mitigate the losses in their savings and the value of their pensions.

**The current crisis strengthens the need for diversified multi-pillar pension systems.** These

allow for a better diversification of risks and thus provide better protection to individuals who may be vulnerable to the kind of economic shocks now being experienced.

**Increasing attention should be paid to managing the exposure of individuals to short term financial risks in funded systems. Strengthening the management of exposure** can be achieved through both default portfolios designed for workers nearing retirement age and also the development of phased transitions to the payout of benefits that limit the impact of short term financial volatility.

### The impact of the financial crisis on funded defined-contribution pensions

The impact of the financial crisis on individuals participating in funded defined-contribution schemes depends on four main factors: (i) changes in asset prices and the potential recovery over the medium term; (ii) the proportion of pension wealth that is supported by funded individual account assets; (iii) the presence of minimum social pensions or guarantees that are integrated into the pension system; and (iv) the requirement and framework for mandatory annuitization of the accumulated balance at retirement.

*Losses in asset values over the last 12 months reported by pension funds have been considerable.* In client countries with funded systems these losses have ranged between 8% and 50% (Table 1). While the losses are disturbing to plan members over the short term, they should not be taken as an indicator of the overall longer term performance of the funds which is the relevant perspective for any pension system. Indeed,

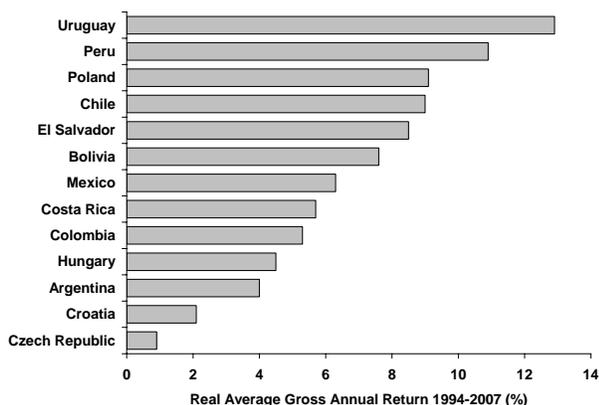
from 1994 through 2007, in 13 countries for which data is available, the mandatory pension funds experienced an annual real rate of return of 6% per year (Figure 1). In Chile, for instance, even with the losses observed up to August of this year, real returns for 2002-2008 ranged between 3% to 10% a year depending on the type of portfolio. (AFP, 2008).

Table 1: Real Returns of Mandatory Pension Funds (year-on-year)

		Growth	Balanced	Conservative
Chile	13-Oct	-46.1	-23.1	0
Mexico	30-Sept	-8.3	-6	-0.5
Peru	10-Oct	-47.8	-33.9	-14.5
Uruguay	30-Sept		-7.5	
Croatia	30-Oct		-14.1	
Estonia	15-Oct	-30.5	-20.9	-9.7
Hungary	15-Oct	-35		-18
Lithuania	15-Oct	-48.4	-32.6	-9.4
Poland	30-Sept		-17.4	
Slovak Republic	13-Oct	-12.4	-10.3	-2

Source: Bank staff.

Figure 1: Long Term Pension Fund Returns



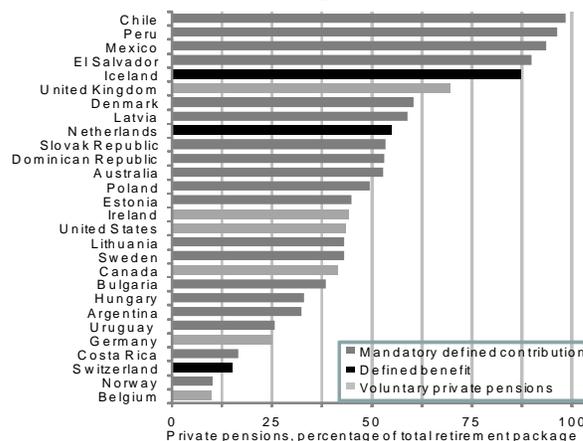
Note: For countries where the reform was implemented after 1994 (e.g., Croatia) the rate of return is from the point of inception.

Source: Bebczuk and Musalem (2009)

Most countries with mandatory funded pensions have multi-pillar systems in which funded individual accounts form only part of the overall retirement package. In a majority of countries, the pension individuals receive also has a defined-benefit component and often there are minimum pension guarantees (see below). All of the countries in Eastern Europe/Central Asia (ECA) except Kazakhstan that introduced funded schemes maintained a defined-benefit system as well. In Lithuania and Hungary, for example, less than 30% of the retirement benefit package for retirees today comes from financial assets in individual accounts.

Retirement-income systems that are more exposed to the financial crisis include those of Chile, El Salvador, Mexico and Peru, where defined-benefit pension systems were eliminated and the majority of retirement incomes will come from funded defined contribution pensions (Figure 2). In Mexico, however, the government guaranteed that overall pensions under the new system would be at least as large as those under the pre-reform pay-as-you-go scheme for people already covered. The impact of the declines in asset values in Mexico will therefore be compensated for persons who retire before asset values recover.

Figure 2: Role of Financial Assets in the Retirement Package

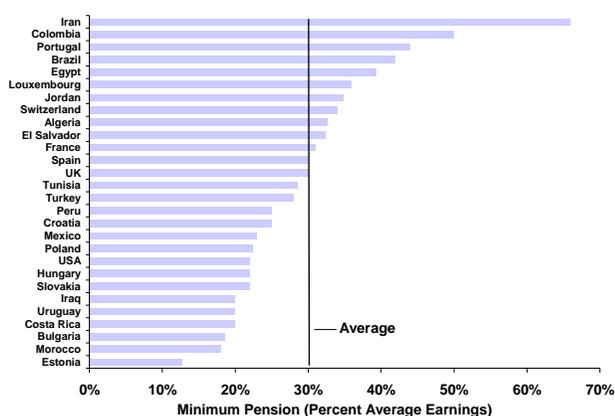


Note: calculations are based on weighted average pension wealth and are for full-career workers. See OECD (2007) and D’Addio, Seisdedos and Whitehouse (2008).

Source: APEX model and Whitehouse (2007).

Many countries also provide social pensions or offer minimum pension guarantees. The main objective of these provisions is to prevent poverty during old-age. They are part of contributory or non-contributory (zero-pillar) systems. The average value of these benefits across countries for which information is available is around 30% of the average economy-wide earnings (Figure 3). As a result, even where pensions are heavily exposed to fluctuations in the value of financial assets, in many cases minimum pension guarantees shield lower-income workers from poverty. Of course declines in asset prices can still materially reduce retirement benefits.

Figure 3: Minimum Pension Guarantees



Source: Staff calculations, Robalino et al. (2005), and Whitehouse (2007)

Only a small number of workers will retire during the period in which their pensions would be reduced due to the decline in asset values. Those workers facing the most important recent decline in their pension benefit are those who *have to* retire in the midst of the crisis and, in particular, those who are mandated to transform their accumulated retirement savings into an annuity. Most of the countries with mandatory funded systems have established these during the last twenty years and typically included only workers who were more than 20 years from the normal retirement age. Although some permitted older workers to also switch into the funded system, except in a few countries, the rates for older workers were not very high. Therefore there are relatively few individuals with a large reliance in a funded account who will be retiring in the short term.

The situation varies between regions. In the countries of Eastern and Central Europe and Asia (ECA) that reformed their systems beginning in the early 1990's the full cohorts will retire in 15 or more years and partial cohorts in 4 years (see Annex). In Latin America, where reforms occurred earlier the situation is different as funded pillars already affect workers retiring now (see Annex). But even in these cases there is a minority of plan members who are affected. For instance, in the case of Chile, the country with the oldest funded pillar, only 5% of plan members have to retire in the next 5 years and many other countries have a far lower percentage.

In addition, some funded systems have established multiple portfolios that include conservative options that are primarily invested in short term government debt. Although these portfolios provide a relatively

lower rate of return, they shield plan members from most of the losses in asset values. In Chile, which introduced the multiple funds in 2002, older workers are limited to the more conservative funds one of which is a default option if they make no other choice. As a result 80% of the members within 5 years of retirement age are invested in one of the two most conservative portfolios and have been largely shielded from losses. Although small in number, however, if these retiring workers are severely affected it will have a potentially important influence on the way in which the reformed pensions are perceived and a political influence well beyond the economic impact and so will likely need to be addressed in some manner.

### Are defined-benefit pay-as-you-go pensions affected as well?

Earnings related pay-as-you-go pension systems will be affected in a less dramatic and immediate way as the economic downturn reduces their stream of revenue and potentially increases benefit claims. Indeed, the emerging global recession will reduce contribution revenue in most countries as a result of decrease in employment or reductions in the level of earnings on which contributions are levied. In addition, pension expenditures from such schemes will likely increase as more individuals retire from the labor force and seek pension benefits in the face of an economic downturn. Disability claims can also increase in response to higher unemployment.

*The extent of the financial impact depends significantly on the maturity of the scheme.* Countries which will face the greatest fiscal pressures are those where financial flows from contributions and investments are less than current expenditures, and those where liquid reserves could face the greatest fiscal pressures. Examples of countries in this situation include: Azerbaijan, Brazil, Egypt, Morocco, Russia, Serbia, and Tunisia. Those countries in a less frail financial situation will need to reduce cash balances temporarily and/or draw on reserves. However, it should be possible to repair the effects once the crisis has passed.

*The effects on members will depend on how governments deal with the shortfall in revenues.* They could finance pension-scheme deficits in full. Alternatively, they might partially default on pension promises, by

delaying pension payments or failing to index benefits, for example. The balance between the two options will be politically determined as pensions are just one of a range of competing demands for limited public resources. The main difficulties will be observed in countries that have overall fiscal deficits and rely on external debt financing that has become increasingly difficult to refinance with the global credit crunch.

*In some cases (as recently occurred in Argentina) countries that have introduced funded second pillars may be tempted to re-allocate the portion of the social insurance contributions that previously went to pay-as-you-go schemes back to the public schemes.* Although this might address short term cash flow issues, it does not improve the overall public net-liability position, and it risks having negative long term consequences on the individual benefit position. In addition to diminishing the diversification of the overall retirement system and placing workers at the risk of future benefit reductions if the system can not remain viable over the long term with the increased liabilities, this will also close funded account when asset values are low, locking in losses and precluding members from the opportunity to benefit from any recovery in prices.

### Short-term responses

In the short-term, governments are advised not to overreact to current economic conditions and to carefully analyze the full consequences of policy responses in the context of the long-term planning horizon relevant for pensions. Three general recommendations are made.

*First, governments should avoid short-term reform reversals that have not been properly assessed and that may come at a high price for future retirees.* Reverting workers more than five years from retirement to a pay as you go system may be attractive and politically expedient. However, this implies that government would be reinstating an implicit pension liability with the pay-as-you-go system (in exchange for the assets they borrow now) and that will need to be financed in the future. Limiting contributions to funded systems in the current period will also deny members the opportunity to receive higher pensions in the future. This is particularly true now when plan members could purchase assets at relatively low prices and thus accrue large potential gains.

Similarly, moving asset allocations to what are perceived as more secure instruments such as short term government debt may placate members with diminishing accounts but will severely limit the opportunities for higher retirement benefits. Analysis of historical patterns in the asset markets of developed countries demonstrates that, despite significant variation in rates or return due to market volatility, a diversified portfolio of assets would result in a higher level of retirement savings over nearly all time periods (see Munnell, Webb, and Golub-Sass, 2008).

*Secondly, governments should recognize that the current financial crisis is a rare “extreme” event.* As such, it requires temporary measures to deal with the effects of the crisis rather than structural changes in policy. Moreover, any compensation arrangements that may be considered need to be carefully designed. Once established these could be very difficult to eliminate even when conditions no longer warrant them.

*Thirdly, governments should not underestimate the potential positive effects that long term institutional investors (such as pension funds) can have on the financial system enterprise financing, and ultimately employment and growth.* Countries with well-developed, regulated and supervised pension funds (such as Chile) have been able to weather past shocks much better as the purchase of commercial bonds partially compensated for reduced access to Bank loans. There is emerging evidence that pension funds are moving into loan markets previously dominated by commercial and investment banks (such as in the Netherlands).

The following short-term measures should be considered:

- *Establishing a public information campaign* to explain the situation to members of funded and defined-benefit pension schemes, informing the public of the volatility of investment returns, providing detailed information on the actual and anticipated effect on benefits for workers of different age groups, and describing measures such as minimum and/or non-contributory pensions to protect the poorest and most vulnerable. Such an effort would ideally be undertaken in any event in order to improve the understanding and financial capability of workers that will have beneficial long term effects beyond the pension system. The current crisis can

provide the impetus for such an effort and creates an ideal opportunity for it to be effective as workers are more attentive to financial issues.

- *Establishing a framework for phased or deferred annuitization or the alternative of receiving benefits through phased withdrawals on reaching retirement age.* This is important for those funded schemes with mandatory annuitization. As discussed above, the individuals most at risk from the rapid decline of asset values are those very close to retirement who potentially lock in the large declines when they convert their savings into an annuity. Allowing for phased withdrawals and the gradual purchase of annuities can enable individuals to realize the effects of an eventual recovery by not requiring the liquidation of invested assets until their value has some time to recover.
- *Considering a limited and time-bound support program for the small group retiring in the midst of the crisis that will be most affected.* Indeed, there are some, primarily, low income workers with lower saving levels who might, even under a phased annuity purchase or withdrawal program, be required to liquidate their diminished accounts in the short term. This group could be assisted through programs that offer a minimum return guarantee, analogous to what has been provided in the banking system in response to the crisis. This help should be accessible only to people close to retirement and targeted by level of income. The principle would be to compensate individuals facing a major decline in *net* replacement rates. Such an effort would then be phased-out as the recovery reaches certain trigger points. In all cases, however, the opportunity costs and distributional effects of the public resources involved should be carefully assessed.
- *Helping pay-as-you-go systems to remain financial viable and protecting the benefits of low-income workers.* As suggested above, in many cases the government may need to provide additional financing for public pension schemes to replace a decline in the collection of workers contributions. Government could also consider options to maximize protection of low income workers facing declining salaries by offering flat-rate minimum pensions and full indexation of

benefits. Any such effort should bear in mind, however, that many pay-as-you-go pension systems cover only the wealthiest minority of the labor force and that such support could come at the expense of other more vulnerable groups not covered by the formal pension system.

- *Reconsidering the valuation rules applicable to pension fund assets in the context of the extreme current volatility in financial markets.* There has been a current (and largely beneficial trend) toward requirements for mark-to-market valuation of the assets of all types of financial institutions including pension funds. While this generally increases transparency and the value of disclosure there may be circumstances, such as the current crisis, in which it proves to be counterproductive. Regulators and supervisors (as some have already done) may consider relaxing these rules to smooth presented valuation when extreme short term price movements occur. Some smoothing in periods of extreme volatility more accurately reflect the true underlying values and avoid the possible adverse reactions to large changes that prove to be very short term.

### Medium-term responses

The financial crisis provides a strong impetus for all countries to review the design and implementation of policies to best achieve the core objectives of retirement systems. It particularly highlights the value of diversification in the overall system design and the need to effectively manage the risks associated with funded arrangements. Over the medium term, attentions should be given to the following issues:

- *Better diversifying the management of financial and other macroeconomic risks.* The financial crisis strengthens the case for a multi-pillar pension system, which can be highly resilient in the face of even severe financial and economic turbulence. The multi-pillar system would incorporate elements of a well targeted social pension or minimum guaranteed benefit (a zero pillar) to ensure broad protection against poverty; a sustainable earnings based first pillar, and funded second pillar. The three operating together would provide core benefits to the broad population even during the low points of

the economic cycle. Key questions for governments will be: (i) how to set the level of the basic pension and its eligibility conditions to; and (ii) how to allocate the contribution rate between the first pillar (more exposed to labor market risks) and second pillars (more exposed to financial risks).

- Improving the management of *financial risks*. For the funded (second and third) pillars, the crisis should prompt renewed attention on the importance of well developed risk management and governance standards and integrating these into the regulation and supervision of pension funds. In addition, mechanisms to better shield retirees from the impact of account fluctuations immediately before retirement should be explored. These could include the introduction of age based/life-cycle portfolios which require low and middle income workers to switch part of their balances to less risky investments as they get closer to retirement. Default age- and earnings-related asset allocations are also important in light of the observed inertia of contributors.
- *Making pay-as-you-go systems more sustainable, robust and secure*. For the first pillar, countries should consider the adoption of Notional Defined Contribution schemes where benefits are linked to contributions and life-expectancy at retirement. Ideally, these systems would incorporate a reserve fund and an appropriate balancing mechanism to adjust to demographic and economic developments.

At the minimum, countries with traditional defined-benefit systems should introduce changes in benefit formulas and eligibility conditions to: (i) gradually incorporate all salaries in the calculation of the pension, with past salaries indexed by the growth rate of the average covered wage; and (ii) link the calculation of the accrual rate to the retirement age and the contribution rate. If these two measures are adopted countries can also consider the automatic indexation of pensions.

- *Having a well designed zero pillar where affordable and justifiable*. A well-designed zero pillar or the incorporation of a minimum pension guarantee into one of the other pillars can mitigate the

effects of future economic volatility on the vulnerable elderly and lifetime poor. These systems need to be carefully designed to ensure their affordability and that they do not have negative incentive effects

- *Integrating unemployment savings and insurance options into an overall social insurance system*. Pension systems can become de facto unemployment insurance systems in period of economic disruptions as workers losing their jobs seek to claim retirement or disability benefits when other alternatives are not available. Some countries need to consider stronger restrictions on disability claims and early retirement, while strengthening the income-protection systems for workers who lose their jobs. Policy options include combinations of unemployment insurance and unemployment individual savings accounts that can be accessed during spells of unemployment.

## Conclusions and recommendations

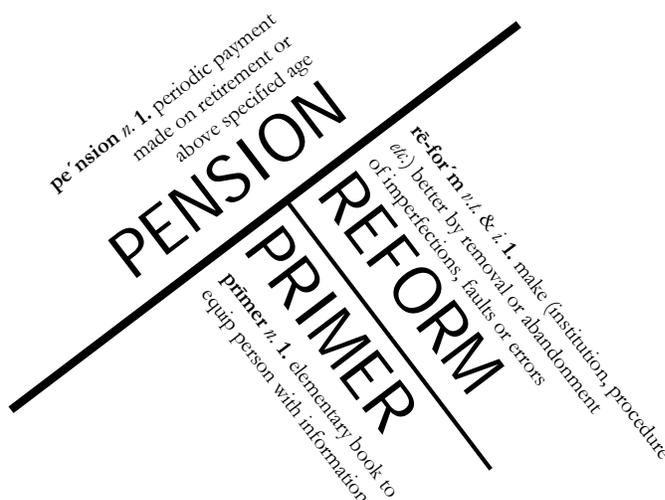
- The impact of the financial crisis extends beyond immediate losses to pension fund assets.
- Abrupt policy changes in response to the immediate circumstances should be avoided. Pension systems are designed to function over very long time periods. Short term responses to relatively rare circumstances can potentially have negative long term consequences on the capacity of pension systems to reliably provide adequate levels of retirement income.
- Measures to mitigate the affects on the relatively small number of retiring individuals can be considered without fundamentally altering the system design.
- The current crisis strengthens the need for diversified multi-pillar pension systems that are able to manage risks and provide protection to individuals who may be vulnerable to the kind of economic shocks now being experienced.
- Increasing attention should be paid to managing the exposure of individuals to short term financial risks in funded systems through portfolios designed for workers nearing retirement age and the development of phased transitions to the payout of benefits that limit the impact of shorter term financial volatility

## Further reading

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## Annex

*Pension systems in Eastern Europe and Central Asia*

Country	% Wage to Funded Scheme	Proportion of total Contribution to Funded Scheme	Year Funded Scheme Started	Participation in Funded Scheme	Year Funded Participants Retire
Bulgaria	5%	21.7%	2002	Mandatory <42	Full cohorts in <b>2023</b>
Croatia	5%	25.0%	2002	Mandatory <40, Voluntary 40-50	Partial cohorts of women by <b>2008</b> and of men by <b>2013</b> ; full cohorts of women by <b>2022</b> and of men by <b>2027</b>
Estonia	6%	20.0%	2002	Voluntary	Partial cohorts by <b>2012</b>
Hungary	8%	23.9%	1998	Mandatory new entrants; voluntary for all others	Partial cohorts by <b>2008</b> ; full cohorts by <b>2035</b>
Kazakhstan	10%	100.0%	1998	Mandatory for all	Full cohorts by <b>1999</b> but acquired rights in old system in addition
Kosovo	10%	100.0%	2002	Mandatory for <55	Full cohorts by 2012
Latvia	8%	24.0%	2001	Mandatory <30, Voluntary 30-50	Partial cohorts by <b>2013</b> ; full cohorts by <b>2033</b>
Lithuania	5.5%	22.0%	2004	Voluntary	Partial cohorts by <b>2014</b>
Macedonia	7.42%	35.0%	2006	Mandatory for new entrants	Partial cohorts by <b>2016</b> ; full cohorts of women by <b>2043</b> and of men by <b>2045</b>
Poland	7.3%	26.1%	1999	Mandatory <30; Voluntary 30-50	Partial cohorts of women by <b>2009</b> and of men by <b>2014</b> ; full cohorts of women by <b>2029</b> and of men by <b>2034</b>
Romania	2%, increasing to 6%	6.7%	2008	Mandatory <35; voluntary 36-45	Partial cohorts of women by <b>2023</b> and of men by <b>2028</b> ; full cohorts of women by <b>2033</b> and of men by <b>2038</b>
Russia	6%	30.0%	2002	Mandatory for <35	Full cohorts of women by <b>2022</b> and of men by <b>2027</b>
Slovak Republic	9%	31.3%	2005	Voluntary for all	Partial cohorts by <b>2015</b>

Source: Regional Bank Staff

*Pension systems in Latin America and the Caribbean*

	National Scheme		Contribution Rates (Main system)			% of contributions to funded scheme	% of workers in funded scheme
	Includes funded scheme?	"True Multipillar" <sup>(1)</sup>	Employee	Employer	Self Employed		
Bolivia	Yes	No	12.2%	0.0%	12.20%	100.0%	100.0%
Brazil	No	--	8-11%	20.0%	20.00%	--	--
Chile	Yes	No	12.5%	0.0%		100.0%	96.0%
Colombia	Yes	No	7.8%	23.3%	31.00%	50.0%	56.0%
Costa Rica	Yes	Yes	2.5%	4.8%		0.0%	100.0%
Ecuador	No	--	6-9%	1-3%	6.60%	--	--
El Salvador	Yes	No	6.0%	7.0%		100.0%	98.0%
Guatemala	No	--	1.8%	3.7%	5.50%	--	--
Haiti	No	--	6.0%	6.0%		--	--
Honduras	No	--	1.0%	2.0%		--	--
México	Yes	No	2.7%	6.3%	9.00%	72.2%	100.0%
Nicaragua	No	--	6.3%	15.0%		--	--
Panamá	Yes	Yes	7.5%	3.5%	11.00%	68.2%	n/a
Paraguay	No	--	9.0%	14.0%		--	--
Peru	Yes	No	13.0%	0.0%		100.0%	72.0%
Rep. Dominican	Yes	No	2.9%	7.1%		100.0%	93.5%
Uruguay	Yes	Yes	15.0%	7.5%	15.00%	50.0%	43.0%
Venezuela	No	--	1.9%	4.8%		--	--

1/ Workers in the funded scheme also participate in a pay-as-you-go pillar.

Source: Regional Bank Staff based on Mesa Lago (2008), FIAP (2008), and Goldschmit (2008).