The retrenchment of second-tier pensions in Hungary and Poland: A precautionary tale

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Abstract In 1997, Hungary and Poland led Central Europe in partially privatizing their national pension systems, diverting a portion of public pension contributions to privately-managed individual investment accounts. In the aftermath of the global economic crisis, both governments retrenched these second-tier schemes: Hungary (December 2010), by ceasing to fund the accounts and recouping most workers’ existing balances; and Poland (April 2011), by reducing the diversion of contributions to the second tier. The factors that drove these retrenchments are traced to the original 1997 second-tier designs, which omitted key specifications related to financing the accounts, private benefit design, and the regulation of private management fees. While both governments tried to compensate for the missing design specifications during implementation, the results were limited. By reducing investment returns and raising borrowing costs, the global economic crisis brought the problems to a head. The conclusion highlights some outstanding issues whose resolution will shape the retrenchments’ long-term impacts.

Keywords pension scheme, privatization, social security reform, Hungary, Poland, Europe

Introduction

In the late 1990s, the Hungarian and Polish governments redirected a portion of public pension contributions to individual investment accounts, to be managed by
private agents. Under laws enacted in 1997 and implemented in 1998 (Hungary) and 1999 (Poland), all new labour-force entrants were required to invest in these accounts. Both governments projected that account balances would be converted to annuities at retirement to supplement workers’ public, pay-as-you-go (PAYG) pensions. At the time, the World Bank was actively promoting pension restructuring along these lines across Central Europe, citing similar systems in Latin America, especially Argentina, as relevant models (Vittas, 1997). After Hungary and Poland took action, other governments followed in rapid succession. Among the ten Central European states that have joined the European Union (EU), only Slovenia declined this type of pension restructuring. Two aspiring EU member States, Croatia and the Republic of Macedonia, created mandatory, privately-managed investment accounts as well (see Table 1).

In the aftermath of the global economic crisis, several of these same countries have reduced, suspended, or cancelled transfers to their second-tier accounts, or made participation optional for workers (see Table 2). Hungary and Poland are again in the lead. In December 2010, the Hungarian government repealed the 1997 law that authorized privately-managed accounts and recouped most workers’ existing account balances. In early 2011, Poland reduced by two-thirds the contributions diverted to its second tier. Both of these retrenchments are permanent, in contrast with the temporary cutbacks so far made in other Central European countries. Thus, the countries that led Central Europe in establishing privately managed accounts have, in recent years, retreated farthest from these reforms.

This article describes these retrenchments and the economic and political developments that led to them. The next section provides background on the Hungarian and Polish second-tier laws, identifying the provisions that would weigh most heavily on implementation. We then trace key events during the years between enactment (1997) and the onset of the global economic crisis in October 2008. A description of the retrenchments in Hungary and Poland follows, focusing on the period October 2008 through 2011. A concluding section compares the retrenchments, identifying economic and political features of the countries that help to explain their approaches.

1. In Poland, workers up to age 30 were also required to participate.
2. The Czech Republic is an exception to this regional trend. In the 1990s and 2000s when its neighbours were enacting second tiers, it resisted this approach. Then in 2009-2011, as many of its neighbours were retrenching their schemes, it enacted legislation. The bill was highly controversial. It was passed by the First Chamber of Parliament, and then rejected by the Senate; but this was overridden by a subsequent First Chamber vote. The President then declined to sign it, but after 15 days it was deemed signed under the Czech Constitution and published in the Government register on 28 December 2011. If the law is not amended or repealed, the second tier may be launched as early as 2013. Like the Lithuanian system (see Table 1, Note 2), the new Czech law calls for optional worker participation in the second tier, but once in, workers cannot leave (IPE, 2012).
3. The diverted contributions will rise modestly in future years. See Table 2.
In general, the analysis shows that the global economic crisis was a trigger for second-tier retrenchment, but not a root cause. Rather, when the crisis occurred, both second tiers were experiencing difficulties due to three missing or incomplete design features:

- Second-tier investment accounts were funded by diverting contributions from the public pension systems. This created large and sustained holes in public pension finance. To fill them, both governments resorted to annual borrowing.
- Missing or incomplete design specifications for second-tier benefits created prolonged uncertainty about how private pensions would be calculated, paid and adjusted over time.
- Limited regulation of private management fees gave pension management companies latitude to subtract large sums from workers’ accounts.

During the first decade of implementation, both governments tried to mitigate the effects of the missing or incomplete design specifications, but the results were mixed and the difficulties did not disappear. Over time, their seeming intractability diminished the support of key pension scheme constituents. By reducing second-tier investment returns and raising the costs of borrowing, the global economic crisis brought these problems to a head.

As the retrenchments are in progress, the analysis makes no effort to assess their impacts. It instead poses questions whose answers are likely to shape long-term

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hungary</td>
<td>1998</td>
</tr>
<tr>
<td>Poland</td>
<td>1999</td>
</tr>
<tr>
<td>Latvia</td>
<td>2001</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>2002</td>
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<tr>
<td>Croatia</td>
<td>2002</td>
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<tr>
<td>Estonia¹</td>
<td>2002</td>
</tr>
<tr>
<td>Lithuania²</td>
<td>2004</td>
</tr>
<tr>
<td>Slovakia</td>
<td>2005</td>
</tr>
<tr>
<td>Republic of Macedonia</td>
<td>2006</td>
</tr>
<tr>
<td>Romania</td>
<td>2008</td>
</tr>
</tbody>
</table>

¹ Estonia required workers in the second tier to contribute an additional 2 per cent of covered earnings.
² The Lithuanian second tier has both mandatory and voluntary features: joining it is optional, but once in, a worker cannot cease contributing.

Sources: Holzmann, McKellar and Repanšek (2009, Figure 2.2) and Fultz (2003; 2006).
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Table 2. Recent changes in second-tier accounts of Central European countries

<table>
<thead>
<tr>
<th>% of covered earnings diverted to second tier</th>
<th>State mandate for worker participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous rate</td>
<td>Adjustment</td>
</tr>
<tr>
<td>Hungary 8%</td>
<td>Reduced to zero for 14 months (November 2010); made permanent (December 2011)</td>
</tr>
<tr>
<td>Poland 7.3%</td>
<td>Reduced to 2.3% (2011), rising to 3.5% in 2017</td>
</tr>
<tr>
<td>Estonia 6%</td>
<td>Suspended (June 2009-Dec. 2010); restored to 3% (2011) Planned increase to 6% (2012) and 9% (voluntary) depending on GDP growth (2014-2017)</td>
</tr>
<tr>
<td>Latvia 8%</td>
<td>Reduced to 2% (2009) Planned increase to 6% in 2013 if economic conditions permit</td>
</tr>
<tr>
<td>Lithuania 5.5%</td>
<td>Reduced to 2% (2009) and 1.5% (2011)</td>
</tr>
<tr>
<td>Romania 2%</td>
<td>Frozen at 2% (May 2008-March 2010); raised to 2.5% (March 2010)</td>
</tr>
<tr>
<td>Slovakia 9%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

1 Under the previous law, the rate had been scheduled to rise to 10 per cent in 2010.  
2 In 2010, a reduction was proposed by the Slovak Academy of Sciences.  

results. Key among these are whether the retrenchments will lead to a period of stability or further amendments; whether the private pension management companies can survive and thrive without state-mandated worker participation (Hungary) and with deep cuts in their revenues (Poland); and the extent to which other Central European governments that have so far made temporary cutbacks in their second tiers will follow Hungary and Poland in adopting permanent retrenchments.

The road to change: Policy development and legislation

In the late 1990s, Hungary and Poland became the first countries in Central Europe to put in place, alongside their public pension systems, mandatory
individual retirement accounts to be managed by private companies. What prompted these governments to require workers to place a portion of their pension contributions under private management has been the focus of much analysis. Pension literature commonly cites three factors (Augusztinovics et al., 2002; Chłon-Dominczak, 2002; Müller, 1999; James and Brooks, 2003; Orenstein, 2005).

First, after the breakup of the Soviet Bloc, both governments were committed to shifting from managed to market economies, and private pensions were seen by large segments of both populations as consistent with these efforts. Second, many citizens regarded the pension systems inherited from the socialist period as excessively redistributive; and distrust of state institutions, including the public pension agencies, was a widespread phenomenon. Third, both governments were heavily indebted to international financial institutions (IFIs), which sought to influence national economic and social policies. In particular, the World Bank advocated pension privatization as a means to increase national savings, develop financial markets, and avert a pension financing crisis as populations aged (World Bank, 1994; Bokros and Dethier, 1998, p. 210 and p. 213). While all these claims subsequently came under challenge, they provided appealing rationales for pension privatization in Central Europe in the mid-1990s.

Policy deliberations in Hungary and Poland moved forward on parallel tracks (Fultz, 2002, pp. 13-14). In the mid-1990s, with financial and technical support from the World Bank, the finance ministries in both countries developed proposals for privately-managed investment accounts. The two ministries with traditional responsibility for pension policy (the labour ministry in Hungary and the welfare ministry in Poland) developed competing proposals that modernized the pension systems inherited from the Soviet period without substituting privately-managed accounts (Fultz, 2002, p. 14; Chłon-Dominczak, 2002, p. 110). In the two countries, this competition resulted in prolonged stalemate. In the end, both governments opted for the finance ministry proposals. To avoid opposition, the governments pushed the authorizing legislation through their respective parliaments quickly. This legislative rush left major issues unresolved, or addressed on the basis of only brief consideration:

- Neither law specified the source of revenues to be used to cover the full transition costs of moving from PAYG pension financing to capitalized investments.
- The laws left important details of the second-tier benefit packages undefined, as was the case in Poland, or defined in ways that satisfied public expectations but could not be easily implemented in private markets, as in Hungary.
- The laws left largely to market forces (i.e. unregulated) the fees that private funds could charge workers for managing their investments.

The following paragraphs elaborate on these omissions.
The shortfall in public pension finance

In each country, in order to fund the new accounts, the relevant legislation diverted to them a portion of public pension contributions (see Table 3). This diversion required finding additional revenues to pay public benefits to both current and future pensioners who had acquired pension rights as of the date of enactment, or to cut these entitlements. The missing revenue was significant, amounting to 20 to 25 per cent of annual pension contributions, and the shortfall would continue for 40 to 50 years.

While projections of these shortfalls were available at the time in both government and World Bank documents, public policy deliberations made few references to them. Political economy studies attach high importance to this omission. Simonovits, for example, characterizes transition costs in Hungary as “grossly underestimated or ignored” (2011, p. 94), while Müller notes that limited awareness of transition costs gave Hungarian and Polish workers an “asymmetric perception” of the new, privately-managed systems, that is, greater awareness of their potential advantages than of their costs (1999, p. 162).

In Hungary, the 1997 law included a future cut in cost-of-living increases that would partially offset this revenue loss, but left a substantial shortfall.4 In Poland, the law required allocation of revenues from the sale (privatization) of public assets to compensate for part of the public pension shortfall resulting from the second tier. However, this covered only five years out of a half century of annual losses (see Figure 1). The Polish government stated that the remaining gap would be closed by public pension cuts, but these were not made in the 1997 law.

Thus, from the start, both new mixed pension systems were dependent on future government actions — benefit cuts, increased contributions or taxes, or borrowing — that were not widely understood by the populations.

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Table 3. Public pension financing shortfalls resulting from diversion of contribution revenues to second-tier, individual investment accounts

<table>
<thead>
<tr>
<th></th>
<th>Pension contributions diverted</th>
<th>Resulting annual shortfall to public pension system</th>
<th>Duration of shortfall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hungary</td>
<td>6% out of 28%, rising to 8%</td>
<td>0.8%-1.4% of GDP</td>
<td>43 years</td>
</tr>
<tr>
<td>Poland</td>
<td>7.3% out of 36.59%</td>
<td>1.48%-2.2% of GDP</td>
<td>Over 50 years</td>
</tr>
</tbody>
</table>

Sources: Müller (1999), Rocha and Vittas (2001), and Chlon-Dominczak (2002).

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4. This was achieved by a shift from wage indexation to the so-called Swiss indexing method, which adjusts pensions by wages and prices in equal measures.
The hybrid status of the second tiers — i.e. public laws requiring workers to place retirement savings in private investment funds — made formulation of the legal benefit requirements challenging. By mandating worker participation, the governments assumed responsibility for sound and fair administration, not only in the accumulation phase but during benefit payouts (retirement). In both Hungary and Poland, parliamentary majorities insisted that the private benefits include i) regular pension adjustments, and ii) equal treatment of women and men. The latter was interpreted to mean that women and men who had accumulated identical account balances during their careers and retired at the same time would receive equal monthly benefits.5

5. Because women as a group live longer than men as a group, this would require a cross-subsidy from men to women. Public pension schemes typically provide such cross-subsidies, but few private funds do so (Fultz, Ruck and Steinhilber, 2003).
However, private funds face problems in providing these benefit features. Unlike governments, they cannot raise contributions to meet benefit obligations arising from unanticipated inflation. If they cross-subsidize the benefits of some categories of members (e.g. women), they face the risk that those members from whose accounts they finance the cross-subsidy (e.g. men) would switch their membership to another fund.

However, governments can create conditions that make it easier for private funds to satisfy such mandates. To enable them to provide regular cost-of-living adjustments, governments can issue bonds indexed to inflation. (This would effectively shift the risk of high inflation from the private funds to taxpayers.) To enable private funds to deliver gender-neutral annuities, governments can create and enforce a system of financial transfers from those funds with disproportionately few women to those with disproportionately many. Alternatively, governments can create or mandate a single national annuity provider, which would face virtually no risk of a gender imbalance.

In 1997, the Polish parliament recognized these complexities and, in its rush to legislate, deferred action on the benefit package proposed by the government, passing only those provisions that dealt with account accumulation. At the time of passage, it stated that the benefit package would be defined later.

The Hungarian law set benefit parameters that reflected policy-makers’ preferences but were not consistent with pension industry practice. Namely, it required that annuity providers calculate private pensions using gender-neutral life expectancy tables, thus giving women and men with equal account balances equal monthly pensions. It also required regular cost-of-living adjustments, computed in the same way as public pensions. At the time, this was the Swiss method, which based adjustments on annual wage and price increases in equal proportions.

While these were attractive benefit guarantees for workers, the law omitted important details. Namely, it did not address the risk that private annuity providers would respond to competitive pressures by finding subtle ways of avoiding women (with longer average life expectancy). Without any bonds on the Hungarian market (or anywhere) that would enable the funds to hedge against unknown future price and wage increases, the government offered no support for private funds to provide Swiss indexing.

Given these omissions, both laws would need major amendments in advance of the legally-mandated inception of benefit payments — in Hungary 2013, and in Poland 2009.

**Private management fees**

Neither law anticipated that private management fees would significantly erode workers’ account balances. In both countries, advocates of pension privatization
argued that workers’ ability to switch funds would encourage market competition and thereby hold fees in check. In Hungary, the statute included no fee limits. The Polish statute allowed private funds to deduct fees both from workers’ monthly contributions and from their accumulated account balances. An annual cap of 0.6 per cent of assets (or 0.05 per cent per month) was set on the latter, but no legal limits were imposed on fees taken from monthly contributions (Chłon-Dominczak, 2002, p. 130).

At first glance, 0.6 per cent may seem like a low ceiling. However, applied year after year to accumulated assets, a seemingly low charge can reduce the final balance substantially. As a benchmark, an asset fee of just 1 per cent can reduce a worker’s account balance over a working career by about 20 per cent (Barr, 2011, p. 19).

Cracks appear: Second-tier implementation

The three legislative omissions just described had a profound impact on implementation. This section traces what occurred with respect to each of them during the years between enactment (1997) and the onset of the global economic crisis (October 2008).

The shortfalls in public pension finance caused by partial pension privatization turned out to be larger than projected and, to provide the missing revenues, both governments resorted to borrowing, thereby inflating public deficits. In Hungary, six months after the 1997 law became effective (January 1998), the government that had enacted it — the Hungarian Socialist Party (MSzP) — was replaced by the Federation of Young Democrats, known as Fidesz. While in opposition, Fidesz had argued against the establishment of second-tier accounts, in part due to the high transition costs. After taking office, it expressed alarm at the large hole in public pension finance and threatened to repeal the new law (Rocha and Vittas, 2001, p. 1). While it did not follow-up on this threat then, it did restrict the scope of the second tier by i) repealing the planned increase in contributions (from 6 per cent to 8 per cent) diverted to it, ii) allowing workers who had joined to withdraw (few workers exercised this option); and iii) in 2002, making the second tier optional for new labour-market entrants.

In 2003, the MSzP returned to power and reversed most of these curtailments. It also initiated an additional “13th month” public pension benefit to be paid just before Christmas. This increased the public pension deficit and, with it, the government’s need to borrow annually to make pension ends meet (Gál, 2010, p. 8).

6. It terminated the workers’ option to leave the second tier, and again made private accounts mandatory for new labour-market entrants. It also increased the diversion of contributions to the second tier from 6 per cent to 8 per cent of covered wages.
In Poland, during 1997-2004, the planned cuts in public pensions were not enacted. In 2005, the government introduced pure price indexation as part of an austerity plan, but three years later restored partial wage indexation. Similarly, it twice set deadlines for withdrawing the early retirement option (2005 and 2007), but in both cases postponed action as elections approached. To fill the hole in public pension finance created by diverting contributions to second-tier accounts, it too resorted to borrowing. The amounts borrowed grew steadily from 0.3 per cent of GDP in 1999 to 1.5 per cent in 2008 (IMF, 2011, p. 11).

Meanwhile, the accession of both countries to the European Union in 2004 brought them under the EU’s Maastricht criteria, which prohibit member States from running budget deficits exceeding 3 per cent of GDP or holding public debt exceeding 60 per cent. With annual public pension shortfalls stemming from the implementation of the 1997 laws equalling about 1.5 per cent of GDP, Hungary and Poland were using half the EU’s allowed deficit to meet the transition costs of partial pension privatization. Soon after being admitted to the EU, Poland, joined by Hungary and several other Central European countries, petitioned the European Commission (EC) to exempt this borrowing from the Maastricht limit.

After debating this issue, the EC declined this request, but it also gave the petitioning countries a reprieve, allowing them to recognize the transition costs of partial pension privatization progressively, over a period of five years (Velculescu, 2011, p. 12). Since public pension shortfalls were projected to continue for another four decades, this relief was short-lived.

The unfinished private benefit packages remained so. In Hungary, during the first decade of implementation, the government did not revise the 1997 benefit provisions, nor did it take any actions to make it easier for private annuity providers to deliver the required benefits. In December 2005, the World Bank went public in recognizing the mismatch of these requirements with pension systems based on private market competition and called for a “complete overhaul” of the Hungarian benefit package (World Bank, 2006, p. 49). Meanwhile the legal deadline for initiating private benefit payments (2013) was drawing closer.

In Poland, where the 1997 law included no benefit provisions, the government put the issue on the legislative agenda for 2004-2005 and charged a group of civil servants with developing policy options (Naczyk, 2010, p. 7). However, a controversy broke out over whether pensions should be provided by competing private funds or a single national entity. The latter could avoid discrimination against women (with longer average life expectancy), as well as capturing greater economies of scale than multiple

7. The debt criterion included more leeway, calling for “satisfactory movement” downwards toward the 60 per cent ceiling.
8. That is, the government neither issued inflation indexed bonds, nor put in place a system of financial transfers to protect the funds from high costs resulting from a disadvantageous gender balance.
funds. However, the Polish Association of Pension Funds weighed in heavily for the former, and no action was taken. In 2006, a new government coalition developed a plan to authorize the private funds to pay benefits, but in competition with a public option.\(^9\) However, this coalition too was short lived, and the proposal was not sent to parliament.

Thus, at the onset of the global economic crisis (October 2008), Hungary still lacked a workable private benefit package and Poland had no private benefit specifications at all.

**Private funds charged workers substantial fees for their investment services, and government initiatives to regulate fees produced only modest reductions.** During 1999, Hungary’s second-tier funds as a group charged workers 7.1 per cent of the aggregate contributions they managed (World Bank, 2006, p. 19), while Poland’s mandatory funds subtracted as fees 8.6 per cent of all the worker contributions they received (Naczyk, 2010, p. 5).\(^{10}\) Thus, for a worker’s investment account to increase that year, he or she would have had to earn unlikely returns, exceeding 7 to 8 per cent.

These fees did not provoke calls for government regulation immediately, however. Such proposals gained momentum only gradually, as evidence accumulated of broader difficulties with the new private markets. There were three types of evidence.

First, a few private funds quickly captured the majority of individual accounts. In Hungary, by 2001, 80 per cent of second-tier participants belonged to just five out of 21 funds (Augusztinovics et al., 2002, p. 67). In Poland in that same year, the three largest of 21 funds had captured nearly 60 per cent of all members (Chłon-Dominczak, 2002, p. 179).

Second, private funds in both countries invested the bulk of workers’ contributions in public, rather than private, instruments. In Hungary, through 2005, government bonds made up more than 70 per cent of total second-tier assets (Rudolph, 2011).\(^{11}\) In Poland, the figure fluctuated over the decade around 60 per cent (Chłon-Dominczak, 2002, p. 186). These investment patterns were not what most workers expected from privately-managed accounts. Critics raised the obvious question, why are the funds charging such high fees for the administratively simple act of purchasing a government bond?

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9. Since private funds faced a disincentive to enrol women, large numbers of women would have probably enrolled with the public provider. This would have raised its costs relative to private providers. Thus, the competition that was expected was unlikely to materialize.
10. In addition, Polish funds levied fees on accumulated assets. The 1997 law regulated such fees, limiting them to 0.6 per cent of assets per year. In 1999, however, the first year of second-tier implementation, these fees generated only limited revenues due to the small asset base.
11. As the Hungarian government began to experience difficulties financing its debt, fund managers reduced bond holdings to 55 per cent of assets.
Third, real (after inflation) investment returns were negative. It is rare to find reports of negative returns in the funds’ public reports, since they typically calculate returns on the balances that are left after they subtract fees. However, when all fees are counted and returns are measured in real terms, both second tiers incurred losses in the aggregate during the first five to six years of operation (see Table 4).

In 2003, the Polish government developed a proposal to i) cap upfront fees levied against monthly contributions, and ii) lower the existing legal limit on fees levied against accumulated assets (then 0.6 per cent per annum). The second-tier funds resisted, leading to a period of negotiation and compromise. Under the final law, previously unregulated fees withheld from monthly contributions were capped at 7 per cent. After eight years, this cap would decline, reaching 3.5 per cent in 2014 (Naczyk, 2010, p. 5). The existing asset fee limit of 0.6 per cent per year was reduced to 0.45 per cent. As a reward for high investment returns, an additional charge of up to 0.05 per cent was allowed for the best performing funds.

In 2008, eleven years after it passed its second-tier law, Hungary too restricted private management fees. The 2008 law set limits on fees of 4.5 per cent of monthly contributions, and 0.8 per cent on accumulated assets annually. The impact of the first limit is easy to discern, while the second is less transparent. As a point of comparison, it is worth reiterating Barr’s assessment that a 1 per cent asset fee can be expected to reduce a worker’s account balance by about 20 per cent over his or her working career (2011, p. 19).

Retrenchment

The global recession that began in October 2008 had two major impacts on the second tiers. First, it caused the value of worker accounts to fall. By the close of 2008, aggregate second-tier values had dropped by 21 per cent in Hungary and

\[\text{Table 4. Rates of return for Hungarian and Polish second-tier accounts, compared to national inflation rates}\]

<table>
<thead>
<tr>
<th>Period</th>
<th>Average investment return</th>
<th>Rate of inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hungary 1998-2004</td>
<td>3.75% per year, average</td>
<td>6.6% per year, average</td>
</tr>
<tr>
<td>Poland Dec. 1999-June 2004</td>
<td>20.3% for entire period</td>
<td>24% for entire period</td>
</tr>
</tbody>
</table>

1 The return rates are computed as the ‘internal rate of efficiency’, that is, the interest rate that would have produced the closing capital if the contributions had been in an interest-bearing account over the period (Augusztinovics et al., 2002, p. 80).

12 To illustrate, assume that a fund receives USD 100 on behalf of a worker each month. Upon receipt, it subtracts a membership fee of, say, 5 per cent, leaving USD 95 to invest. The annual rate of return is, say, 4 per cent. While the fund reports a 4 per cent return, the net change in the value of the worker’s account is negative.
17.7 per cent in Poland (OECD, 2009). In Hungary, workers approaching retirement were most attentive to these losses. To prevent social unrest, the government allowed second-tier participants born before 1957 to transfer their account balances back to the public system and receive a full public pension (Gál, 2010, p. 9).13

Second, after October 2008, both countries’ fiscal situations deteriorated. During 2008-2010, Hungary’s budget deficit increased from 3.7 to 4.2 per cent of GDP and its debt, from 72.3 to 80.2 per cent (Eurostat, undated). Meanwhile Poland’s deficit increased from 3.7 to 7.9 per cent of GDP and its public debt increased from 47.1 to 53.2 per cent.14

With high public debt and heavy economic dependence on exports, Hungary quickly was no longer able to meet its interest obligations and sought a financial bailout, leading to a EUR 20 billion (approx. USD 29 billion) package from the International Monetary Fund (IMF), EU and World Bank. The loan conditionalities included three major cuts in public pensions: the “13th month” pension was replaced by a pension bonus linked to economic growth; pension indexation was changed from the Swiss method (based on wages and prices in equal measures) to indexation primarily by prices; and the retirement age was increased from 62 to 65, to take effect over 2014-2022.

In Poland, with a population nearly four times that of Hungary, a larger domestic market, and lower national debt, the drop in international demand was less problematic. Moreover, a well-timed tax cut stimulated spending, helping Poland to avoid a recession in 2009 — a unique phenomenon in Central Europe. However, the tax cut inflated Poland’s 2010 budget deficit to nearly twice that of Hungary (7.9 versus 4.2 per cent) and raised Poland’s government debt close to the legal limit in its constitution (55 per cent).

These fiscal constraints placed both governments’ annual borrowing to fill the holes in public pension finance in tension with other priorities. In Hungary, the tensions were mainly with tax policy and the need for debt reduction. In early 2010, Fidesz returned to power, winning more than two-thirds (68 per cent) of the seats in parliament. Fidesz had campaigned on a platform to increase Hungary’s national autonomy and reduce its dependence on international financial institutions. After taking office, it quickly discontinued borrowing from the IMF, imposed a tax on (largely) foreign-owned businesses, and amended the constitution to prohibit the Constitutional Court from adjudicating fiscal issues. It also announced plans for a tax cut to stimulate the economy. Long opposed to the second tier, Fidesz officials were highly critical of its recent losses.

13. The option was provided in late 2009. Of the 123,000 workers who were eligible, 73,800 did so, increasing the public system’s revenues by approximately HUF 100.2 billion (approx. USD 554.3 million).
14. The latter calculation used the Polish legal methodology, which differs from the Eurostat debt calculation in excluding some categories of spending.
In Poland, with public debt approaching the constitutional limit, lawmakers sought to avoid across-the-board spending cuts that exceeding this limit would trigger. They also planned for entry into the eurozone, which necessitated bringing the deficit below the Maastricht limit (3 per cent of GDP). In Warsaw, pension cuts were on the table. The options included increasing the retirement age, curtailing subsidies to Poland’s pension fund for farmers (Agricultural Social Security Fund — KRUS), and reducing the diversion of contribution revenues to the second tier (IPE, 2011b).

Hungary was the first to take action. At the end of 2010, its new government passed three laws in rapid sequence. The first, enacted in October, made second-tier participation voluntary for new labour-market entrants and allowed all existing members to opt out. The latter option could be exercised only through to the end of 2011.

However, within weeks, the parliament suspended entirely the diversion of contribution revenues to second-tier accounts. This suspension was supposed to extend for 14 months — from November 2010 through December 2011. Together these laws were estimated to avoid a revenue loss of approximately HUF 420 billion (approx. USD 2 billion).

Then in December, the parliament enacted a third law that superseded the first two. It discontinued the second tier for new labour-force entrants and recouped most workers’ account balances. In principal, workers could keep their second-tier balances by declaring their wish to do so at one of Hungary’s 30 regional pension offices by 31 January 2011. However, there was a heavy penalty: those workers (and their employers) would have to continue contributing to the pension system, but contributions paid after 2010 would not count toward their public pensions.

While officials of the former MSzP government strongly criticized these actions, there was little opposition from other quarters. Stabilitas, the association of private pension funds, filed a lawsuit; but the Constitutional Court had been stripped of its authority to adjudicate fiscal issues and did not consider it. Thereafter, the funds made few public statements. Similarly, the banks and insurance companies that sponsored the funds said little publicly; and neither trade unions nor employers reacted in significant numbers. Of the approximately three million workers who had participated in the mixed pension system, just 100,000 — or 3 per cent — exercised the option to keep their account balances.

Hungary’s 18 private pension management companies were required to transfer second-tier account balances to the Pension Reform and Debt Reduction Fund by no later than 12 June 2011. In total, approximately HUF 2.95 trillion (approx. USD 15.6 billion) of the HUF 3.2 trillion (approx. USD 17 billion) — or 92 per cent — of assets under management were so transferred (IPE, 2011f). The government stated that it would refund any positive investment returns to the former members of the second-tier system, and those who had incurred investment
losses would be compensated (Simonovits, 2011, p. 93). To implement this policy, it required the private management companies to calculate real returns on each account and inform the Hungarian Pension Insurance Fund (PIF), which provided them with the needed revenues. Though the legal deadline for completion of this process was 31 August 2011, it has lagged behind schedule. Estimates indicate that the average refund will be approximately HUF 80,000, equivalent to about one month’s minimum wage (Budapest Business Journal, 2011).

Most of the remaining funds were used to reduce Hungary’s deficit. However, a portion also offset tax cuts passed in late 2010 (Simonovits, 2011, p. 93). In Poland, second-tier retrenchment was carried out by the centre right Civic Forum (PO), which had been in power in a coalition with the Polish Peasants’ Party (PSL) since 2007. Significantly, the latter benefitted less from the second tier than from Poland’s highly subsidized and largely unreformed pension system for farmers, the Agricultural Social Security Fund (KRUS). The Peasant Party membership included a key player in pension policy, the Minister of Social Affairs.

In Poland, public receptiveness to retrenching the second tier may have been heightened by media attention in the late 2000s to actuarial projections, including those by the EC and the International Labour Organization, showing that future wage replacement rates (both public pensions and the second tier) would decline considerably.

In early 2009, the Minister of Social Affairs campaigned to make participation in the second tier optional for workers. In November 2009, she joined with the Minister of Finance in proposing a reduction in the diversion of contributions to the second tier from the existing 7.3 per cent of covered wages to 3 per cent, with the difference going to the Social Insurance Institution (ZUS), the public pension agency (Financial Times, 2009). Subsequently, they withdrew the proposal under criticism. However, in late 2010, these discussions resumed with a new intensity and remained at the forefront of Polish politics into the early part of 2011.

On the side of retrenchment were the two ministers, plus the deputy prime minister, the economics minister, an opposition political party (Law and Justice Party), a trade union confederation (All Poland Alliance of Trade Unions — OPZZ), and self-employed farmers (IPE, 2011b). These proponents of retrenchment argued that creating the second tier had been a policy error. In a reversal of earlier arguments concerning demographic ageing, they portrayed the second tier not as a precautionary tale. A precautionary tale

15. The pension assets equal about 9 per cent of GDP. An amount equal to 5 per cent of GDP was used for deficit reduction, and the remaining 4 per cent to offset revenue losses because of tax cuts. Simonovits calculates that the first year revenue loss from the tax reform was approximately 2 per cent of GDP.

16. Close observers note that, as a result of this media attention, it has become clear to virtually everyone that future pensions will be lower and the weaknesses of the 1997 reform would have to be addressed. While the major target of such action would be the public pension system, this awareness may have also diffused opposition to the second tier retrenchment.
solution but rather as a burden in meeting Poland’s rising pension costs. They also criticized the second tier’s high management fees, and the newspaper *Gazeta Wyborcza* ran a series of articles calling attention to these changes (Naczyk, 2010, p. 13).

On the other side of the debate, second-tier retrenchment was opposed by a majority of Poland’s employer associations, a trade union (the centre right *Solidarność* — NSZZ), the Central Bank, the Warsaw Stock Exchange, the pension industry, and some economists (IPE, 2011b). They held that reducing the scale of the second tier would disrupt a major reform that was still in its early stages, reduce trading volume in stock and bond markets, and break an important promise made to workers in 1997.

The policy discussions featured a televised debate between the Minister of Finance, Jacek Rostowski, and a major architect of the 1997 law, Leszek Balcerowics. Both presented charts and graphs showing what they foresaw as the major economic consequences of cutting back the second tier (Economist, 2011).

In April 2011, the government enacted a large permanent cut in the contribution revenues diverted to the second tier. As a result, employees now contribute 2.3 per cent of their monthly covered wages (down from 7.3 per cent) to privately-managed individual accounts, with the 5 per cent difference allocated to new subaccounts in ZUS.17 The diversion to the second tier will start to increase modestly in 2013, stabilizing at 3.5 per cent in 2017, with contributions to the subaccounts decreasing proportionally. In contrast with Hungary, all of Poland’s second-tier accounts will continue to exist and will be funded with (reduced) pension contributions. The government projects that the retrenchment will reduce Poland’s need to borrow by around PLN 190 billion (approx. USD 69 billion) by 2020, and by around PLN 750 billion (approx. USD 272 billion) by 2060 (Bartyzel, 2011).

While Hungary and Poland were considering these retrenchments, they were again petitioning the EC for relief from the Maastricht criteria. In August 2010, they joined seven other Central European governments in asking the Commission to exempt their debt-financed second-tier transition costs from the EU’s official calculation of public deficits and debt. While the Commission agreed in December 2010 to grant Poland some form of relief, Hungary’s higher levels of public debt

17. The newly-created subaccounts are similar to the existing Notional Defined Contribution (NDC) accounts in Poland’s public pension system, except that they will be indexed according to the average of the previous five years’ nominal GDP growth (excluding any decline in GDP); and the accumulated savings will be inheritable upon the insured’s death (IPE, 2011a). This form of indexation was an important element of the political agreement to reduce the second tier, as it will ensure workers the same investment returns that they would have received if the second-tier funds had instead been invested in government bonds. It is a more generous method than current NDC indexing in Poland, which takes account of total wages in the economy on which contributions are paid. In future years, demographic ageing should cause the total wage bill to decline, but the new subaccounts will not be affected by this factor.
(which significantly exceeded the 60 per cent Maastricht limit) led the EU to deny its request.

However, this EC decision had no pragmatic impact in either country. In Hungary, the government had already announced that it would discontinue the second tier. In Poland, which was at risk of breaching the constitutional debt limit, the government proceeded with retrenchment despite the EC’s response.

While the retrenchments just described were the most significant government actions in the post-crisis period, they were not the only ones. Both governments also revisited the missing or incomplete private benefit laws, as well as the legal limits on second-tier management fees. The former proposals became bogged down in controversies similar to those that had thwarted previous efforts to define the benefit packages, and neither became law.18 However, the legal caps on management fees were lowered significantly. In Poland, the reduction scheduled to take effect in 2014 was advanced to January 2010. As a result, the ceiling on monthly management fees was reduced rapidly by half, from 7 per cent to 3.5 per cent. In Hungary, the same law that terminated the second tier also lowered fee ceilings, not only for existing second-tier accounts (that is, the 3 per cent of accounts whose members declined to surrender them) but also for voluntary, third-tier retirement accounts. Specifically, the ceiling on the annual asset management fee was cut from 0.8 per cent to 0.2 per cent, and the monthly management fee from 4.5 per cent to 0.9 per cent. The magnitude of these cuts has led some close observers to question the future viability of private retirement funds in Hungary (IPE, 2011a).

In December 2011, the government made the 14-month freeze on contributions to the second tier permanent (IPE, 2011g). Thus, the remaining 3 per cent of second-tier accounts will receive no further contributions. Following this announcement, several Hungarian funds announced plans to merge or cease operation.

Concluding discussion

The preceding pages traced the impact of three design features that were omitted or incomplete in the 1997 Hungarian and Polish second-tier laws: how the public pension systems would meet their benefit obligations without the revenues diverted to the second tiers, what benefits the second tiers would provide, and what level of

18. Specifically, in December 2009, the Hungarian Parliament approved legislation authorizing both inflation-adjusted private annuities and unadjusted annuities, but the new President declined to sign it. In November 2008, the Polish Parliament approved two bills to i) delay the start date for private annuities until 2014 (in the interim, a temporary law authorizes phased withdrawals from second tier accounts, to be administered by ZUS) and require gender-neutral annuity calculation, and ii) formulate other provisions of the private benefit package, effective 2014. The President vetoed the second bill, citing its failure to require inflation-adjusted annuities and the absence of an option for a public annuity provider (IPE, 2008).
fees private management companies could deduct from workers’ second-tier accounts. The account showed that during the first decade of implementation, these missing or incomplete design features posed common difficulties for the governments and, ultimately, led to retrenchments with important shared themes. However, the retrenchments were also shown to differ significantly, in both their immediate and future impacts. This section highlights these similarities and differences and considers their significance.

**Similarities**

*When the crisis occurred, both second tiers were experiencing growing difficulties in three areas.* This pattern is striking because it was the public pension systems — not the second tiers — that were experiencing financial imbalances as a result of the 1997 reforms. Moreover, before the crisis, some observers had argued that pension privatization would shield worker accounts from adverse political actions, making them more stable than public pension systems (Holzmann, 1998). However, this perspective does not take into account the impact of the second tiers’ missing design specifications. When the crisis occurred, both second tiers were experiencing growing difficulties due to these omissions.

First, both governments were borrowing annually to fill the holes in public pension finance caused by diverting contribution revenues to second-tier accounts, inflating annual budget deficits by about 1.5 per cent of GDP. Second-tier transition costs were projected to continue for another three to four decades.

Second, legislative proposals defining/refining private benefit packages were caught in a conflict between what most policy-makers favoured — gender-neutral benefit calculation and inflation-indexed annuities — and what private funds normally provide — gender-specific benefit calculation with little or no adjustment over time. As statutory deadlines for initiating benefit payments drew closer (2009 in Poland; 2013 in Hungary), this quandary continued to resist resolution.

Third, high private management fees had become a political issue. Both governments had responded to stakeholders’ discontent by limiting fees. However, the proposals had met with opposition, and the final legislation left space for private fund managers to continue to levy substantial fees.

Over the first decade of implementation, the governments’ inability or unwillingness to solve these problems weakened the support of key stakeholders. By making credit scarce and costly, the global economic crisis brought these problems to a head.

*The retrenchments reversed earlier government actions.* Just as in the late 1990s both governments redirected public pension contributions to privately-managed individual accounts, creating a hole in public finance, in 2010-2011, they redirected
that same stream of contributions from the private accounts back to public budgets, creating a hole in private finance. This symmetry is obvious when the second tiers are viewed historically, but it has been overlooked in some media commentary, which has labelled the retrenchments “raids,” “plundering,” or “government meddling in people’s personal finances” (Financial Times, 2009; IPE, 2011c; Economist, 2011). These characterizations may reflect the distress of the second-tier funds, which lost a national market (Hungary) or must scale down their operations (Poland). Yet while the difficulties are genuine, they are not unique to the second tier. Both the original laws and subsequent retrenchments created serious problems for the systems from which revenues were diverted — in the first instance, the public pension systems and, recently, the second-tier accounts. Clearly this method of financing was not conducive to the stability of either tier.

Policy deliberations gave little attention to demographic ageing. In the mid-1990s, proponents of pension privatization cited demographic ageing as a principle motivation for replacing PAYG pensions with individual accounts. Referencing the World Bank’s 1994 publication, *Averting the Old Age Crisis*, they held that the PAYG systems were unsustainable, while funded individual accounts would avoid a financing crisis as populations aged. In 2010-2011, by contrast, Hungarian discussions of second-tier retrenchment were essentially devoid of this theme; and in Poland high-level government officials characterized the second pillar as a “barrier” to dealing with the pension costs of demographic ageing. Strikingly, most opponents of retrenchment declined to raise the issue.19

This shift in the terms of debate may reflect the dissemination of new analyses of the economics of pension finance between 1997 and 2010-2011. In this period, many economists challenged the idea that changing the method of financing pensions could reduce the fiscal stresses of ageing (see, for example, Orszag and Stiglitz, 1999; Barr, 2000; Barr and Diamond, 2006). They pointed out that ageing will also affect financial markets, causing an increase in the ratio of sellers to buyers. With reduced market demand, retiring workers who sell their second-tier investments to purchase an annuity will receive less than they expected. Barr captured this point succinctly when he characterized the claim that “funding resolves adverse demographics” as a pension reform myth (2000, p. 5). A year later, Holzmann and Palacios (2001, p. 3) of the World Bank wrote that:

In the end, both [types of] schemes require a subsequent generation to fulfil the generational contract, either in the form of current contributions (in unfunded schemes) or through purchase of accumulated savings (in funded schemes). Money put aside for retirement alone does not change this fact . . .

19. In the English language press, only the trade union *Solidarność* is cited as making this argument.
As this point became more widely understood,\textsuperscript{20} the original rationale for the second tiers — i.e. that they would help to “avert an old age crisis” as populations aged — gradually receded from pension policy discourse. The second tiers had lost their ideological bulwark.

\textit{Differences}

\textbf{The contexts for retrenchment.} As discussed, Hungary experienced a major recession in 2009 and required an IMF/EU/World Bank bailout. Shortly thereafter, Hungarian voters replaced the ruling Socialist Party (MSzP) with Fidesz, whose election campaign had stressed restoration of national autonomy. Fidesz quickly ceased borrowing from the IFIs and planned large tax cuts to stimulate the economy. Discontinuing the diversion of contribution revenues to the second tier created fiscal space for these policies, as did recouping second-tier account balances.

Poland fared much better economically, owing to its stronger domestic market, lower government debt and well-timed tax cuts. In contrast with Hungary, there was no debt financing crisis, no need for an international bailout and no change of government. However, the tax cuts drove Poland’s national deficit far above the EU Maastricht criteria and caused its debt to approach the Polish constitutional limit. Thus, in 2010, with the worst of the global economic recession seemingly over, the existing government looked for ways to reign in public spending, including cuts in pensions. Among the options under discussion, it found reducing the diversion of revenues to the second tier most palatable.

\textit{Extent of public debate.} In neither country was retrenchment vigorously resisted by workers. In Hungary, this was also true of employers, second-tier funds, and the large international banks and insurance companies that sponsored them. Their failure to protest may be attributable to the government’s curtailment of the powers of the Constitutional Court, which closed off their legal remedies, and/or to their wish to avoid jeopardizing their relations on other issues with a powerful government.\textsuperscript{21}

Poland had both a broader debate and a more acrimonious one. As high-level government officials lined up on both sides of the issue, it was discussed at length in the media, including a high-level debate on primetime national television. This full

\textsuperscript{20} In fact, the World Bank’s 1994 publication, \textit{Averting the Old Age Crisis}, had recognized that “... increasing productivity is the only way that a smaller working population can support a larger retired population, regardless of which funding system is used” (p. 92). However, this point did not figure significantly in World Bank policy advice in Hungary and Poland, or in either country’s national discourse on demographic ageing.

\textsuperscript{21} One pension fund spokesman said: “Uncertainties about mandatory savings regulations could lead to extra demand for voluntary pensions, which could offer . . . opportunities for a further sales increase” (IPE, 2011d).
public airing stands in contrast not only with Hungarians’ near public silence on retrenchment but also with Poland’s own limited public reform debate prior to enactment of the 1997 law.

**The scope of retrenchment.** It is not surprising that these differences would lead to different policy outcomes. As shown, Hungary took swifter and more radical action. It terminated the second tier and recouped most workers’ account balances. This approach resembles pension retrenchment in Argentina (2008), which terminated individual accounts, transferred existing balances back to the state, and restored workers’ rights to full public pensions. In Poland, by contrast, the second tier was scaled down but retained, with no effort to recoup workers’ existing balances.

Each approach raises a different set of issues. In Hungary, the reversal of a reform promoted 15 years earlier as giving workers personal ownership of their retirement accounts could adversely impact public confidence in the pension system. This could affect compliance with the contribution requirement, or make the measures that deal effectively with demographic ageing more difficult to enact. In Poland, more open debate and incremental action may make such public backlash less likely. But with a scaled-down second tier, Poland risks reduced economies of scale in second-tier administration. Management fees may consume greater fractions of workers’ savings or, constrained by tighter limits, may make some funds unprofitable.

Since both retrenchments are still in progress, many questions as yet have no clear answers. Three areas of uncertainty stand out.

First, will the retrenchments endure? While the second tiers continue to enjoy support from some groups in both countries, current tight restrictions on borrowing in Europe would seem to preclude their full restoration. Yet given the recurrent shifts in pension policy described in the preceding pages, a partial restoration cannot be dismissed out of hand. Furthermore, in Poland, which retained the mandatory character of its second pillar, it is unclear whether those officials who sought to make it optional will continue their efforts, and with what results.

A second unknown is the extent to which these retrenchments will become models for action for other Central European governments. As shown in Table 2, some of the governments that reduced second tier funding have stated that they will restore it when economic conditions permit. Yet the Hungarian and Polish experiences show that many factors can stand in the way of such action: the EU Maastricht criteria, constitutional debt restrictions, and competition with other government spending and tax priorities. By restricting credit, the global economic crisis has created a higher degree of fiscal discipline than existed when the Central European second tiers were first established. How will the other governments now set priorities?
Third, how will the private funds adapt to the retrenchments? In Hungary, where the state no longer mandates that workers save in privately-managed individual accounts, will more traditional forms of private pensions — i.e. voluntary and financed by workers and employers without state involvement — now take deeper hold? In Poland, where two-thirds of second-tier revenues will no longer flow through private funds back to the government, how will the reduced volume of business affect financial markets? How will the sharp reductions in management fees enacted in both countries affect the funds’ viability and profitability?

However these issues are resolved, the preceding pages leave no doubt that the expansion and retrenchment of second-tier investments was a difficult experience for these two Central European states. After the break-up of the Soviet Union and restoration of national independence, they undertook major pension restructuring with high expectations, only to reverse these reforms or to scale them down. With the benefit of hindsight, it is clear that the design specifications omitted from the original legislation were no easier to formulate subsequently, and may have become more intractable due to resistance from the newly-created second-tier funds. Equally clear with hindsight is the mismatch between the benefit package that policy-makers in both countries sought and the one that private funds were able and willing to provide. But perhaps the clearest implications of the Hungarian and Polish retrenchments relate to social dialogue. These experiences underscore the importance of open and informed debate among scheme constituents as a linchpin for sustainable pension restructuring.

Bibliography


The retrenchment of second-tier pensions in Hungary and Poland: A precautionary tale


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IPE. 2011g. “Hungarian move essentially spells end of mandatory funded pension pillar”, in Investments and Pensions Europe News, 19 December.
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The redistributive effect of social transfer programmes and taxes: A decomposition across countries

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Abstract The aim of this article is to offer detailed information of the redistributive impact of social transfer programmes and taxes in 28 Member countries of the Organisation for Economic Co-operation and Development, employing data that have been computed from the Luxembourg Income Study’s micro-level database. We find that welfare states on average reduce inequality by 35 per cent. Social benefits have a much stronger redistributive impact than taxes. As far as social programmes are concerned, public pensions account for the largest reduction in income inequality, although the pattern is diverse across countries. To a lesser extent, social assistance, disability and family benefits also contribute to smaller income disparities.

Keywords income redistribution, benefit, taxation, welfare state, OECD
The growing interest in national and cross-national differences in earnings and income inequality has produced a wide range of studies (see Gottschalk and Smeeding, 1997; Brandolini and Smeeding, 2007; OECD, 2008 and 2011; Lambert, Nesbakken and Thoresen, 2010; and Immervoll and Richardson, 2011). An important development has been the launching of the Luxembourg Income Study (LIS) in which micro data sets from various countries have been “harmonized”. Consequently it is possible to study income inequality across countries (see Atkinson, Rainwater and Smeeding, 1995). However, the improvement in methods of measurement and in empirical knowledge is in contrast with the lack of insight into causes of changes in inequality over time. This should perhaps not come as a surprise as the distribution of income in a country is the outcome of numerous decisions made over time by households, firms, organizations and the public sector. One could think of an almost infinite number of micro-level causes for differences and changes in income inequality (Gottschalk and Smeeding, 2000; Förster, 2000).

The increasing income inequality observed for most — but not all — Western economies over the last decades has coincided with many structural changes in the economic system. For many countries the main forces behind growing disposable income inequality are the growth of inequality of earned market income, demographic changes, changes in household size and composition, and other endogenous factors. Atkinson (2000, p. 17) concludes that we should not expect the same development in all countries, because the distribution of income is subject to a wide variety of forces (which may differ over countries). The evolution of income inequality is not simply the product of common economic forces: it also represents the impact of institutions and national policies.

In this article, we focus on the effect of social transfers and taxes in redistributing income. Our expectation is that social transfers are mainly directed to lower-income groups, while income taxes are mainly paid by the rich, and therefore both will have an impact on income (re)distribution. We use the traditional budget incidence approach — despite some methodological problems, which we will address — to study the combined effects of taxes and transfers on income (re)distribution. The distribution of primary or wage and salary income is compared with the distribution of income after tax and after social transfers. We present empirical results by analysing absolute levels of income inequality across countries for the most recent data-year available (around 2004) for 28 Member countries of the Organisation for Economic Co-operation and Development (OECD).

2. OECD (2008) summarizes trends and driving factors in income distribution and poverty on the basis of a harmonized questionnaire of OECD Member countries (i.e. distribution indicators derived from national micro-economic data).
Empirical studies on the redistributive effect of welfare states suffer from a lack of data. Recently this has been changed by the work of Mahler and Jesuit (2006) and Jesuit and Mahler (2010) using LIS data. The Luxembourg Income Study offers micro data on public and private sources of income that are comparable, detailed and accurate. Using the LIS data set, it is possible to estimate direct redistribution for most developed countries.

We elaborate on and update the work of Jesuit and Mahler. But in addition, we undertake a more detailed study which allows us to decompose income redistribution through the welfare state into the redistributive impact of specific social transfers and taxes. We develop a budget incidence simulation model to investigate to what extent several social transfers and taxes reduce income inequality in 28 OECD countries around 2004.

The article is organized as follows. In the second section we briefly summarize literature on the redistributive effect of taxes and transfers. Our research method is presented in the third section. The fourth section provides a descriptive analysis of inequality and redistribution across 28 countries. The empirical results of our detailed decomposition of the redistributive effect of social transfers and taxes across countries are presented in the fifth section. Finally, we draw some conclusions.

### Income inequality and the redistributive effects of taxes and transfers across countries

A number of studies analyse income distribution across countries, indicating that the role of social policy (taxes and transfers) is important in the magnitude of redistributing income. Korpi and Palme (1998) used data from LIS to study different types of welfare states. They illustrated that social transfers are important for reducing income inequality. They make a distinction between the redistributive effect of programme size and the extent to which they are targeted to low-income groups. They indicate that it is less likely that targeting will reduce inequality. This paradox arises because targeted programmes will only have the support of a small and isolated political base. Comprehensive programmes, in contrast, will have much broader support. Jesuit and Mahler (2004) conclude that redistribution is more strongly related to the size of social programmes than to their target efficiency. Bradley et al. (2003) divide the welfare states into three categories (Social Democratic, Christian Democratic and Liberal Democratic) to study government

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4. See also Caminada and Goudswaard (2010).
redistribution and distributive profiles of taxes and transfers. Their results indicate
that welfare generosity does not have a significant effect on pre-tax and pre-transfer
income inequality, but does have a positive impact on the total redistribution of
incomes. Kenworthy and Pontusson (2005) examined the trend in market income
inequality and redistribution in OECD countries in the 1980s and 1990s. They find
a sizeable increase in market income inequality. But redistribution through the
welfare state also increased in most countries, which (partly) compensated the rise
in market inequality.

Most studies focus on overall redistribution. Others have examined in
more detail the redistributive effect of several social programmes (Plotnick, 1984;
of public and private social programmes. They conclude that a shift from public to
private social programmes may affect the redistributive impact of the welfare state.
In a recent study, Immervoll and Richardson (2011) show that tax-benefit systems
are now less effective at reducing inequality compared with the mid-1990s for the
majority of the 12 countries (and on average) for whom suitable long run data was
available. After the mid-1990s, reduced redistribution has been the main driver of
widening income gaps. Looking at different parts of the redistribution system, they
conclude that social benefits have a much stronger redistributive impact than social
contributions or taxes.

This article mainly elaborates on Jesuit and Mahler (2004) and Mahler and Jesuit
(2006). They divide government redistribution into several components: the
redistributive effects from unemployment benefits, from pensions, and from taxes
and performed an empirical exercise for 13 countries with LIS data around the years
1999/2000. On average, taxes and transfers in these countries cause a drop in the
Gini coefficient from 0.432 to 0.271; that is, a reduction by 37 per cent. Social
transfers account for around 75 per cent of total inequality reduction and taxes
for around 25 per cent. Next, Jesuit and Mahler decompose social transfers
into pensions, unemployment and other programmes. Pensions appear to cause
56 per cent of total redistribution through social transfers, while unemployment
programmes account for 11 per cent and other programmes account for 40 per cent
of inequality reduction. This study provided relatively new insights. However, the
data used are not very recent, the number of countries is small and only two specific
social programmes are included in the analysis. In this article, we will make further
steps on these points.

5. The Gini coefficient of equivalized disposable household income is used often as a summary measure
of income distribution. Equivalent household income is income adjusted to reflect differences in
household needs through an equivalence scale (the square root elasticity). The Gini coefficient lies
between 0 (no inequality) and 1 (maximum inequality).
Research method

Measuring the redistributive effects of taxes and social transfers

Usually, the impact of social policy on income inequality is calculated in line with the work of Musgrave, Case and Leonard (1974), i.e. statutory or budget incidence analysis. A standard analysis of the redistributive effect of taxes and income transfers is to compare pre-tax-transfer income inequality and post-tax-transfer income inequality (OECD, 2008, p. 98). Our measure of the redistributive impact of social security on inequality is straightforwardly based on formulas developed by Kakwani (1986) and Ringen (1991):

\[ \text{Redistribution by taxes and social transfers} = \text{primary income inequality} - \text{disposable income inequality} \]

This formula is used to estimate the reduction in inequality produced by taxes and social transfers, where primary income inequality is given by a summary statistic of pre-tax, pre-transfer incomes and disposable income inequality is given by the same summary statistic of disposable equivalent incomes. When calculating inequality indices for both primary and disposable income, individuals are ranked by their primary and disposable incomes respectively, so that the re-ranking effect is included in our results (see Plotnick, 1984; the same method is applied by Immervol and Richardson, 2011).

Table 1 presents the framework of accounting income inequality and redistribution through various income sources.

<table>
<thead>
<tr>
<th>Income components</th>
<th>Income inequality and redistributive effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross wages and salaries + self-employment income + cash property income + occupational and private pensions + private transfers + other cash income</td>
<td>Income inequality before social transfers and taxes</td>
</tr>
<tr>
<td>= Primary income</td>
<td></td>
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<tr>
<td>+ Social security cash benefits</td>
<td>– Redistributive effect of social transfers</td>
</tr>
<tr>
<td>= Gross income</td>
<td>= Income inequality before taxes</td>
</tr>
<tr>
<td>– Payroll (Mandatory payroll taxes) – Income taxes</td>
<td>– Redistributive effect of taxes</td>
</tr>
<tr>
<td>= Disposable income</td>
<td>= Income inequality after social transfers and taxes</td>
</tr>
</tbody>
</table>

Note: For France, Greece, Hungary, Italy, Mexico, and Spain, the value of gross market income in the data set is not available. Instead, we use net market income which is the sum of net wages and salaries, self-employment income and cash property income.
The budget incidence analysis is not without problems; see a critical survey of efforts to measure budget incidence by Smolensky, Hoyt and Danziger (1987). The pre-transfer inequality is compared to the post-transfer inequality keeping all other things equal — namely, assuming unchanged household and labour market structures, thus disregarding any possible behavioural changes that the situation of absence of social transfers would involve (Frick, Büchel and Krause, 2000; Palme, 1996). However, behavioural responses may obviously be important. It is likely that in the absence of social transfers more people will work (more) thereby earning higher incomes. Kim (2000b) showed that both the generosity and efficiency of the tax/transfer system may influence the level of pre-tax-transfer income inequality. Budget incidence calculations can therefore only be seen as an approximation of the redistributive effects because of the assumption that agents behave similarly in situations with and without social transfers and social security. This implies that estimates for redistribution through taxes and transfers should be regarded as upper bounds. Despite this problem, analyses on statutory and budget incidence dating from at least the 1940s onwards can be found in the literature on public finance.

With respect to the inequality measure we use the Gini coefficient. The change in the Gini between pre- and post-government income reflects redistribution through taxes and transfers.

We sequentially decompose the Gini coefficient in order to calculate the partial redistributive impact of transfers and taxes; see Wang and Caminada (2011) for details. The results obtained for the specific transfers and taxes are corrected for the ordering effect.

The sequential accounting decomposition approach has been advocated, among others, by Kakwani (1986) and is also followed by Jesuit and Mahler (2004) and Mahler and Jesuit (2006), Immervoll et al. (2005) and Whiteford (2008). Other techniques of the decomposition of the Gini coefficient by income source can be found in the literature as well — e.g. Lerman and Yitzhaki (1985), Stark, Taylor and Yitzhaki (1986), Kim (2000a). In the literature two techniques of decomposing inequality are distinguished; the sequential accounting decomposition and the factor source decomposition approach. When comparing both approaches, they lead to the same estimates of disposable income inequality, but to contradictory results.


7. The ordering of programmes has influence on the results when using the sequential accounting decomposition method. The partial redistributive effect of a specific social transfer will be highest (smallest) when computed as the first (last) social programme. We corrected for this effect as follows. We consider every specific social transfer as the first programme to be added to primary income and every direct tax as the first tax to be subtracted from gross income. In that case, the sum of all partial redistributive effects amounts to (a little) over 100 per cent. So we rescaled the redistributive effects of each programme by applying an adjustment factor, which is defined as the overall redistribution (100 per cent) divided by the sum of all partial redistributive effects of all programmes (a little over 100 per cent).
with respect to the importance of benefits for redistributing income (see Fuest, Niehues and Peichl, 2010). Inequality analysis based on the sequential accounting decomposition approach (as applied in this article) suggests that benefits are the most important factor reducing inequality in the majority of countries. The factor source decomposition approach, initiated by Shorrocks (1982), however, suggests that benefits play a negligible role and sometimes even contribute slightly positively to inequality. In this instance, taxes and social contributions are seen by far the most important contributors to income inequality reduction. Fuest, Niehues and Peichl (2010) explain these partly contradictory results. The most important difference between the two approaches is that the accounting approach applies tax benefit instruments sequentially, whereas the decomposition approach accounts for them simultaneously. See also Kammer, Niehues and Peichl (forthcoming).

Although both approaches are used in the literature, studies analysing the impact of tax benefit instruments based on the standard sequential accounting approach generally find rather intuitively straightforward results, i.e. that benefits are the most important source of inequality reduction. We follow this sequential decomposition approach, which fits in a strand of recent empirical literature.

**Choice of income unit and country data**

The unit of analysis is an important issue in income distribution studies. It is evident that the ultimate source of concern is the welfare of the individual. However, an individual is often not the appropriate unit of analysis. For instance, children and spouses working at home do not have recorded income, but may nevertheless be enjoying a high standard of living as a result of income sharing with parents and spouses. Traditionally, studies have used the household income per capita (or per member) measure to adjust total incomes according to the number of persons in the household. In the last decades, equivalence scales have been widely used in the literature on income distribution (see Figini, 1998). An equivalence scale is a function that calculates adjusted income from income and a vector of household characteristics. Equivalence elasticity (E) is a measure for the economies of scale. E varies between 0 and 1. The larger E, the smaller are the economies of scale assumed by the equivalence scales.

Equivalence scale elasticity for the LIS database is set around 0.5. This implies that in order to have an equivalent income of a household of one person where income is 100, a household of two persons must have an income of 140 to have equivalent incomes. Alternatively a one-person household must have 70 per cent of the total income of a two-person household to have equivalent income. In our comparative analysis we use this LIS equivalence scale, where E is around 0.5. However, it has been shown that the choice of equivalence scales affects international comparisons of income inequality to a wide extent. Alternative
adjustment methods would definitely affect the ranking of countries, although the broad pattern remains the same (Atkinson, Rainwater and Smeeding, 1995, p. 52). In line with LIS, Gini coefficients are based on incomes which are bottom coded at 1 per cent of disposable income and top coded at 10 times the median disposable income.

In the empirical literature, the selection of countries and data-years differ due to considerations of data quality. We apply a cross-national analysis using comparable income surveys for all OECD countries in the LIS database. LIS micro data seems to be the best available data for describing how income inequality and the redistributive effects of taxes and transfers vary across countries (Nolan and Marx, 2009). Here, we restrict ourselves to the latest data-year available (around 2004) to analyse redistribution of social transfers and taxes.

From nearly 300 variables in the data set, we chose those related to household income (all kinds of income sources), total number of persons in a household and household weight (which is used in order to correct for sample bias or non-sampling errors) to measure income inequality and the redistributive effect across countries. In line with LIS convention and the work of Mahler and Jesuit (2006), we have eliminated observations with zero or a missing value of disposable income from LIS data. Household weights are applied for the calculation of Gini coefficients.

### Inequality and redistribution across countries

#### Inequality across countries

This section reviews the evidence on cross national comparisons of annual disposable income inequality for 28 nations around the mid-2000s. This section is mainly descriptive and relies on the empirical evidence from LIS for the levels of income inequality around the mid-2000s. Figure 1 shows the Gini coefficients. Countries are listed in order of their Gini of disposable income from smallest to largest. A wide range of inequality exists across the OECD countries. The lowest income inequality is found in Denmark and Sweden, while Mexico and the United States are the most unequal nations.

With respect to income inequality after social transfers and taxes, Denmark, Sweden, Slovakia and Slovenia have low values around 0.24, in line with the results in OECD (2008). These countries are followed by 11 countries (Finland, Norway, Netherlands, Czech Republic, Switzerland, Luxembourg, Austria, Germany,

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8. We compared the Gini coefficients and total redistribution of 20 LIS-OECD common countries using LIS data with the square root equivalence scales, with the Gini coefficients of the OECD database using slightly different equivalence scales. The general pictures from both data sets are almost the same.
Belgium, France and Hungary) with Gini coefficients between 0.25 and 0.30. Above average inequality is found in 13 countries (Republic of Korea, Ireland, Australia, Spain, Canada, Poland, Greece, Italy, Estonia, the United Kingdom, Israel, the United States and Mexico).

The pattern of primary income inequality (before social transfers and taxes) is quite different from disposable income inequality. Belgium and Hungary have below-average levels of inequality of disposable income, but the highest level of primary income inequality, with values around 0.55. The Republic of Korea has a very low level of primary income inequality, but above-average inequality of disposable income. The redistributive effect of taxes and social transfers differ considerably across these countries. The highest level of redistribution is found in Belgium, Hungary and Finland, while redistribution is very small in the Republic of Korea and Mexico.

The redistributive effect of taxes and transfers

Several studies focus on the impact of income components on overall inequality (Shorrocks, 1983; Lerman and Yitzhaki, 1985; Jenkins, 1995; Breen, García-Peñalosa and Orgiazzi, 2008). These suggest that income taxes and social benefits are important sources of reducing household income inequality. Figure 2 shows the

Figure 1. Disposable and primary income inequality across LIS countries around 2004 (Gini coefficients)
overall redistribution across countries (in terms of the Gini coefficient) and the disaggregated effects of social transfers and taxes. On average, transfers and taxes reduce the Gini coefficient from 0.462 to 0.299; that is, by around 35 per cent (See Figure 1).

Figure 3 shows the relative redistributive effects of transfers and taxes. It should be noted, however, that LIS income surveys contain income taxes and mandatory payroll taxes, but no indirect taxes. For some countries — Hungary, Italy, Mexico, Slovakia and Slovenia — data as regards taxes are not available in the data set. For the other 23 countries social transfers on average account for a share of 81 per cent in the total reduction of income inequality, while taxes account for 19 per cent. Taxes are important in equalizing incomes only in a few countries: the United States, Israel, Canada and Australia. In the other countries, taxes account for less than 30 per cent of total redistribution. Note that the partial effect of taxes is negative for Switzerland. The tax system in Switzerland is in fact regressive, which is caused by the offsetting effect of regressive payroll tax (Kenworthy, 2009) and tax competition (Feld, 2000). In this country it appears to be difficult to levy redistributive taxes from rich and mobile persons to the poor.

In general, our analysis confirms earlier studies: social benefits have a much stronger redistributive impact than taxes.
This section provides detailed results of the redistributive effect of welfare state regimes across a selection of 28 countries based on the most recent wave of LIS. LIS data allow us to decompose the trajectory of the Gini coefficient from primary to disposable income inequality in several parts: we will distinguish 11 different social benefits, income taxes and social contributions in our empirical investigation. We calculate the (partial) redistributive effects for the following programmes: sickness benefits, occupational injury and disease benefits, disability benefits, state old-age and survivors’ benefits, child/family benefits, unemployment compensation benefits, maternity and other family leave benefits, military/veterans/war benefits, other social insurance benefits, social assistance cash benefits, near-cash benefits,9 mandatory payroll taxes and income taxes.

9. Near-cash benefits refers to all forms of transfers that are in-kind payments (i.e. they are tied to a specific requirement, such as school attendance), but have a cash equivalent value equal or nearly equal to the market value, including near-cash housing benefits. See LIS Variable Definition List <http://www.lisdatacenter.org/pretechdoc.htm>.

Note: For Hungary, Italy, Mexico, Slovakia and Slovenia, data for taxes are not available.

Source: Own calculations based on LIS (2011).
The treatment of pensions needs special attention. Public pension plans are generally seen as part of the safety net, generating large anti-poverty effects. So, state old-age pension benefits will be included in our analysis on redistribution. But countries differ to a large extent in public versus private provision of their pensions (OECD, 2008, p. 120). Occupational and private pensions are not redistributive programmes per se, although they too have a significant effect on redistribution when pre-tax-transfer inequality and post-tax-transfer inequality are measured at one moment in time, particularly among the elderly.\(^{10}\) The standard approach treats contributions to government pensions as a tax that finances the retirement pensions paid out in the same year, while contributions to private pensions are effectively treated as a form of private consumption. This may affect international comparisons of redistribution effects of social transfers and taxes. Overcoming this bias requires a choice: should pensions be earmarked as market income or as a transfer? We deal with this bias rather pragmatically by following the LIS Household Income Variables List: occupational and private pensions are earmarked and treated as market income.

To illustrate the idea of decomposing disposable income inequality, Table 2 presents the results of our accounting exercise for the mean of all 28 countries; additional information is given for the means of two sub-samples of countries (see below). Interestingly, public old-age and survivors’ pensions account for 50 per cent of total redistribution. The disability scheme (7 per cent), social assistance (8 per cent) and child and family benefits (6 per cent) have some impact on income distribution. Other social benefits seem to have a rather limited redistributive effect; together they account for 14 per cent of total redistribution. Obviously, most of these other programmes have a smaller size, which may (partly) explain their smaller contribution to income redistribution. Income taxes account for another 15 per cent of total redistribution, but payroll taxes do not have any redistributive impact.

It should be noted that our results could be affected by including several countries with missing data elements in the trajectory from primary to disposable income. For example, for five countries data for taxes are not available (i.e. Hungary, Italy, Mexico, Slovakia and Slovenia). Excluding these countries indicates that the share of taxes in total redistribution will be slightly higher (19 per cent instead of 15 per cent), while the partial effect of transfers will be somewhat lower (81 per cent instead of 85 per cent). A similar exercise has been done for 20 countries only, excluding three further countries (France, Greece and Spain), where net market income is used rather than gross market income. The results hardly change when these countries are excluded, leaving our conclusion unaltered: public old-age and

\(^{10}\) See Van Vliet et al. (2011) for such an analysis. Preferably, however, the redistributive effects of occupational and private pensions should be analysed on a lifetime basis.
### Table 2. Decomposition of disposable income inequality for 28 countries around 2004

<table>
<thead>
<tr>
<th></th>
<th>Mean 28 countries</th>
<th>Mean 23 countries</th>
<th>Mean 20 countries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gini %</td>
<td>Gini %</td>
<td>Gini %</td>
</tr>
<tr>
<td>(1) Gini primary income</td>
<td>0.462</td>
<td>0.460</td>
<td>0.461</td>
</tr>
<tr>
<td>(2) Gini disposable income</td>
<td>0.299</td>
<td>0.295</td>
<td>0.293</td>
</tr>
<tr>
<td>Overall redistribution (1) – (2)</td>
<td>0.163</td>
<td>0.164</td>
<td>0.168</td>
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#### Partial effects

<table>
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<tr>
<th></th>
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<th>share</th>
<th>share</th>
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<tr>
<td>Transfers</td>
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<tr>
<td>Sickness benefits</td>
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<td>Occupational injury and disease benefits</td>
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<td>Disability benefits</td>
<td>0.011</td>
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<td>0.012</td>
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<tr>
<td>Public old-age and survivors' benefits</td>
<td>0.081</td>
<td>50</td>
<td>0.075</td>
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<td>Child/family benefits</td>
<td>0.010</td>
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<td>0.011</td>
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<tr>
<td>Unemployment compensation benefits</td>
<td>0.007</td>
<td>4</td>
<td>0.008</td>
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<tr>
<td>Maternity and other family leave benefits</td>
<td>0.003</td>
<td>2</td>
<td>0.002</td>
</tr>
<tr>
<td>Military/veterans/war benefits</td>
<td>0.001</td>
<td>0</td>
<td>0.001</td>
</tr>
<tr>
<td>Other social insurance benefits</td>
<td>0.006</td>
<td>4</td>
<td>0.006</td>
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<tr>
<td>Social assistance cash benefits</td>
<td>0.013</td>
<td>8</td>
<td>0.012</td>
</tr>
<tr>
<td>Near-cash benefits</td>
<td>0.003</td>
<td>2</td>
<td>0.004</td>
</tr>
<tr>
<td>Taxes</td>
<td>0.026</td>
<td>15</td>
<td>0.030</td>
</tr>
<tr>
<td>Mandatory payroll taxes</td>
<td>0.001</td>
<td>0</td>
<td>0.001</td>
</tr>
<tr>
<td>Income taxes</td>
<td>0.024</td>
<td>15</td>
<td>0.030</td>
</tr>
<tr>
<td>Overall redistribution</td>
<td>0.163</td>
<td>100</td>
<td>0.164</td>
</tr>
</tbody>
</table>

**Notes:**
- Short-term occupational injury and disease benefits, long-term occupational injury and disease benefits.
- Disability pensions, and disability allowances.
- Universal old-age pensions, employment-related old-age pensions, old-age pensions for public-sector employees, early retirement benefits, and survivors’ pensions.
- Child allowances, advance maintenance, and orphans’ allowances.
- Unemployment insurance benefits, (re)training allowances, and placement/resettlement benefits.
- Wage replacement, birth grants, childcare leave benefits, and maternity and other family leave benefits.
- Invalid career benefits, education benefits, and childcare cash benefits.
- General social assistance benefits, old-age and disability assistance benefits, unemployment assistance benefits, and parents assistance benefits.

**Source:** Own calculations based on LIS (2011).
survivors’ benefits play a major role in total redistribution. Moreover, note that payroll taxes do not have any redistributive impact, independent of the selection of countries (28, 23 or 20).

The accounting exercise presented in Table 2 covers all 28 countries. Table 3 presents the results for groups of countries. We clustered the countries according to Esping-Andersen’s types of welfare states (Esping-Andersen and Myles, 2009).

In most countries two dominant income components account for above 50 to 60 per cent of total reduction in income inequality: the public old-age pensions and the survivors’ programme, and income taxes. Of course, the dominant effect of old-age pensions makes sense, since the elderly have in general no income from work. Also, in most countries public pension benefits are flat-rate, which implicates a strong redistributive impact. However, cross-country differences are huge. For example, in Southern European countries the public old-age benefits account for over 80 per cent of total redistribution, while these figures are much lower for the English-speaking countries (20 to 34 per cent), for Nordic countries (31 to 48 per cent), for Continental European countries (47 to 58 per cent) with the exception of Switzerland (79 per cent), and for Central Eastern European countries (54 to 70 per cent) with the exception of Slovenia (79 per cent).

In the English-speaking countries, except the United Kingdom, income taxes play a major role (above 30 per cent) compared to other countries. The United States is a special case, because income tax contributes a relatively large part (38 per cent) to the reduction of income inequality between primary and disposable incomes. The earned income tax credit (EITC) is targeted towards the poor, which makes the United States’ tax system rather progressive. Also the redistributive effect of social assistance in the English-speaking countries is relatively high in a comparative setting (9 to 28 per cent), with Australia as an exception.11

Child and family benefits are important in the English-speaking countries (6 to 13 per cent), in Continental European countries (4 to 12 per cent), and in Central Eastern European countries (5 to 12 per cent). In Nordic countries a variety of other social programmes contribute also to the reduction of inequality, especially the disability scheme (9 to 15 per cent). All other social benefit programmes appear to have rather limited redistributive effects in all countries, although unemployment compensation benefits do have some effect too.

The group of other LIS countries is rather mixed. A common element is that public old-age and survivors’ pensions account for (much) less than 50 per cent of total redistribution.

11. This result for Australia may, at least in part, be driven by the classification of benefits in the LIS data set. Social assistance cash benefits appear to be recorded as unemployment insurance benefits. In general, the classification of benefits may affect our results to some extent.
Table 3. Decomposition of income inequality and redistributive effect of social transfers and taxes around 2004

<table>
<thead>
<tr>
<th>Partial effects (shares)</th>
<th>(a) Gini</th>
<th>(b) Gini</th>
<th>Overall redistribution (a-b)</th>
<th>Transfers (%)</th>
<th>Sickness benefits (%)</th>
<th>Occupational injury and disease benefits (%)</th>
<th>Disability benefits (%)</th>
<th>Public old-age and survivors benefits (%)</th>
<th>Child/family benefits (%)</th>
<th>Unemployment compensation benefits (%)</th>
<th>Maternity and other family leave benefits (%)</th>
<th>Military/ veterans/ war benefits (%)</th>
<th>Other social insurance benefits (%)</th>
<th>Social assistance cash benefits (%)</th>
<th>Near-cash benefits (%)</th>
<th>Taxes (%)</th>
<th>Mandatory payroll taxes (%)</th>
<th>Income taxes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel A: LIS English-speaking countries</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>0.461</td>
<td>0.312</td>
<td>0.149</td>
<td>69</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>22</td>
<td>13</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>-4</td>
<td>31</td>
<td>-31</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>0.433</td>
<td>0.318</td>
<td>0.114</td>
<td>68</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>33</td>
<td>10</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>9</td>
<td>-2</td>
<td>32</td>
<td>-33</td>
<td></td>
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<tr>
<td>Ireland</td>
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<td>0.312</td>
<td>0.178</td>
<td>76</td>
<td>3</td>
<td>0</td>
<td>4</td>
<td>20</td>
<td>12</td>
<td>4</td>
<td>0</td>
<td>-1</td>
<td>28</td>
<td>5</td>
<td>24</td>
<td>2</td>
<td>22</td>
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<td>0.345</td>
<td>0.145</td>
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<td>24</td>
<td>15</td>
<td>14</td>
<td>3</td>
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<td>United States</td>
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<td>-</td>
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<td>6</td>
<td>34</td>
<td>0</td>
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<td>2</td>
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<td>13</td>
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<td>Panel B: LIS Continental European countries</td>
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<td>Austria</td>
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<td>7</td>
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<td>4</td>
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<td>5</td>
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<td>0</td>
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<td>6</td>
<td>23</td>
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<td>-</td>
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<td>Panel C: LIS Nordic countries</td>
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Table 3. Continued

Partial effects (shares)

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<th>Partial redistribution</th>
<th>Transfers (a)</th>
<th>Sickness benefits (b)</th>
<th>Occupational injury and disease benefits (c)</th>
<th>Disability benefits (d)</th>
<th>Public old-age and survivors benefits (a-b)</th>
<th>Child/family benefits (e)</th>
<th>Unemployment compensation benefits (f)</th>
<th>Maternity and other family leave benefits (g)</th>
<th>Military/ veterans’ war benefits (h)</th>
<th>Other social insurance benefits (i)</th>
<th>Social assistance cash benefits (j)</th>
<th>Near-cash benefits (k)</th>
<th>Taxes (l)</th>
<th>Mandatory payroll taxes (m)</th>
<th>Income taxes (n)</th>
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<td>62</td>
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<td>70</td>
<td>12</td>
<td>8</td>
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<td>0.163</td>
<td>85</td>
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<td>7</td>
<td>50</td>
<td>6</td>
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<td>mean LIS—OECD 20</td>
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Note: Hungary, Italy, Mexico, Slovakia and Slovenia are excluded in mean–23 because data for taxes are not available; further, France, Greece and Spain are excluded in mean–20 because we had to use the net value of market income instead of gross market income.

Source: Own calculations based on LIS (2011); in some countries a specific benefit scheme does not exist and/or data is not available in LIS (reported as ‘-’).
Conclusion

In this article, we have investigated income distribution and redistributive effects attributed to social transfers and taxes across 28 OECD countries around 2004, based on the micro household income data from LIS. Since one of the functions of many national social protection systems is to reduce income inequality, this may provide relevant information for policy-makers. Different social policies bring different types of welfare systems, leading to various outcomes in income distribution. Among the countries listed in this article, Denmark and Sweden have the smallest income disparity, while Mexico and the United States have the largest. Generally speaking, European countries — especially Nordic and Continental welfare states — achieve lower levels of income inequality than other countries.

With respect to redistributive effects, our budget incidence analysis indicates that the pattern is diverse across countries. On average, taxes and social benefits cause a drop in the Gini coefficient from 0.462 to 0.299, that is a reduction by 35 per cent. The largest redistributive effects are found for Belgium, Hungary and Finland, while Mexico, the Republic of Korea and the United States show rather limited overall redistributive effects. On average, social transfers account for 85 per cent of total redistribution, while taxes account for 15 per cent. In the United States, a relatively large part of redistribution comes from taxes, while the tax system in Switzerland is regressive. But in all countries social benefits play a dominant role in reducing initial income disparities.

The main contribution of this article is that the redistributive impact of the welfare state is disentangled into specific programmes for the OECD countries for which the data are available. As far as social programmes are concerned, in most countries two dominant income components account for above 50 to 60 per cent of total reduction in income inequality: the public old-age and survivors' pensions programme, and income taxes. In Southern European countries, public old-age benefits account for over 80 per cent of total redistribution, while these figures are much lower for the English-speaking countries (20 to 34 per cent), for Nordic countries (31 to 48 per cent), for Continental European countries (47 to 58 per cent), and for Central Eastern European countries (54 to 70 per cent). In the English-speaking countries income taxes play a major role in redistribution (above 30 per cent), compared to other countries (with the exception of the United Kingdom). Also the redistributive effects of social assistance benefits in the English-speaking countries are relatively high in a comparative setting (9 to 28 per cent). In Nordic Countries a variety of other social programmes contribute also to the reduction of inequality, especially the disability scheme (9 to 15 per cent). All other social benefit programmes appear to have rather limited redistributive effects in all countries, although unemployment compensation benefits do have some effect too.
Our analysis is restricted to one moment in time. However, LIS data allow comparison of fiscal redistribution across the developed countries over the last three decades. To that end we have created a time-series across countries of detailed fiscal redistribution between the 1970s and the mid-2000s. Future research can employ these data in addressing several important issues. Changes (in the generosity) of welfare states can be linked to changes in fiscal redistribution. Best-practices among countries can be identified and analysed in more detail. In exploring the causes and effects of welfare state redistribution in the developed world, the literature has increasingly moved towards more disaggregated measures of social policy. This data set allows an in-depth analysis on programmes’ size and the extent to which they are targeted toward low-income groups.

Bibliography


The redistributive effect of social transfer programmes and taxes: A decomposition across countries


The redistributive effect of social transfer programmes and taxes: A decomposition across countries


Disability insurance risks: The Argentinian case

Matías Belliard, Carlos Grushka and Marcelo De Biase

National Social Security Administration (ANSES), Buenos Aires, Argentina

Abstract This article analyses the risk of disability facing workers who contribute to the Argentinian Integrated Social Security System (Sistema Integrado Previsional Argentino — SIPA). Using administrative records as our source of data for the period 2000-2006, the results indicate that 1.46 workers per 1,000 became disabled annually during that period. The risk of disability rates were higher for men than for women, but increased with age for both sexes. The risk of disability rates have also been broken down by pathology and social security scheme, taking the effects of age and sex into account. To conclude, international comparisons are presented.

Keywords risk of disability, risk of occupational accidents and disease, disability benefit, assessment of disability, Argentina

Introduction

One of the objectives of social security in general and social insurance systems in particular is to provide protection for individuals who, as a result of various social contingencies, are unable to continue to generate income from work. The Argentinian social security system was a pioneer in Latin America; it was initiated at the end of the nineteenth century and reached the height of its expansion around the middle of the twentieth century. In 1994, and distinct from the various smaller

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A previous version of this article was presented at the IX Jornadas de la Asociación de Estudios de Población Argentina (AEPA), ciudad de Córdoba, Argentina, 2007, and at the 29th International Congress of Actuaries (ICA 2010), Cape Town, South Africa, 2010. The authors would like to express their thanks to three anonymous reviewers for their comments.
reforms introduced throughout the last century, a major structural reform was approved by the Argentinian National Congress under Act 24.241. This Act introduced a mixed insurance scheme, the Integrated Retirement and Pensions Scheme (Sistema Integrado de Jubilaciones y Pensiones — SIJP), which combined a public pay-as-you-go (PAYG) first pillar and a second pillar that permitted the insured to choose between remaining in the public scheme or moving to a system of individual accounts administered by private retirement and pension fund administrators (Administradoras de Fondos de Jubilaciones y Pensiones — AFJPs). Act 24.241 introduced a disability retirement pension for affiliates who were assessed as totally physically or mentally disabled (an assessed disability of at least 66 per cent), and younger than the statutory age for receipt of the retirement pension.

The most recent change to the insurance system was implemented in January 2009 under Act 26.425 and concerned the merging of the SIJP into a single solidarity-based and PAYG financed public insurance scheme: the Argentinian Integrated Social Security System (Sistema Integrado Previsional Argentino — SIPA). This Act did not introduce any changes as regards coverage, the rules governing eligibility or the benefits for the contingency of disability provided under Act 24.241.

Under Act 24.241 (and unchanged under Act 26.425), Medical Commissions (Comisiones Médicas — CMs) were made responsible for assessing a worker’s degree of disability, both under the public PAYG scheme and the system of private individual accounts, based on a set of norms for the evaluation of the degree of disability laid down in Decree No. 478/98 (Scale [Baremo]).

The roles of the CMs have been described by De Biase and Grushka (2003) and a comparison of the rules governing disability pensions in Latin American countries undergoing reform of their social insurance systems has been carried out by Grushka and Demarco (2003). Preliminary conclusions concerning the impact of disability pensions on the system of private individual accounts were presented by Altieri (2002) in a study on work accidents based on the variables of age and sex.

The aim of this present article is to quantify and describe disability risks in the Argentinian social security system and to analyse their frequency, evolution, characteristics and distinctive features based on certain socio-demographic variables. Age, sex and pathologies were chosen as explanatory variables for the disability risk. In addition, for the purposes of our analysis, we have split the system into two schemes (or subsystems) because the disability rates would be affected by participation in the private individual accounts system which, since the end of 2008, has ceased to exist in Argentina. Distinguishing between disability risks under the two schemes is also useful for the purposes of international comparison, since similar subsystems exist elsewhere.

The data set used here is taken from two administrative registers. The statistics (numbers of disability pensioners) are based on the CMs’ administrative records for
the period 1998–2006, while the estimates concerning the numbers of workers exposed to the risk of disability are based on the Federal Administration of Public Revenue (Administración Federal de Ingresos Públicos — AFIP) contribution records for the period 2000–2006.

This introduction is followed by brief descriptions of the legal framework, the development and activities of the CMs and an overview of temporary disability benefits (TDB). Then, we provide estimates and analyses of disability rates (i.e., annual TDB rates as a proportion of the exposed population based on age, gender, scheme and pathology). Our estimates are compared with the findings of international studies to gauge whether the rates obtained are consistent. To conclude, and with the aim of enabling the findings obtained here to be taken into account by decision-makers, a final summary and comments are presented.

The legal framework

Disability pensions were created under Act 24.241 for those members assessed as totally physically or mentally disabled, and younger than the statutory retirement age and thus not eligible for the standard old-age pension (age 65 for men; age 60 for women). Here, “totally disabled” means that the assessed disability has reduced the insured’s working capacity by at least 66 per cent.

On certification, an application for a disability pension must be forwarded by the affiliate to his or her Regional Medical Commission (Comisión Médica Periférica — CMP) within 48 hours. The CMP examines the case history and summons the affiliate for an interview within 15 days of submission of the request; the committee has ten days to make any necessary enquiries and issue a decision.

If the claim is awarded, the affiliate is eligible for temporary disability benefits (backdated to the date of application) as from the date on which the disability is certified. Three years after this decision, the CMP must summon the insured and review the case before revoking the previous decision or confirming the disability as permanent.1

There are currently 44 CMPs located in various parts of the country (at least one in each province) and a Central Medical Commission (Comisión Médica Central — CMC) with its headquarters in the Autonomous City of Buenos Aires, each comprising of five doctors selected on the basis of open public competition and their previous careers. Under Act 26.425 the Superintendence for Occupational Hazards (Superintendencia de Riesgos del Trabajo — SRT) is responsible for the administration of the CMs, which are financed jointly by the National Social

1. This period may be extended for a further two years if the CM considers that the affiliate may be rehabilitated within that time.
Security Administration (Administracion Nacional de Seguridad Social — ANSES) and the Work Injury Insurers (Aseguradora de Riesgos del Trabajo — ARTs).

Originally, the CMs were created to determine the degree of work incapacity of SIJP affiliates in the PAYG scheme or system of individual accounts. Following the introduction of Act 24.557 (occupational hazards) they also became responsible for determining levels of disability caused by work accidents and occupational diseases. The CMs also assess insurance benefits under Acts 20.475 (disabled), 20.888 (blind) and 24.347 (old age) as well as the examination of applications from newly self-employed workers (Decree No. 300/97). Finally, they collaborate in determining the degree of disability of applicants, beneficiaries and rightful claimants under Acts 18.037 and 18.038 (residual legislation from the previous insurance system in effect from 1967 to 1994).

Article 52 of Act 24.241 lays down general rules for the evaluation, qualification and quantification of the degree of disability (known as the Scale [Baremo]), developed by a special committee that included the Dean of Medical Forensic Science, the President of the National Academy of Medicine and representatives of universities throughout the country. These rules were incorporated in Decree No. 478/98 for the implementation of Art. 52, which superseded Decree No. 1290/94. The stated objective of these rules is to establish a methodology for the assessment of psycho-physical deterioration, based on uniform criteria, to determine the degree of work incapacity involved.

In the period under review (1998-2006), affiliates, the ANSES, the AFJP and the life insurance company (compañia de seguros de vida — CSV) under contract with the Group Invalidity and Death Insurance (Seguro Colectivo de Invalidez y Fallecimiento — SCIF) were all entitled to appeal to the CMC against any CMP decision, within five days of notification of the decision. Under the legislation, a further appeal may be made to the Federal Social Security Chamber (Cámara Federal de la Seguridad Social — CFSS).

**Development of the activities of the medical committees**

Between 1998 and 2006, the CMP dealt with an average of 56,000 cases annually; the figure rose from 40,681 in 1998 to almost double that in 2006 (Table 1). The proportion of employment-based decisions (see items (3) and (4) in Table 1) increased significantly, from 39 per cent (in 1998) to 73 per cent (in 2006).2

Overall, 64 per cent of the insurance decisions concerned temporary disability benefits, and 23 per cent concerned reviews for the allocation of permanent disability benefits; the remaining 12 per cent concerned rightful claimants (Figure 1).

2. All percentage figures have been rounded.
Table 1. The activities of the regional medical commissions — Decisions issued, by type of procedure

<table>
<thead>
<tr>
<th>Type of decision</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
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<th>2003</th>
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<td>15,059</td>
<td>14,080</td>
<td>13,493</td>
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<td>3,149</td>
<td>3,839</td>
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<td>4,587</td>
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<td>5,691</td>
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<td>–</td>
<td>3</td>
<td>21</td>
<td>26</td>
<td>33</td>
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<td>99</td>
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<td>206</td>
<td>261</td>
<td>505</td>
<td>598</td>
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<td>2,061</td>
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<td>2,476</td>
<td>2,688</td>
<td>2,726</td>
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<td>2,522</td>
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(1) Total Act 24.241

|                           | 15,851 | 18,571 | 19,683 | 22,172 | 21,901 | 21,062 | 22,197 | 22,813 | 20,815 |

(2) Total other Acts

|                           | 9,046 | 7,484 | 3,701 | 1,509 | 742 | 654 | 772 | 683 | 506 |

(3) Act 24.557 — Employment

|                           | 15,763 | 21,832 | 23,117 | 26,714 | 31,513 | 31,833 | 39,554 | 46,466 | 58,947 |

(4) Act 24.028 — SECLO

|                           | 21 | 3 | 2 | – | – | – | – | – | – |

(1 + 2 + 3 + 4) Total

|                           | 40,681 | 47,890 | 46,503 | 50,395 | 54,156 | 53,549 | 62,523 | 69,962 | 80,268 |

(1 + 2) Percentage of insurance proceedings

|                           | 61.2 | 54.4 | 50.3 | 47.0 | 41.8 | 40.6 | 36.7 | 33.6 | 26.6 |

(3 + 4) Percentage of employment proceedings

|                           | 38.8 | 45.6 | 49.7 | 53.0 | 58.2 | 59.4 | 63.3 | 66.4 | 73.4 |

Notes: (2) Temporary (Act 18.037/38), Disability Pension (Act 18.037/38), Dependents (Act 18.037/38), Self-employed (Decree N° 300/97), Blind (Act 20.888), Handicapped (Act 20.475) and Disability because of old age. SECLO = Employment Conciliation Service (Servicio de Conciliación Laboral Obligatoria).

Source: Calculation based on CMP administrative records.
The number of temporary disability benefit decisions issued annually increased between 1998 and 2001 (to a maximum of 15,059) before falling to 11,806 in 2006. The proportion of claims that were approved also rose in these earlier years; since 2001, it has fluctuated around 64 per cent (Figure 2).

**Temporary disability benefits**

The incidence of disability claims was analysed for the period January 2000 to December 2006, based on information obtained from the CMs’ administrative records. During that period, the CMPs issued 94,000 decisions on claims for temporary disability benefits (TDB), accepting 63 per cent of the claims. Appeals were submitted against 22 per cent of the decisions, 76 per cent of which were confirmed by the CMC. Only 5 per cent of the CMPs’ decisions were thus reversed by the CMC (See Table 2).

It is important to note that under the PAYG scheme, the ANSES appealed to the CMC against only 2 per cent of the CMPs’ decisions, while under the system of individual accounts the AFJP or the CSV appealed against 12 per cent. The decisions reversed under each scheme concerned 1 per cent and 5 per cent of the total decisions issued by the CMPs, respectively. This is a significant finding in terms of the projections and estimates concerning disability pensions under the existing SIPA.
In addition, approximately 6,000 TDB decisions (40 per cent) rejected by the CMC were submitted for appeal to the CFSS. These appeals represent 7 per cent of the total CMP and CFSS decisions; approximately 40 per cent of the previous CMC decisions were confirmed. This increases the number of TDB claims accepted by approximately 4 per cent, but because of delays in processing and non-digitalized records we preferred not to include this element in the present study.

An aim here is to identify the key characteristics of the TDBs awarded during the period 2000-2006 — 54,000 awarded (uncontested) by the CMP and 6,000 awarded by the CMC — and then to estimate disability rates. In total, 3,000 TDBs\(^3\) allocated to “monotributistas” (single tax payers) contributing only to the public PAYG scheme and 5,000 holders of disability pensions in non-active age groups were excluded.\(^4\) The final data set thus included 52,000 TDB cases.

3. In the light of the problems connected with estimating the exposed population of monotributistas who contributed to the Argentinian social security system, but who stopped doing so when the regulations were changed in March 2000 (choosing to contribute to the public scheme), the TDB records concerning decisions made after 2002 with a final autonomous SIJP contribution before March 2000 were not included. TDB entries for workers not listed on 31 December 2006 as contributing members under either the individual account system or the PAYG scheme, possibly because they were contributing only as monotributos, were also excluded.

4. Records concerning those younger than age 20 and those aged 65 or older on the date of the decision were also excluded.
Table 2. Decisions on TDBs, 2000-2006

<table>
<thead>
<tr>
<th>Decisions</th>
<th>Total CMP</th>
<th>Final</th>
<th>Appeals to CMC</th>
<th>Proportion of appeals (%)</th>
<th>Appeals confirmed (%)</th>
<th>Decisions reversed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cases</td>
<td>%</td>
<td>Awarded</td>
<td>Rejected</td>
<td>Under consideration</td>
<td>Total</td>
</tr>
<tr>
<td>Awarded</td>
<td>59,261</td>
<td>63.2</td>
<td>54,483</td>
<td>2,824</td>
<td>1,899</td>
<td>55</td>
</tr>
<tr>
<td>Individual account</td>
<td>35,993</td>
<td>38.4</td>
<td>31,699</td>
<td>2,509</td>
<td>1,732</td>
<td>53</td>
</tr>
<tr>
<td>PAYG</td>
<td>23,268</td>
<td>24.8</td>
<td>22,784</td>
<td>315</td>
<td>167</td>
<td>2</td>
</tr>
<tr>
<td>Rejected</td>
<td>34,471</td>
<td>36.8</td>
<td>18,316</td>
<td>3,114</td>
<td>12,848</td>
<td>193</td>
</tr>
<tr>
<td>Total</td>
<td>93,732</td>
<td>100.0</td>
<td>72,799</td>
<td>5,938</td>
<td>14,747</td>
<td>248</td>
</tr>
</tbody>
</table>

Notes: (9) proportion of CMC decisions that confirmed the CMP decision following appeal (net of those “under consideration”). (10) proportion of CMP decisions reversed by the CMC.

Source: Calculation based on CMP and CMC administrative records.
Demographic characteristics of TDB awards

The figures reveal that 82 per cent of the TDBs were awarded to men and 66 per cent to members of the individual accounts system. The average age of TDB beneficiaries was age 54, with the average age for men being two years older than that for women. The median age was age 56 (exceeded by 50 per cent of the cases). The average age for TDBs awarded under the PAYG scheme (age 58) was older than under the system of individual accounts (age 52), which was expected given the age difference among the population at risk in each scheme.

Decree No. 478/98 (Scale) which lays down the criteria for the assessment, qualification and quantification of the degree of disability of workers contributing to the SIPA, is divided into 18 sections, grouping pathologies by the part or system of the human body which is affected. For the purposes of this study, decisions concerning the “Obesity” pathology have been combined with “Malnutrition” and decisions concerning “Female genital system” and “Male genital system” have been combined in one category (“Genital system”). This study is therefore based on 16 pathology groups, as described in Table 3.

For the purposes of this study, the pathology responsible for the highest percentage of the assessed disability will be the one taken into consideration, although in many cases several pathologies are involved and/or the main pathology which defines the assessment is not necessarily the original cause of disability.

The main pathologies leading to the award of TDBs are “Cardiovascular” (27 per cent), “Nervous system” (16 per cent) and “Psychiatric” (10 per cent) followed by “Eyes” (8 per cent), “Osteoarticular” (8 per cent) and “Neoplasias” (7 per cent). The annual pattern of pathologies remains relatively stable (Figure 3), with no significant changes in the ranking of the main pathologies.

Generally speaking, the main pathologies are in line with those observed in other countries. An exhaustive comparison would be complex because of the differences in the criteria for assessing the degree of disability that are specific to each country, the populations analysed and the way the pathologies are grouped. In terms of the frequency of the pathologies, the relatively high incidence of “Cardiovascular” diseases and the low incidence of “Osteoarticular” diseases are noteworthy. The proportion of “Cardiovascular” diseases (27 per cent) for example, is the same as found in disability insurance programmes in the United States and in Canada; the figure for “Osteoarticular” diseases (8 per cent) is more than double the figure found in the latter countries, while elsewhere, in Barbados for example, it is above 20 per cent (Donkar, 2003; Nuñez, 2003; Zayatz, 1999).

Among the major demographic characteristics of beneficiaries, those diagnosed with “Respiratory” or “Cardiovascular” pathologies had the highest average age (57 years), while the youngest was associated with “AIDS” (42 years) (Figure 4). The average age for men was higher than that for women for all pathologies except...
Table 3. Pathologies under Decree No. 478/98 (Scale)

<table>
<thead>
<tr>
<th>Pathology Group</th>
<th>Code</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>PIEL</td>
<td>Chronic and/or recurrent disorders, or those which because of their characteristics are irreversible or cannot be eradicated.</td>
</tr>
<tr>
<td>Osteoarticular</td>
<td>OSTA</td>
<td>Incapacities caused by rheumatic infections as well as osteoarticular pathologies, traumatic or otherwise.</td>
</tr>
<tr>
<td>Respiratory</td>
<td>RESP</td>
<td>Chronic and/or recurrent diseases which have failed to respond to available treatment and which prevent the patient carrying out tasks of daily life.</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>CDVR</td>
<td>Incapacities which are the result of various cardiac and vascular diseases, arterial hypertension and peripheral vascular diseases.</td>
</tr>
<tr>
<td>Digestive</td>
<td>DIGE</td>
<td>Diseases of the digestive tract.</td>
</tr>
<tr>
<td>Obesity and malnutrition</td>
<td>OBYD</td>
<td>Assessed as a risk factor, as a symptom and/or contributory factor in other pathologies, because of the effect it has on the latter.</td>
</tr>
<tr>
<td>Kidney and urinary tract</td>
<td>RYVU</td>
<td>Chronic and/or recurrent diseases of the urinary tract which are assessed according to their sequels and effect on functioning.</td>
</tr>
<tr>
<td>Nervous system</td>
<td>NERV</td>
<td>Neurological diseases of a chronic evolutive nature or injuries which may cause secular organic and/or functional lesions, others of a recurrent kind with or without anatomical substrate, with asymptomatic intervals.</td>
</tr>
<tr>
<td>Eyes</td>
<td>OJOS</td>
<td>Assessment of the visual function based on corrected visual acuity with lenses, field of vision and ocular motility.</td>
</tr>
<tr>
<td>Nose, ears and throat</td>
<td>GNYO</td>
<td>Diseases of the throat, nose and ears, usually with reference to alterations in hearing and balance.</td>
</tr>
<tr>
<td>Blood</td>
<td>SANG</td>
<td>Diseases of the haematopoietic system.</td>
</tr>
<tr>
<td>Ductless glands</td>
<td>GSCI</td>
<td>Diseases affecting the various ductless glands.</td>
</tr>
<tr>
<td>Psychiatric</td>
<td>PSIQ</td>
<td>Insured psychiatric conditions, more specific than those assessed under clinical psychiatry.</td>
</tr>
<tr>
<td>AIDS</td>
<td>AIDS</td>
<td>Severe deficiency of the immunity system (HIV-AIDS).</td>
</tr>
<tr>
<td>Neoplasias</td>
<td>NEOP</td>
<td>The degree of incapacity of neoplasias depends on: location, extension, effect on local and regional ganglions, response to surgical treatment, radio-, chemo- and hormonal therapy and their sequels.</td>
</tr>
<tr>
<td>Genital</td>
<td>GENI</td>
<td>Diseases of the genital system.</td>
</tr>
</tbody>
</table>

Note: For further details concerning the pathological groups based on the Scale, see De Biase and Grushka (2003).
Source: Summary based on Decree No. 478/98.
**Figure 3.** Breakdown by pathology — TDBs awarded per year, 2000-2006

Source: Calculation based on CMP administrative records.

**Figure 4.** Average age per pathology and sex — TDBs awarded, 2000-2006

Source: Calculation based on CMP administrative records.
“Osteoarticular”; the biggest differences were in the “Genital” and “Skin” groups (the average age for men being higher by 4 and 3 years, respectively).

TDB recipients were predominantly male. The pathologies with the highest proportion of males were “Cardiovascular” and “AIDS” (90 per cent), while “Obesity and malnutrition” (67 per cent) was the pathology with the lowest proportion of males (Figure 5).

### Disability rates

In addition to the absolute values concerning TDBs, it is useful to analyse the annual incidence among the exposed population, i.e. the disability rate, which provides a measure of the “disability risk”. In this section we will analyse the disability rate, first calculating the gross rate before controlling for the impact of age and sex on disability, followed by differences between the schemes and the pathologies.

To estimate the disability rate, we need precise definitions of the population that is assessed as disabled and of the population exposed to the risk. The total number of cases of disability during the seven years under consideration (2000-2006) was 52,000. These cases were described in the previous section. However, providing a

5. The “Genital” group (31 per cent) is an exception, since this results from combining two separate pathologies (“male Genital” and “female Genital”).
definition of the exposed population for the same period presents certain problems, which will be described below.

Estimating the working population at risk based on the number of SIJP members is not appropriate because, with the passage of time, this would include more and more people who would not be covered for the risk of disability, such as those who emigrated, those contributing to other insurance schemes, workers with employment contracts that do not involve insurance contributions (interns, for example), and unreported and/or non-registered deaths. The use of contributors\(^6\) to the insurance system would underestimate real exposure, since it would include only those having actually contributed in a given month, without taking into account those affected by a disputed pension claim leading to late payments (backdated rights) or those who, exceptionally, do not contribute in a given month, but who have contributed in previous months and are thus eligible for the benefit.

We have therefore taken an intermediate and more realistic approach using the same criterion as that used by the International Labour Office (ILO, 1998) to define “active” members in their model for actuarial projections for pension schemes. Our chosen population is thus made up of workers having recorded at least one contribution during the corresponding year, as that which provides the best estimate of the population exposed to the risk of disability. We have also limited our analysis to the population between ages 20 and 64.

Based on this, a total of 36 million man-hours of exposure to risk were registered between January 2000 and December 2006, which means that an average of 5 million workers were exposed to risk during that period. Of these, 71 per cent were men and 89 per cent were members of the system of individual accounts. The average age among exposed workers was 39 years (the average age for PAYG scheme members was 50 years; 37 years for members of the system of individual accounts).

Figure 6 shows the distribution of the exposed population during the period, broken down by age, sex and scheme, and reveals that members of the PAYG scheme had lower participation but were, on average, older.

The gross disability rate (GDR), which shows the annual incidence of disability among the population as a whole for the period under review, was 1.46 per 1,000. The GDR was 83 per cent higher for men (1.68 per 1,000) than for women (0.92 per 1,000), and the figure for the PAYG scheme was 300 per cent higher than that for the system of individual accounts (1.09 per 1,000). The fact that the age and gender of each sub-population has a significant impact on gross rates must not be forgotten. Given that the population of the PAYG scheme is older and that the disability rates are higher for the older age groups, the GDR of the PAYG scheme can be expected to be higher (Table 4).

\(^6\) This was the criterion used by Altieri (2002) to estimate the exposed population.
The only available previous estimates (Altieri, 2002) concern the system of individual accounts alone, for the period July 1994 to June 2000, and were 0.8 per 1,000 (0.5 for women and 1.0 for men). The rates obtained in our study are slightly higher, but comparison is difficult because of the combination of certain differences between the two studies. In addition to the periods under review, it is important to underline that the sources of data and the definition of the disability contingency were also different: Altieri (2002) took into account the benefits provided, i.e. not

Figure 6. Distribution of the exposed population by age, sex and scheme, 2000-2006 (percentage)

Table 4. The numbers of disabled, exposure to risk and disability rates broken down by sex and scheme, 2000-2006

<table>
<thead>
<tr>
<th>Definition</th>
<th>Individual account</th>
<th>PAYG</th>
<th>Total</th>
<th>PAYG</th>
<th>Total</th>
<th>PAYG</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
</tr>
<tr>
<td>Disabled</td>
<td>28,213</td>
<td>6,140</td>
<td>34,353</td>
<td>14,109</td>
<td>3,462</td>
<td>17,571</td>
<td>42,322</td>
</tr>
<tr>
<td>Exposure in thousands of man-years</td>
<td>22,472</td>
<td>9,058</td>
<td>31,530</td>
<td>2,646</td>
<td>1,383</td>
<td>4,029</td>
<td>25,119</td>
</tr>
<tr>
<td>GDR (per thousand)</td>
<td>1.26</td>
<td>0.68</td>
<td>1.09</td>
<td>5.33</td>
<td>2.50</td>
<td>4.36</td>
<td>1.68</td>
</tr>
</tbody>
</table>

Note: GDR: Gross disability rate.
Source: Calculation based on AFIP, CMC and CMP administrative records.
just the decisions made by the medical committees, but the conclusion of the formal procedures required to claim the benefit, and also compensated for incidents incurred but not reported (IBNR) by the AFJPs. Altieri’s criterion for the estimation of the population at risk was that of contributors in a given month, rather than those having contributed at least once during the previous year as in the present study.

In a similar manner, great care must be exercised in making international comparisons, controlling for the age and sex of those exposed and for other equally important factors such as the minimum degree of disability required to receive a pension. In any case, it is important to note that our estimated GDR (1.46 per 1,000) is higher than that registered in certain Caribbean countries (Belize with 0.85 and the Dominican Republic with 0.75), but much lower than that of more developed countries such as the United States (5.7), Spain (4.3), Switzerland (4.0) or Canada (2.2) (Zayatz, 2005; Pérez Montás, 2003; Merino, Pociello García and Varea Soler, 2003), bearing in mind that the latter rates are gross figures affected by the population structure.

Disability rates by age, gender and scheme. In order to adjust for the effect of the different structures of the two schemes, it seemed appropriate to compare the disability rates by age and gender and/or to calculate the age standardized disability rates (ASDR). On this basis, the ASDR for men is 74 per cent higher than that for women (Table 5), with a reduction of 9 percentage points to compensate for the difference in age structure.

As can be seen (Figure 7), the disability rates per age group for men are higher than those for women at all ages, the differences being accentuated in the groups at the extremes (younger than age 30 and older than age 50).

The effect of the “scheme” variable modifies the gender-based ASDRs so its impact will be neutralized in the following paragraphs.

Controlling for the impact of population structure on the schemes, the disability rates under the PAYG scheme (ASDR = 1.72 per 1,000) are only 24 per cent higher than under the system of individual accounts (1.38 per 1,000); and the differences disappear (Figure 8) in the groups at the extremes (younger than age 25 and older than age 60).

In terms of the differences in ASDRs based on gender and scheme (Figure 9), the PAYG scheme has higher ASDRs for both sexes, with a difference of 26 per cent for men and 36 per cent for women.

Approximately 20 per cent of the differences in ASDRs based on sex and scheme can be explained by differences in the proportion of appeals and in the proportion of decisions reversed for the two schemes. As already indicated, 5 per cent of the TDBs allocated are reversed under the system of individual accounts and only 1 per cent under the PAYG scheme. The remaining difference in ASDRs can be attributed to socio-economic differences between the schemes’ members.
### Table 5. Disability rates based on age, gender and scheme, 2000-2006
(rates per thousand)

<table>
<thead>
<tr>
<th>Age group</th>
<th>Individual account</th>
<th>PAYG</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
</tr>
<tr>
<td>20-24</td>
<td>0.06</td>
<td>0.02</td>
<td>0.05</td>
</tr>
<tr>
<td>25-29</td>
<td>0.12</td>
<td>0.07</td>
<td>0.11</td>
</tr>
<tr>
<td>30-34</td>
<td>0.24</td>
<td>0.19</td>
<td>0.23</td>
</tr>
<tr>
<td>35-39</td>
<td>0.38</td>
<td>0.33</td>
<td>0.36</td>
</tr>
<tr>
<td>40-44</td>
<td>0.78</td>
<td>0.64</td>
<td>0.74</td>
</tr>
<tr>
<td>45-49</td>
<td>1.49</td>
<td>1.14</td>
<td>1.39</td>
</tr>
<tr>
<td>50-54</td>
<td>3.31</td>
<td>2.10</td>
<td>2.98</td>
</tr>
<tr>
<td>55-59</td>
<td>6.51</td>
<td>3.07</td>
<td>5.74</td>
</tr>
<tr>
<td>60-64</td>
<td>10.66</td>
<td>4.34</td>
<td>9.18</td>
</tr>
<tr>
<td>GDR</td>
<td>1.26</td>
<td>0.68</td>
<td>1.09</td>
</tr>
<tr>
<td>ASDR</td>
<td>1.56</td>
<td>0.87</td>
<td>1.38</td>
</tr>
</tbody>
</table>

**Note:** GDR: Gross disability rate. ASDR: Age standardized disability rate.

**Source:** Calculation based on AFIP, CMC and CMP administrative records.

### Figure 7. Disability rates based on age and sex, 2000-2006

![Graph showing disability rates based on age and sex, 2000-2006](image)

**Source:** Calculation based on Table 5.
Figure 8. Disability rates based on age and scheme, 2000-2006

Source: Calculation based on Table 5.

Figure 9. Disability rates based on age, sex and scheme, 2000-2006

Source: Calculation based on Table 5.
Disability rates based on pathology. The pathology which had the greatest impact on workers in the formal sector within the Argentinian system was “Cardiovascular” (39 per 100,000) followed by “Nervous system” and “Psychiatric” (23 and 15 per 100,000, respectively).

The ASDRs for men were higher than those for women for all pathologies except “Genital”, “Psychiatric” and “Osteoarticular”, the biggest difference in both absolute and relative terms being in “Cardiovascular”, responsible for 49 per cent of the difference between the sexes (Figure 10).

To analyse the link between pathologies and age, we looked first at the six pathologies with ASDRs higher than 10 per 1,000 (Figure 11.1), followed by the remaining six (Figure 11.2).

Among these, “Cardiovascular” stands out as having a strong relationship with increasing age: the lowest figure being among those younger than age 25 and the highest among those aged 45 or older. With the exception of “Cardiovascular”, the remaining pathologies begin at age 20, with defined separation ranges which are reduced as age increases.

The patterns vary as regards pathologies with ASDRs of less than 1 per 1,000: “Respiratory”, “Digestive” and “Genital” pathologies increase considerably with age, while those of the “Kidney and urinary tract” increase at a slower rate; finally, “AIDS” increases rapidly, peaking in the 35-40 age group before stabilizing at around 1 per 1,000.

Source: Calculation based on AFIP, CMC and CMP administrative records.
**Figure 11.1.** Disability rates based on age and selected pathology, 2000-2006

![Graph showing disability rates based on age and selected pathology](image1)

Source: Calculation based on AFIP, CMC and CMP administrative records.

**Figure 11.2.** Disability rates based on age and selected pathology, 2000-2006

![Graph showing disability rates based on age and selected pathology](image2)

Source: Calculation based on AFIP, CMC and CMP administrative records.
Figure 12. Normalized disability rates based on age, pathology and scheme, 2000–2006

Taking all twelve pathologies into account, “Respiratory” is the one which increases most with age, followed by “Cardiovascular” and then “Ductless glands”, while “AIDS” does not seem to increase with age.

Although the difference is only slight, the impact of the pathologies on the two schemes is not the same. The age structures of the two schemes are completely different (See Figure 6). Thus, in order to compare the disability rates by pathology and by scheme we need to calculate the corresponding ASDRs (Figure 12).

The ASDRs for the PAYG scheme are higher than those for the system of individual accounts for all pathologies except “AIDS”, which has slightly more impact under the latter. Of note is the “Psychiatry” pathology, which shows the greatest difference between the schemes in both absolute and relative terms, being responsible for one third of the difference. When combined, “Nervous” and “Psychiatric” disorders account for about 50 per cent of the difference between the schemes.

Comparisons with international experience

In this section, disability rates in Argentina for each age group are compared with specific studies and/or tables used in other countries. This is done to discover
whether the estimated disability rates per age group in the Argentinian social security system follow the same pattern and are at fairly similar levels to those of other countries.

It is important to note that definitions of disability differ depending on the country and there are not many studies that differentiate between age groups when estimating the risk of disability. Moreover, the risk of disability is also affected by differences in the population groups selected.

The international experience available was as follows:

- **Colombia**: Col_1994. Gender-based table published by the Superintendencia Bancaria Colombiana (Colombian Banking Superintendence) for use in the social security sector (SBC, 1994).
- **Italy**: INPS_84/86. Gender-based table issued by the Istituto Nazionale della Previdenza Sociale (National Social Insurance Institute — INPS) concerning office workers who participated in the mandatory social security system from 1984 to 1986 (Coppini, 1999).

Figure 13.1 shows the disability rates by age group for men (including EISS_97, even though this table does not provide separate data for men and women). The patterns tend to be fairly similar. The rates for USA_1998, USA_2004, Col_1994 and EISS_1997 are strikingly high in the young age groups, the gap becoming relatively narrower as age increases. The rates for INPS_84/86 and Chi_92/94 can be superimposed on those of the Argentinian system, indicating similar levels.

Higher levels do not necessarily imply a higher level of risk for the country’s population as a whole, because the selectivity of exposed workers may have significant effects. It is worth noting that the Italian figures take business employees only into account (Coppini, 1999) as do those for the Argentinian system, while that of the United States includes all workers covered by the Social Security Administration (SSA) (Zayatz, 1999 and 2005).

Female disability rates for the Argentinian system are in line with international patterns and very close to, although slightly higher than, those for Chile (Chi_92/94). Recent rates in USA_2004, USA_1998, Col_1994 and INPS_84/86 have been higher for all age groups (Figure 13.2). The differences even out as age increases, as a result of the reduced effect of selection.
Linear regression has been used to compare, synthetically, behaviour by age and sex in Argentina and other countries (prior logarithmic transformation):

$$\ln(\text{Arg}_{x,s}) = \alpha + \beta \cdot \ln(\text{I}_{x,s})$$

Where $\alpha$ and $\beta$ are the parameters we are seeking (by quadratic minimization), $\text{Arg}_{x,s}$ and $\text{I}_{x,s}$ are the disability rates by age $x$ and sex $s$ for Argentina and the population $i$-th, respectively.

$\alpha$ indicates whether the gross disability rate in Argentina is lower (less than zero) or higher (above zero) than that of the other study and $\beta$ indicates whether the increased risk of disability per age group in Argentina is higher (greater than one) than the study in question or lower (less than one).

Table 6 shows the estimated parameters. The increase in disability rates per age group is higher in Argentina than in the other country studies, particularly USA_2004, USA_1998 and EISS_1997, and higher for men than for women.

Comparing the disability levels expressed by the $\alpha$ coefficient, the level in Arg_00/06 is lower than that of the other countries for both sexes except for Chi_92/94, while it is much lower than USA_2004, USA_1998 and Col_1994 and closer to INPS_84/86. Finally, the coefficients of determination close to 100 per cent are in line with the relatively linear curve of the logarithms of the disability rates.
**Figure 13.2. International disability (Female)**

![Graph showing disability rates per thousand by age for different sources: USA_2004, USA_1998, Col_1994, INPS_84/86, Arg_00/06, Chi_92/94.](image)

Source: Calculation based on Table 6 and AFIP, CMC and CMP administrative records.

**Table 6. Synthetic comparison of the risk of disability for Argentina 2000-2006, based on international studies**

<table>
<thead>
<tr>
<th>Disability</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>alfa</td>
<td>beta</td>
</tr>
<tr>
<td>Arg_00/06</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>EISS_1997</td>
<td>-0.69</td>
<td>1.20</td>
</tr>
<tr>
<td>USA_1998</td>
<td>-2.76</td>
<td>1.84</td>
</tr>
<tr>
<td>USA_2004</td>
<td>-3.59</td>
<td>1.91</td>
</tr>
<tr>
<td>Col_1994</td>
<td>-1.35</td>
<td>1.12</td>
</tr>
<tr>
<td>INPS_84/86</td>
<td>-0.22</td>
<td>1.16</td>
</tr>
<tr>
<td>Chi_92/94</td>
<td>0.13</td>
<td>1.16</td>
</tr>
</tbody>
</table>

*Note:* The coefficients correspond to the lineal regression between the ln of the disability rates by age, with Arg_00/06 as a dependent variable.

*Source:* Calculation based on Table 5 and AFIP, CMC and CMP administrative records.
The results obtained in this survey constitute an original contribution to studies on disability insurance risk in Argentina and for other developing countries in general.

To estimate the risk of disability in Argentina, detailed information is available for the period 2000-2006. During this period, the CMPs issued 94,000 decisions on disability pensions, of which 63 per cent of claims were awarded. A total of 22 per cent of decisions were contested, but only 24 per cent of these were reversed by the CMC, the equivalent of 5 per cent of CMP decisions. This figure differed considerably depending on the scheme, with many more decisions reversed under the system of individual accounts than under the PAYG scheme. The annual variation as regards the main pathologies for which the TDBs were awarded was relatively small and, generally speaking, the awards made under the Argentinian social security system were similar to those of other countries, with a relatively high proportion of “Cardiovascular” and a low proportion of “Osteoarticular”.

The GDR was 1.46 per 1,000 for the Argentinian social security system as a whole. After controlling for the impact of age, the risk for men (1.66 per 1,000) was 74 per cent higher than for women (0.95 per 1,000).

As indicated by the empirical evidence (Angulo, Andrade and Arteaga, 1995; Coppini, 1999; Zayatz, 1999; Altieri, 2002), our study confirmed that the risk of disability increases with age for both sexes. This point is of vital importance when projecting the quantity of disability pensions and the resulting costs for the system. If disability rates by age and sex remain stable over time and the population contributing to the SIPA ages in line with the general population trend, it is reasonable to expect a considerable increase in the quantity (or proportion) of disability pensions and thus of costs.

In addition to an analysis of the risk of disability broken down by age and sex, an analysis of Argentina’s schemes (or subsystems) is equally indispensable — not least in the light of the most recent modification to the country’s social security system. In comparing the risks faced by contributors to the PAYG scheme and those contributing to the system of individual accounts, it is essential to neutralize the distorting effect of the age structure for each population. Once neutralized, the ASDRs provide a summary of the disability levels for each scheme. The ASDR for the PAYG scheme was 1.7 per 1,000, while that of the system of individual accounts was 1.4 per 1,000. The gap between the schemes is higher for women, although it evens out in the younger and older age groups. It is worth noting that the variation between the schemes may be the result of different rates of appeal and the reversion of decisions, which may account for about 20 per cent of the difference. The ASDRs of the PAYG scheme are higher than those of the system of individual accounts for all pathologies except “AIDS”, the biggest absolute and relative difference being that for “Psychiatric” pathologies, responsible for 32 per cent of the difference between the
schemes, which if cumulated with “Nervous disorders” accounts for approximately 50 per cent of the difference. This point is controversial, the basic hypothesis being that there should be no difference between the schemes, but elucidating the large difference recorded and assessing other potential explanatory variables was beyond the objectives of the current study.

The pathologies observed here present a risk of disability that increases with age, with the exception of “AIDS”, which remains stable at approximately 1 per 1,000 beyond age 40. The pathology with the highest rate of risk of disability is “Cardiovascular” (39 per 1,000) — this pathology shows also the greatest difference between the sexes in absolute and relative figures; the figures for “Genital”, “Psychiatric” and “Osteoarticular” pathologies are higher for women.

This knowledge of the risk of disability rates per pathology can enlighten insurance policy decision-makers as to which pathologies have the greatest impact on the working population, enabling them to adopt appropriate prevention measures.

Studies carried out concerning the projected costs of the Argentinian pension system as regards disability benefits (Rofman, Stirparo and Lattes, 1997; Secretaría de Seguridad Social, 2005; Cetrángolo and Grushka, 2008) have used disability rates calculated by the American Society of Actuaries and tables taken from the “Pension Disability Table 1985”. The disability rates obtained here are below those of that table and, as a result, the costs for the Argentinian system can be expected to be below those projected in the above-mentioned studies. The disability table to be used for the projection of risks, the population affected and insurance costs is an area of contention that is often ignored and here we at least have a solid base of reference.

Authors such as Rasmussen (2006) associate disability pensions with hidden unemployment, noting the positive correlation between the unemployment rate and the overall disability rate, i.e. an increase in unemployment seems to lead to an increase in the disability rate. Based on the data of the present study and the unemployment rates published by the Instituto Nacional de Estadísticas y Censo (National Institute of Statistics and Surveys — INDEC), we have made a rough estimate of the relationship between sub-periodic rates. As shown in Figure 14, for the period under review there does seem to be a positive correlation between unemployment and disability rates.

This conclusion must be treated with caution, because in order to estimate annual disability rates we have used polynomial interpolation for three years of exposure to risk. The unemployment rates used for the period were taken from the On-going Household Survey carried out by the INDEC, which covers approximately 70 per cent of the urban population of the country and is obtained on the basis of the average rates published for the year.7

7. For the period 2000-2002 in respect of the rates published in May and October for the regular household census and for the period 2003-2006, the rates for the first and second semesters obtained from the on-going household surveys.
Figure 14. Annual disability rate vs. annual unemployment rate in Argentina, 2000–2006

\[
y = 16.369x - 8.1944 \\
R^2 = 0.7384
\]

Source: Based on authors’ calculations.

Bibliography


The RSA (Revenu de solidarité active) and back-to-work incentives in France

Denis Anne and Yannick L’Horty

Abstract Using an inventory of local and/or non-statutory transfers (droits connexes) in 13 French towns and cities, the article first measures the gains from returning to work for recipients of national, statutory means-tested benefits (Revenu minimum d’insertion — RMI, and Allocation parent isolé — API) by type of household before 2009. The reforms of national, statutory benefits carried out during the 2000s, especially those affecting the working tax credit (Prime pour l’emploi — PPE), failed to ensure that the recipients of means-tested benefits always stood to gain financially from returning to work. The effects of the reforms were offset by the effects of other measures. The article then simulates the effects of the introduction of the Revenu de solidarité active (RSA) in place of the RMI in 2009, and takes into account the way that local and/or non-statutory transfers are modified by increases in national, statutory transfers. We observe that the RSA eliminates the financial disincentives to returning to work for almost all localities and types of household. The article shows that the marginal tax rate of 38 per cent chosen by the government is very close to the upper limit compatible with a back-to-work incentive.

Keywords unemployment, means test, labour force participation, incentive, France
Introduction

In 2009, twenty years after the creation of the Revenu minimum d’insertion (RMI — Minimum Integration Income), the French system of means-tested benefits underwent a profound transformation with the introduction of the Revenu de solidarité active (RSA — Earned Income Social Supplement). The RSA replaced both the RMI and the Allocation parent isolé (API — Single Parent Allowance). Its objective is to ensure that “returning to work is always more profitable than staying on welfare, and that work should give everyone the guarantee of escaping and being protected from poverty”.

This change followed a long series of reforms, each intended to avoid the phenomenon wherein returning to work results in lower income than staying on welfare alone. From these reforms, two questions arise. How effective were the reform measures? Has the RSA proven more effective?

These are difficult questions to answer, because the French measures of income support are so complex. To start with, we must distinguish between two types of welfare benefits. There is a national, statutory platform of primary welfare. Currently, this consists of means-tested benefits such as the RSA and family allowances such as the childcare allowance, back-to-school allowance, housing benefits, etc. Then there is a huge range of secondary benefits that are known as “droits connexes”, local and/or non-statutory transfers. Some of these are statutory: the Christmas bonus, television licence fee exemptions, “social tariffs” for telephone and electricity utility services, the CMU (Couverture maladie universelle — Universal Health Care Cover) and the complementary CMU (Couverture maladie universelle complémentaire — CMUc). Other welfare benefits are non-statutory: the conseils généraux (“local governments”) are responsible for social welfare at the level of each département and give a variety of benefits to poor households, such as housing support, mobility or holiday allowances; local family allowance funds have a degree of autonomy in the distribution of benefits to recipients; social welfare/community centres provide school meal allowances, leisure centres and holiday camps; municipalities apply reduced entry prices for sports facilities and cultural attractions (museums, exhibitions, etc); and the régions, who are responsible for transport, have developed travel benefits to meet the costs of travelling by public transport.

Taken individually, these secondary benefits are of relatively low value, but collectively they constitute an essential additional resource for poor households. These benefits account on average for up to 20 per cent of the total resources of poor inactive households (Anne and L’Horty, 2002). Their role cannot be ignored, especially if our aim is to evaluate the gains for poor households of returning to work.

1. Extract from the “Letter of mission” from the President of the Republic of France and the Prime Minister to the High Commissioner for Active Solidarity against Poverty (Hirsch, 2008, p. 10).
The problem is that each of these benefits has its own particular payment scale, varying from one institution to another and from one locality to another, and there is no exhaustive record of these local scales. This may help explain why these transfers are not taken into account in studies on social transfers, and more especially in the national simulations carried out by government departments responsible for labour market or economic affairs for the purpose of informing public policy.

A number of studies have estimated the monetary gains of starting work instead of remaining a “jobseeker” (Gurgand and Margolis, 2001; Laroque and Salanié, 1999, 2000; L’Horty and Ouvrard, 2006). Nevertheless, measuring the monetary gains from returning to work does not mean that these gains modify labour supply behaviour. The effects of monetary gains on the job-seeking behaviour of minimum income beneficiaries are complex (Dubet and Vérétout, 2001; Gurgand, 2002). Many jobseekers would accept a job without any income gain; incentive allowances may have some unexpected effects on working behaviour (Mikol and Rémy, 2010). However, it would be of interest to observe if accepting a job modifies the income of social allowance recipients. The aim of the present study is to propose a measurement of the gains to be had from returning to work and then a measurement of the effects of the 2009 RSA reform of means-tested benefits that takes into account all social transfers, including local and/or non-statutory benefits. For this purpose, we use a method of typical cases and an inventory of all the local and/or non-statutory benefits offered in 13 French towns and cities (communes), including Paris, Lyon and Marseille. The data were collected in late 2006 and early 2007 (i.e. prior to the 2009 RSA reform). They enable us to measure the gains from returning to work for recipients of means-tested benefits (i.e. the RMI and API) according to the type of household (using seven different types of household).

The article is structured as follows: the next section introduces our methodology and the hypotheses adopted to construct the data. We then describe the results of the descriptive data processing, thereby providing an account of the gains from returning to work before the introduction of the RSA in 2009. This is followed by a discussion of the results of our simulations for the RSA and its effects on the income of recipients of means-tested benefits when they return to work. Final conclusions are then presented.

Hypotheses and methodology

Enacted by the law of 1 December 2008, the RSA came into force in 2009, replacing both the RMI and the API. When it was introduced in 1988, the RMI had itself represented a major reform of the French welfare system, instituting a basic form of means-tested universal allowance for anyone aged 25 or older and for younger adults with children (the amount of the allowance increasing for couples with children). More than a social income, the RMI took the form of an “integration contract”. To receive the RMI, claimants had to sign this contract and in return could
obtain professional assistance, vocational training or social and housing assistance. Thus, its effects could be uncertain: positive if it opened a pathway to employment, but negative if it represented a “workfare” benefit — i.e. a legal requirement to accept any sort of work (Castel and Laé, 1992; Duvoux, 2009). The API was reserved for single parents with children younger than age 3.

The new RSA benefit is based on a specific scale so that a rise in income from earnings from work is not cancelled out by a fall in income from transfers. The aim is to guarantee that returning to work systematically increases the income of poor households. This objective had not been achieved with the RMI — even if this was not the primary goal of the RMI, which was to provide a differential allowance combined with a temporary incentive mechanism.

In a context of intense parliamentary and legislative activity, and given the quantity and quality of the studies conducted on these issues, we believe that two important questions must be addressed. First, have the French reforms of the last ten or so years succeeded in eliminating or, at least, limiting the range of wages for which gains from returning to work are insufficient for those on means-tested benefits? If this proves to be so, it would be hard to understand the rationale for a new, wide-reaching reform such as the RSA. Whence the second question: what contribution does the RSA actually make?

These two questions can only be answered satisfactorily if we consider the architecture of social transfers in its entirety. It is not acceptable to limit the observation solely to national and statutory transfers. We must take into consideration all sources of income for poor households, including local benefits and non-statutory transfers. These latter transfers represent on average up to a fifth of the resources of a household with no earned income, a proportion that cannot be neglected.

We use the micro-simulation model ÉQUINOXE to study local and/or non-statutory transfers in ten medium-sized French towns (between 50,000 and 100,000 inhabitants) in five different départements (Baillon et al., 2006) and the country’s three largest cities (Paris, Lyon and Marseille). The scales of local and national welfare benefits were collected in late 2006, but we have taken into account certain changes that occurred in 2007. Rural localities have been excluded from the study. We have verified on several examples that small localities distribute very few local and/or non-statutory transfers. The localities have been anonymized for the presentation of results.

The field of local and/or non-statutory transfers is rather difficult to delimit. It covers statutory and non-statutory benefits; national and local benefits; monetary aid; other support in the form of in-kind transfers, household goods, price reductions/subsidized fees for services and access to loans; longer-term support (telephone line rental subscriptions) and others of an exceptional nature; benefits based on a scale and others based on social evaluation; etc.2

2. All the details about the transfers taken into account in this study are given in Anne and L’Horty (2009).
Here, our aim is to simulate the importance of local and/or non-statutory transfers in the resources of typical households. Emergency and exceptional benefits are not taken into account. We take into account only regular benefits, either means-tested or conditional on the status of the claimant (RMI, API, etc.). The present study does not take into consideration childcare benefits, although these benefits are likely to have an important influence on women’s decisions to return to work. The gains obtained by households with two working adults are not incorporated either (for example, some localities reserve certain services for families with two working parents). In the case of price reductions, we have directly incorporated the value of the price reduction, assuming a hypothesis about the frequency of use of the facilities in question.

**RMI, local transfers and gains from returning to work**

A great deal of information can be obtained from the descriptive use of local social scales. As the scales were collected on two different occasions (a first inventory was carried out in 2001 and a second completed in 2007), this section will identify the major changes that have taken place and assess the impact of the numerous reforms.

**Diversity of local and/or non-statutory transfers**

One preliminary observation should be made: the scales of local transfers differ greatly, both from one town/city to another and between different benefits. This result, already established in Anne and L’Horty (2002), is confirmed by the 2007 data. In each locality, there are usually as many different scales as there are different benefits. And for each benefit, there are as many different scales as there are localities in our study.

Alongside this observed diversity, one can also mention certain similarities. First, although the scales of local social benefits are all different, their general appearance is often similar. The typical benefit consists of a fixed rate up to a given threshold of resources, above which individuals are ineligible. When there are several thresholds on a scale, the benefit is set at a fixed rate between each threshold. So, the scales of local and/or non-statutory transfers look like stairs — often with one step only. But the height and depth of the step may differ greatly between benefits and localities.

Next, local social benefits are most often of low value. On average, the value of these benefits lies between EUR 150 and EUR 250 per year, depending on the locality and the type of household. Taken on an individual basis, each local benefit represents, on average, barely a few dozen euros per month for a household with no earned income. However, these benefits cannot be neglected, because they are so
numerous: in total, there are nearly twenty local and/or non-statutory allowances that supplement the income of disadvantaged households.

In Table 1, we have aggregated these benefits and made a simple non-weighted average for the 13 localities covered by the present study. It can be seen that local and/or non-statutory transfers represented an increase of 15 to 20 per cent of the value of national and statutory transfers. These figures are slightly lower than those of our 2002 study, including for the three cities covered by both studies. This might be explained by the more restrictive hypotheses we have adopted concerning the conditions for the accumulation of benefits in the present study. The households where the share of local and/or non-statutory transfers was lowest were those receiving the API. This is related to both the high level of national and statutory transfers and the low level of local and/or non-statutory transfers. There are two reasons for this. First, by construction, certain of these transfers are reserved for children above a certain age (school meals, after-school care, etc.), and in our typical cases we assumed that the children of single-parent families receiving the RMI were aged 3 or older, while the API was reserved for children younger than age three. Second, unlike beneficiaries of the RMI, households that received the API were not entitled to the Christmas bonus, television licence fee exemption or reduced-rate telecommunications. These observations were valid for households with no earned income (Table 1, Panel A). When we assumed that earned income was half the value of the SMIC (Salaire minimum interprofessionnel de croissance — i.e. the minimum wage), the total value of local and/or non-statutory transfers in relation to all national and statutory transfers was very different, and could reach close to 40 per cent of those transfers (Table 1, Panel B).

No clear relation was found between household size and the level of droits connexes as a proportion of total transfers (Figure 1). In our previous published study (Anne and L’Horty, 2002), we found quite the opposite: the relative weight of local and/or non-statutory transfers increased with household size. This difference can be explained by the important growth in individual benefits, such as reduced transport fares provided by regional councils, which did not exist at the time of our first inventory. Further, we assumed that the frequency of use of sporting and cultural facilities did not depend on family size.

**Gains from returning to work**

There are certain situations where “work does not pay”. It is recognized that from a long-term perspective — i.e. going beyond the duration of the RMI “incentive mechanism”, wherein transfer income and earned income could be accumulated during the first few months after returning to work — the differential nature of the RMI may have meant that returning to work led to no monetary gain: excluding the initial incentive, any increase in earned income was entirely offset by a reduction in
Table 1. **Total value and relative weight of transfers by type of household (in euros per year and in %)**

**A. Households with no earned income**

<table>
<thead>
<tr>
<th>Type of Household</th>
<th>Single person</th>
<th>Couple (without children)</th>
<th>SPF¹ with API (1 child)</th>
<th>SPF¹ with RMI (1 child)</th>
<th>Couple (1 child)</th>
<th>Couple (2 children)</th>
<th>Couple (3 children)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of national and statutory transfers (in EUR)</td>
<td>7,916</td>
<td>10,640</td>
<td>13,578</td>
<td>12,209</td>
<td>13,224</td>
<td>17,291</td>
<td>21,287</td>
</tr>
<tr>
<td>Value of local and/or non-statutory transfers (in EUR)</td>
<td>1,563</td>
<td>1,712</td>
<td>1,095</td>
<td>2,475</td>
<td>1,955</td>
<td>2,600</td>
<td>3,204</td>
</tr>
<tr>
<td>Including value of local social benefits (in EUR)</td>
<td>918</td>
<td>948</td>
<td>777</td>
<td>1,728</td>
<td>1,134</td>
<td>1,755</td>
<td>2,310</td>
</tr>
<tr>
<td>Ratio of local and/or non-statutory transfers to total transfers (in %)</td>
<td>16</td>
<td>14</td>
<td>7</td>
<td>17</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Ratio of local and/or non-statutory transfers to national statutory transfers (in %)</td>
<td>20</td>
<td>16</td>
<td>8</td>
<td>20</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Ratio of local social benefits to total local or non-statutory transfers (in %)</td>
<td>59</td>
<td>55</td>
<td>73</td>
<td>70</td>
<td>58</td>
<td>68</td>
<td>72</td>
</tr>
</tbody>
</table>

Notes: ¹ SPF: Single-parent family. A single person with no earned income received EUR 7,916 of national transfers and EUR 1,563 of local and/or non-statutory transfers. Those transfers represented 16% of the total transfers.

**B. Households with earned income equal to 50% of the SMIC (minimum wage)**

<table>
<thead>
<tr>
<th>Type of Household</th>
<th>Single person</th>
<th>Couple (without children)</th>
<th>SPF¹ with API (1 child)</th>
<th>SPF¹ with RMI (1 child)</th>
<th>Couple (1 child)</th>
<th>Couple (2 children)</th>
<th>Couple (3 children)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of national and statutory transfers (in EUR)</td>
<td>1,700</td>
<td>4,340</td>
<td>8,290</td>
<td>6,506</td>
<td>7,741</td>
<td>11,722</td>
<td>15,823</td>
</tr>
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<td>Value of local and/or non-statutory transfers (in EUR)</td>
<td>505</td>
<td>1,712</td>
<td>800</td>
<td>2,489</td>
<td>904</td>
<td>2,599</td>
<td>3,216</td>
</tr>
<tr>
<td>Including value of local social benefits (in EUR)</td>
<td>464</td>
<td>948</td>
<td>635</td>
<td>1,741</td>
<td>710</td>
<td>1,754</td>
<td>2,321</td>
</tr>
<tr>
<td>Ratio of local and/or non-statutory transfers to total transfers (in %)</td>
<td>23</td>
<td>28</td>
<td>9</td>
<td>28</td>
<td>10</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>Ratio of local and/or non-statutory transfers to national statutory transfers (in %)</td>
<td>30</td>
<td>39</td>
<td>10</td>
<td>38</td>
<td>12</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>Ratio of local social benefits to total local or non-statutory transfers (in %)</td>
<td>92</td>
<td>55</td>
<td>79</td>
<td>70</td>
<td>79</td>
<td>67</td>
<td>72</td>
</tr>
</tbody>
</table>

Notes: ¹ SPF: Single-parent family. A single person with half of minimum wage of earned income received EUR 1,700 of national transfers and EUR 505 of local and/or non-statutory transfers. Those transfers represented 23% of the total transfers.

Source: Authors’ calculations, using the ÉQUINOXE micro-simulation model.
RMI as long as the exit point from the RMI had not been reached, corresponding to a marginal tax rate of 100 per cent. The distribution of net incomes as a function of gross incomes (Figure 2) shows that after a horizontal plateau, the household’s net income fell before rising (Figure 2, Panel A). This trough is characteristic of a zone in the distribution of incomes where “work does not pay”. This was observed only for single persons, couples without children and couples with more than two children. Further along in the distribution of incomes, there was a slight drop, forming a local peak. This peak corresponds to the exit point from complementary CMU: the household’s income fell when it was no longer entitled to complementary universal health care cover.

Does the working tax credit (Prime pour l’emploi — PPE), introduced in 2001 and reformed every year since, provide a solution to these “welfare traps”? It certainly affects them perceptibly, by provoking a sudden rise in income (Figure 2, Panel B). This occurs at the point where households become eligible for the working tax credit, when their earned income exceeds 0.3 SMIC (the value of the credit received in 2007 for a single person was EUR 322 at that level of earned income). The working tax credit is based on a scale that increases up to 1.0 SMIC and then decreases to zero at 1.3 SMIC, and it is increased by a fixed amount for each dependant in the household. The successive reforms have increased the credit for all

**Figure 1. Total value of transfers by type of household without earned income (average over the sample)**

Notes: SPF: Single-parent family. In 2007, on average in the 13 localities studied, a couple without children received annually EUR 10,640 of national transfers and EUR 1,712 of local and/or non-statutory transfers. Those transfers represented 14% of the total transfers.

Source: Authors’ calculations, using the ÉQUINOXE micro-simulation model.
Figure 2. Net income from statutory national transfers as a function of gross income (average over the sample)

Panel A. Excluding working tax credit (PPE)

Panel B. Including working tax credit (PPE)
wage levels, but most strongly around the half-SMIC level. However, these reforms have not been sufficient to make up for the loss of income caused by the graduated nature of national transfers, and they have failed to remove those zones in the distribution of incomes where “work does not pay”.

However, when we incorporate the incentive mechanism as it existed before the introduction of the RSA, the “welfare trap” effect disappears (Figure 2, Panel C). Extended by the Law against exclusion of 1998 (Law No. 98–657), the incentive took the form of the temporary possibility to accumulate earned income and benefits. When recipients of the RMI returned to work, they were allowed to receive 100 per cent of their benefit during three months and then 50 per cent during the next nine months. If we take into account national benefits only, as in

3. A feature of the RSA is to make the incentive mechanism permanent. Bearing in mind that with the RSA the marginal tax rate is 38 per cent, the recipient loses EUR 38 of benefits for every EUR 100 of earned income. This 38 per cent is higher than the zero per cent for the first three months of the previous incentive mechanism, but lower than the 50 per cent for the following nine months.
Figure 2, Panel C, then this incentive combined with the working tax credit was strong enough to avoid the disincentive effects of the RMI’s differential nature. If we ignore local benefits and non-statutory transfers for the time being, then this result repeats one of the main conclusions of the study by Hagneré and Trannoy (2001).

What happens if we now take local and/or non-statutory transfers into account? These benefits are targeted narrowly on the most disadvantaged households, and can therefore strongly reduce any gains from returning to work, even if each separate benefit is of low value. To verify this, it is helpful to use a synthetic concept first proposed in Anne and L’Horty (2002): “reservation working time”. This is the minimum number of hours per week that a person must work, with earnings equal to the minimum wage, to earn more than they would receive when unemployed. Figure 3 illustrates the way this indicator is calculated. To earn the equivalent of the means-tested benefit received by an unemployed person (namely, EUR 9,479 per year on average in the towns and cities of our sample), a single person has two options. He or she can either work the equivalent of 6.5 hours per week on the minimum wage, or work more than 26 hours per week on
the minimum wage. These calculations are performed on an annual basis for a net minimum wage (when we take as our reference a part-time job earning the minimum wage, we calculate in terms of an annual income equivalent to a part-time job worked during the whole year).

Figure 4 presents net income as a function of gross income for each type of household when all transfers are taken into account. Local and non-statutory benefits increase the disposable resources, particularly for households with little or no earned income (Figure 2, Panel B; and Figure 4). Yet, when taking into account all transfers, including local and/or non-statutory transfers, this widens the range of incomes for which “work does not pay” (Figure 5, Panels A and B). All types of households are now affected by situations where “work does not pay”.

By calculating the reservation working times, we can visualize the amplifying effect of non-statutory and local benefits (Figure 6). When we took into account national and statutory transfers only, all household types experienced situations where “work does not pay”. When all transfers are considered, the reservation working time increases sharply for all types of household. For all localities (communes) and all types of household, there was only one case out of the 91 typical cases where the reservation working time was zero, when local benefits are taken.
Figure 5. *Net income as a function of gross income (average over the sample)*

Panel A. *Couple with two children*

Panel B. *Single-parent family (one child) on RMI*

Source: Authors’ calculations, using the ÉQUINOXE micro-simulation model.
into account (Table 2). For RMI recipients, the annual equivalent of a part-time job earning the minimum wage was not sufficient to make up for the loss of benefits, whatever the type of household. For families with two or more children, even a full-time job earning the minimum wage was not sufficient.

These conclusions are the same as we obtained in our 2002 study (Anne and L’Horty, 2002), although that study did not take the API into account. This may seem surprising given the number of reforms adopted since then with the express purpose of reducing the scale and frequency of welfare traps: for instance, the reform of the local council tax in 2000; the reform of housing benefits in 2001; the introduction of the working tax credit in the same year (followed by extensions to its field of application every year since then); and the “back-to-work bonus” of EUR 1,000 in 2005, the field of which was then widened in 2006 (this bonus is excluded from our study). Admittedly, these reforms did have a real effect, as we have seen in the case of the working tax credit, which substantially modified households’ net incomes. They were not, however, sufficient to compensate for the graduated nature of social transfers for low-income households. Moreover, the working tax credit (PPE) appears to have a rather paradoxical effect. Figures 2 (Panels B and C), 4 and 5 reveal that becoming eligible for the PPE at an earned

Figure 6. Reservation working times with and without local and non-statutory transfers (average over the sample)

Note: SPF: Single-parent family.
Source: Authors’ calculations, using the ÉQUINOXE micro-simulation model.
income of 0.3 SMIC makes the corresponding jobs locally “worthwhile”, but a job paying 0.5 or 0.7 SMIC is not. Thus, the PPE makes only the lowest-paid jobs worthwhile.

The benefit reforms of the 2000s did not remove the welfare trap because they were counteracted by other measures with opposing effects on the gains to be had from returning to work. These measures included travel benefits provided by regional councils (such as free bus/metro passes for RMI recipients in the Île-de-France region since 2007), exemption from television licence fees for RMI recipients, reduced telephone rates launched in 2000, the designation of prices for

### Table 2. Reservation working time: Reservation working time incorporating local benefits (RMI and PPE) (In net weekly hours)

<table>
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<th>Couple (no children)</th>
<th>Single person</th>
<th>SPF 1 with RMI (1 child)</th>
<th>SPF 1 with API (1 child)</th>
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</tbody>
</table>

1 SPF: Single-parent family.

*Note:* Interpretation: in commune 01, with RMI and PPE, but without the incentive mechanism, a couple with three children must have an earned income representing 47 hours of net minimum wage to earn more than they would receive by remaining unemployed. Field: the table incorporates national and statutory transfers, local benefits and other non-statutory allowances available in the 13 localities of our sample under the hypotheses defined for typical cases and household consumption.

*Source:* Authors’ calculations, using the ÉQUINOXE micro-simulation model.
“necessity goods”, and a reduced rate for electricity consumption. These benefits were extended again in 2008 with the introduction of a special “solidarity rate” for gas used as a home fuel.

The effect of the RSA on gains from returning to work

In this section, we study the consequences of the replacement of the RMI and the API by the RSA. The intention behind the RSA is to avoid both the differential nature of the RMI and the temporary nature of the incentive mechanism. When recipients of the RSA return to work, their RSA is reduced by 38 per cent, leaving them with a net gain of disposable income, ceteris paribus, of 62 per cent of their earned income. This marginal tax rate of 38 per cent is more generous than that of the RMI with its incentive mechanism, which represented a marginal tax rate of 50 per cent for a nine-month period (after the initial three-month phase of total accumulation). In the absence of the incentive mechanism, the RMI’s marginal tax rate was 100 per cent. For a single person, the exit point from the RSA corresponds to income equal to 1.04 times the full-time minimum wage. State funding of the additional income corresponding to the RSA allows us to break down the benefit into “basic RSA”, which corresponds to the former RMI (or API) and is funded by the départements, and “working RSA”, which is funded by the state (see Figure 7).

The working tax credit (PPE) has been maintained in its entirety. The scale that is most favourable to the beneficiary, from either the RSA or the PPE, is chosen always. The RSA scale is applied in the case of low earned incomes, and thereafter it is that of the PPE, but for modest incomes only. In certain cases, the RSA has been accompanied by a redefinition of the conditions governing the attribution of national non-statutory transfers. The television licence fee exemption given to recipients of the RMI was maintained in 2009, and remained on a means-tested basis until 2011, when it was abolished. The reduced-level local council tax has been abolished also.

As regards local benefits, we assume that the introduction of the RSA was not accompanied by any reforms of local benefits and other non-statutory transfers. The scales and conditions of eligibility remain the same: the benefits hitherto given to RMI recipients are now given to RSA recipients. We adopt the same hypothesis for beneficiaries of the API. The stability of conditions of eligibility for local benefits has different effects depending on the nature of the benefit. For status-

4. We have not included the “aide à la cave” — a heating oil subsidy worth EUR 200 per year in 2008, but which was abolished in 2009.
5. This extension is not taken into account in our simulations.
6. We do not assume a merger of the related entitlements between the RMI and the API; we assume that the differences in access are maintained.
based benefits, the eligible public has been widened by extending the criterion of status to all RSA recipients, generating an additional cost for the institution paying the benefit. For means-tested benefits, the RSA is included in the income base (i.e. the different resources taken into account to calculate eligibility and the level of benefit paid) whenever this was done previously for the RMI. This has the effect of increasing the level of recipients’ income taken into account, since the RSA is more generous than the RMI — hence, reducing the amount of benefits paid.

**In the absence of local reforms, the RSA achieves its objective**

Under these hypotheses, our simulations show that the RSA is spectacularly effective in terms of the gains achieved from returning to work. On average, over our sample of thirteen towns and cities and for all types of household, the RSA eliminates all ranges of wages for which working represents a loss of income compared to remaining inactive (Figure 8). To appreciate the scale of the difference between “before” and “after” the RSA, the curves can be compared to those in Figure 4.
Instead of dropping sharply, as they did for households leaving the RMI, local and non-statutory transfers are gradually reduced as earned income increases (Figure 9). This gentle decline is linked to the effect of the income base: the RSA is included in the income base used to calculate certain related benefits, thus reducing the value of those benefits. The sudden fall in benefits associated with leaving the RMI, linked to the effect of status-based benefits, now occurs at a much higher level in the distribution of incomes, at the RSA exit point, which is situated at a level where the earned income is high enough to cushion the fall in transfer income. As the threshold effects have shifted, there is indeed a net increase in disposable income compared with the situation of not working. Remember that these calculations do not take into account the abolition of the council tax reductions previously enjoyed by RMI recipients.

We can compare the effectiveness of the RSA with that of previous schemes pursuing the same objective of providing a monetary incentive to return to work: the PPE and the RMI with its temporary incentive mechanism that permitted the accumulation of earned income (Figure 10). The PPE has very little effect on the profile of disposable income and fails to eliminate the range of wages for which gains from returning to work are insufficient. The RMI temporary incentive mechanism, in contrast, produces a profile quite similar to that of the RSA. When the RMI is
Figure 9. *Average value of local and non-statutory transfers for a single person (unweighted average of the values over the sample)*

Source: Authors’ calculations, using the ÉQUINOXE micro-simulation model.

Figure 10. *Net income (all transfers) of a single person by type of means-tested benefit (non-weighted)*

Source: Authors’ calculations, using the ÉQUINOXE micro-simulation model.
added together with the PPE (which is not possible with the RSA, given that only the more generous of the two — PPE or RSA — is awarded), it provides a disposable income slightly higher than that of the RSA, for a narrow range of incomes between 0.3 and about 0.5 SMIC. For higher levels of income, the RSA increases disposable income considerably compared with the RMI incentive mechanism.

The RSA reduces or eliminates most of the threshold effects that the RMI created in local and non-statutory transfers. Instead of amplifying the RMI’s marginal tax rate of 100 per cent, means-tested local transfers gradually decrease as the marginal tax rate of 38 per cent reduces the RSA. Conversely, it does not eliminate status-based effects: there is still an abrupt fall in those transfers at the exit point from the benefit, but this occurs later because the RSA exit point is by definition higher than that of the RMI. In the simulations studied here, it occurs at the level of an earned income ranging between 1 SMIC (single person) and 2.1 SMIC (couple with three children).

The RSA’s effectiveness in providing a back-to-work incentive can be measured by comparing the reservation working times before and after the implementation of the reform. Remember that this concept does not prejudge the behaviour of households in these situations; it simply measures the wage level above which disposable income is permanently higher than that obtained with no earned income. To facilitate the comparison, we have translated this wage level into weekly hours worked on the net minimum wage. In this perspective, Table 3 compares different types of means-tested benefit, indicating the minimum, average and maximum reservation working time, taking into account the local and non-statutory transfers in the thirteen towns and cities studied.

While the PPE has superficial effects on the gains from returning to work, measured here by the reservation working times, the RSA has a very clear impact on these gains. With a marginal tax rate of 38 per cent, the RSA makes any level of work “worthwhile” compared with the benefits available to households remaining inactive, in every town and city and for almost every type of household. The RSA therefore fully achieves its intended purpose, even when we take into account local and non-statutory transfers and the interdependence between benefit scales and national and statutory transfers.

Table 3 shows that with the RMI, in all the towns and cities studied, a certain number of hours must be worked before the disposable income of the household rises definitely. Depending on the type of household, a minimum of somewhere between a part-time and a full-time week on the minimum wage is needed before income increases. The RMI incentive mechanism with a marginal tax rate of 50 per cent temporarily removes these welfare traps in all localities and for three types of household (couples with one or two children and single-parent families on API). For the other types, notably single persons who constitute the majority of recipients of these benefits, there are localities where the reservation working time remains
Table 3. Reservation working times before and after RSA: Minimum, average and maximum over the sample (in weekly hours on the net minimum wage)

<table>
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<th>Couple 3 children</th>
<th>Couple 2 children</th>
<th>Couple 1 child</th>
<th>Couple no children</th>
<th>Single person</th>
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<th>SPF(^1) on API (1 child)</th>
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1 SPF: Single-parent family.
2 MTR = Marginal tax rate. It corresponds to the proportion by which the benefit (in this case the RSA) is reduced following a rise in earned income; the marginal tax rate of 38 % chosen for the RSA means that for each extra euro earned in wages, the RSA is reduced by 38 cents: ceteris paribus, the disposable income therefore increases by 62 cents. The marginal tax rate can be calculated: \( 1 - \frac{\Delta RD}{\Delta RA} \) where \( \Delta RD \) is the variation in disposable income and \( \Delta RA \) the variation in earned income.

Note: In 2007, in the 13 localities studied, taking into account local and non-statutory transfers but not the working tax credit (PPE), a single person had to work between 24 and 31 hours on the SMIC (27 hours on average) to obtain a disposable income higher than that obtained with no earned income, in the case of the RMI without PPE. The average reservation working times in this table are the averages of local reservation times; they are not directly comparable with those presented in Figure 6.

Source: Authors’ calculations, using the ÉQUINOXE micro-simulation model.
high despite the incentive mechanism and the PPE, approaching or even exceeding a full-time working week on the SMIC.

With a marginal tax rate of 38 per cent, and even if it cannot be accumulated with the PPE, the RSA eliminates the range of wages for which gains from returning to work are insufficient, where “work does not pay”, in every locality studied and for almost every household type. Out of the 91 situations studied (13 localities and 7 household types) only two have a non-zero reservation working time. Even in these two cases, the values are very low (five hours and one hour per week on the SMIC, respectively).

By varying the marginal tax rate of the RSA, we show that above a 40 per cent rate, the range of wages for which gains from returning to work are insufficient reappear. The rate of 38 per cent chosen by the government is therefore close to the maximum possible in terms of the declared objective of producing a monetary incentive for returning to work.

However, our results come from a simulation undertaken before the introduction of the RSA in 2009. Some posterior studies try to estimate the real consequences of RSA reform (Bourguignon, 2010; Cour des comptes, 2011; Gomel and Méda, 2011). Although these are based on short-term data or localized areas, they confirm that the “working RSA” increases income for many people. The RSA does not change the situation of households without any active members (but it was not designed with this goal in mind). Finally, even if the RSA does improve the situation of the working poor, it does not seem to make people work more. Beyond this observation, the difficulties faced by the French labour market since 2008 prevent us from drawing any further conclusions on this matter.

Conclusions

Local and/or non-statutory transfers cover a vast set of benefits provided to low-income households to top-up national and statutory benefits. These sources of secondary support have been largely neglected in studies on the impact of benefit reform. However, their analysis is indispensable if we are to develop an accurate assessment of the impact of benefit reform on incomes. In this study we have used the ÉQUINOXE micro-simulation model to take into account the interdependence between local or non-statutory transfers and national statutory benefits. Our aim has been to evaluate the effect on the gains from returning to work of the introduction of the RSA, which replaced the RMI and the API.

The present study extends and updates the work of Anne and L’Horty (2002), using data from 2007 and a new sample of cities and towns. In the selected 13 localities, we have analysed the total value of benefits as a function of household income, exhaustively incorporating every national and/or statutory benefit and every local and/or non-statutory benefit as long as they have or can be assigned a monetary value and are calculated on the basis of a scale.
Although local and non-statutory transfers are most often of low value (somewhere between EUR 150 and EUR 250 per year for each specific local benefit, depending on the locality and type of household), their large number makes them too important to ignore: the income of poor households may be complemented by close to twenty transfers and, overall, these benefits increase the value of national and statutory transfers by 15 to 20 per cent.

So, despite their low individual value, these multiple benefits, targeted very narrowly on the poorest households, can strongly reduce the incentives to return to work. For recipients of the RMI (prior to 2009), our simulations show that the annual equivalent of a part-time job on the minimum wage was not sufficient to make up for the loss of benefit income, whatever the type of household. For couples with two or more children, even a full-time job on the minimum wage could not compensate for the loss.

This result is very similar to the one we obtained in our previous study using data collected in 2001. This is quite surprising given the scale of the reforms introduced throughout the 2000s and the fact that these impacted positively on the gains to be had from returning to work. This was particularly so for the PPE, which substantially modified households’ net incomes. But these reforms hardly had any effect on the range of wages for which returning to work entailed a loss of income for those on benefits. The PPE in particular made only the lowest-paying jobs more worthwhile.

If the reforms of social transfers of the 2000s failed to eliminate welfare traps, it is because their effects were counteracted by the effects of other social transfer reforms, which offset the gains to be had from returning to work.

The RSA was introduced to replace both the RMI and the API with the explicit goal of making work pay. According to our simulations, it has made returning to work worthwhile in almost every locality and for almost every type of household: out of the 91 simulated situations (seven typical cases in thirteen localities), only two continue to experience a loss of income, and only over a very narrow range of working hours.

The marginal tax rate of 38 per cent (the amount by which the RSA is reduced for each rise in earned income) is close to the 40 per cent limit, the level at which negative effects on the back-to-work incentive reappear locally. Here, the average reservation working times are still low, but the maxima are comparable to those observed with the RMI. The same holds true with a marginal tax rate of 50 per cent, corresponding to the temporary incentive mechanism that existed before the RSA.

Further study is required to assess the robustness of these results under different hypotheses concerning the reactions of local benefit providers. As it stands, with the RSA earned income “exit point” being higher than that of the RMI and with new beneficiaries being eligible to receive secondary benefits based on their status as an RSA recipient (for example, the television licence fee exemption), the scenario studied here would lead to a marked increase in local benefit budgets.
Bibliography


The decline of substitute pathways into retirement: Empirical evidence from the Dutch health care sector

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Abstract Early retirement schemes and disability insurance in the Netherlands have undergone several reforms in recent decades. The reforms have increased incentives for older workers to continue working and have decreased the roles of “substitute pathways” into retirement. This article gives an overview of the reforms and, using administrative data for workers in the health care sector, tests a number of hypotheses about the labour market participation of older workers. The results offer two main findings: i) that the Dutch reforms have indeed been effective, as the labour force participation rate of older workers has increased; and ii) the concept of “substitute pathways” has become less relevant as the use of disability insurance has been closed off as an exit route to early retirement. Nevertheless, caution is required before generalizing the implications of these Dutch findings to other OECD countries.

Keywords labour force participation, early retirement, old age benefit, disability benefit, unemployment, the Netherlands, OECD
Introduction

The labour force participation rate of men aged 55 to 64 decreased substantially in many Member countries of the Organisation for Economic Co-operation and Development (OECD) during the 1970s and 1980s. In this, financial incentives — in particular, a high implicit tax when continuing to work — played an important role (Gruber and Wise, 2004). In addition to financial incentives, employees may have had a preference for early retirement because of their personal household situation or health status or as a consequence of social norms. In turn, employers may have had a preference for early retirement for older employees too, perceiving these workers to be less productive (De Hek and van Vuuren, 2011). Finally, governments may have had a preference for promoting early retirement, as they believed that youth unemployment could be lowered through the earlier retirement of the older workforce.1

In this article, we investigate trends in the use of different labour market exit routes in the Netherlands, focusing on early retirement schemes and disability insurance.2 The decline in labour force participation rates for men aged 55 to 64 witnessed in the Netherlands has been similar to that seen in France and Germany, in spite of these countries’ labour market institutions being quite different (Duval, 2010). This observed fact is consistent with the concept of “substitute pathways into retirement”. According to this concept, a preference for early labour market exit can lead to “early retirement” through different exit routes that are close substitutes for one another, including the use of early retirement benefits, disability insurance and unemployment insurance. Push factors generated by workplace organization have been cited as a determining factor in encouraging the rise of such substitute exit routes (Kohli and Rein, 1991; Riphahn, 1997; Larsen and Pedersen, 2008). From the 1990s onwards, the early retirement and social insurance systems of many countries have undergone reform. Regardless, workers and employers may have retained a preference for preserving early retirement routes by shifting costs (Casey, 1987) from the private domain (including private savings and private pension products) to the public domain (including public pensions and social security programmes). Nevertheless, in general, the concept of substitute pathways into retirement has become less relevant in the course of the last decade.

1. The idea that early retirement reduces unemployment rests on the belief that the total number of jobs in a national economy is fixed. It is nowadays widely recognized that this belief is wrong (Barr and Diamond, 2009; Gruber and Wise, 2010).
2. In this article we disregard unemployment insurance. The Dutch unemployment rate for older workers is about the same as for other age groups, and it is very low in an international perspective. Unemployment benefit duration for older workers is, however, quite long in the Netherlands (3 years and 2 months; with possible extensions), and unemployment could thus be regarded as an early exit route as well. Compared to the disability insurance and early retirement exit routes, this however concerns only a small portion of older workers.
In this article we argue that the reforms in the Netherlands, which aimed at increasing the participation rate of older workers, have led to a different functioning of national institutions with regard to how their design impacts early retirement behaviour. Our first hypothesis is that the probability of inflow into early retirement or disability insurance has decreased at the individual level. As a consequence, the probability of older workers remaining employed has increased. Our second and main hypothesis is that the reforms have stopped substitution between different labour market exit routes. In particular, disability insurance is no longer used as a substitute route to early retirement in the Netherlands — as was previously the case. We investigate these two hypotheses by applying multiple-choice models to administrative data for employees covered by the Dutch health care pension fund for the period 1999 to 2006. In this manner, we provide empirical evidence illustrating the evolution in the behaviour of older workers with regard to early retirement.

The remainder of the article is organized as follows. The next section provides an overview of the reforms of the Dutch early retirement schemes and disability insurance. This is followed by a literature review and discussion of previous research findings based on survey data for the 1980s and early 1990s, which showed that the concept of substitute pathways did indeed hold for the Netherlands. We then utilize and discuss the administrative data for employees covered by the Dutch health care pension fund for the period 1999 to 2006 to investigate the impact of the reforms on the probability of labour market exit. A final section offers conclusions.

**Early retirement and disability insurance**

During the period of economic growth that began in the decade after the end of the Second World War, the Netherlands set up an extensive welfare state including a public pension system and a public disability insurance scheme. For most workers, the old-age pension consists of a mandatory public pension, which is financed on a pay-as-you-go (PAYG) basis, and an occupational pension, which is capital funded. For workers reaching the pensionable age whose earnings place them in the average-income bracket, both sources of pension income are more or less equivalent; low-income workers receive a larger share of their pension income through the public pension, and occupational pensions are the dominant source of income for higher-income workers. In addition to the old-age pension, trade unions and employer organizations set up early retirement schemes (VUT — Vervroegde uittredingsfondsen) following the economic crises of the 1970s and early 1980s. By the late 1980s, however, questions came to be raised about the long-run sustainability of the pension and welfare system (see, for example, Bolhuis, Ottens and Steenbeek-Vervoort, 1987), and a series of reforms followed. The remainder of this section discusses the most important reforms of the early retirement schemes, old-age pensions and disability insurance (Table 1).
Table 1. Main reforms of early retirement schemes, old-age pensions and disability insurance

<table>
<thead>
<tr>
<th>Year</th>
<th>Pensions and early retirement</th>
<th>Disability insurance</th>
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<tbody>
<tr>
<td>1957</td>
<td>Introduction of state pension</td>
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<tr>
<td>1967</td>
<td>Introduction of disability insurance scheme</td>
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<tr>
<td>1976</td>
<td>Introduction of first PAYG early retirement system</td>
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<tr>
<td>1987</td>
<td>Reduction of replacement rate from 80 to 70 per cent Admittance independent of labour market situation</td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td>A penalty payment for enterprises with workers entering disability insurance A bonus for enterprises engaging partly-disabled workers</td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td>Lower replacement rate for long-term disabled</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>Employers pay first year of sickness benefits Abolition of the 1992 (penalty and bonus) measure</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>Start of transition towards capital funded schemes</td>
<td></td>
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<tr>
<td>1998</td>
<td>Introduction of experience rating</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>Gatekeeper Improvement Act</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>Employers pay first two years of sickness benefits</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>Direct transition to actuarial fairness, and integration of early retirement into old-age pension schemes</td>
<td>Introduction of two different schemes: one for fully and permanently disabled, and one for temporarily or partly disabled</td>
</tr>
</tbody>
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Old-age pensions and early retirement

The Dutch public pension benefit guarantees an income of 70 per cent of the minimum wage for a single person; 50 per cent of the minimum wage for each member of a couple. The pension is financed on a PAYG basis, and benefits are not related to work history. Unchanged since its introduction in 1957, the statutory pension age is 65. The full pension is paid to Dutch residents that have lived in the Netherlands from age 15 to 64.3

On top of the public pension, most retired employees receive an occupational pension. Occupational pensions are capital funded, mostly of the defined-benefit type, and participation is mandatory in most sectors of industry. Such provision is negotiated as a collective agreement by trade unions and employer organizations at either the enterprise or sectoral level. The government is involved in two ways. First, pension savings receive special fiscal treatment: contributions to the scheme are tax 3. For each year spent abroad between the ages of 15 and 65 the public pension is lowered by 2 per cent.
exempt, the returns on the assets in the capital funding system are exempt, and the pensions are taxed (i.e. EET). Second, the government facilitates occupational pension schemes by enforcing extension to all workers in the enterprise or sector concerned: the government typically declares agreements between trade unions and employer organizations to be “generally binding”.

Starting from the mid-1970s, many sectors of industry introduced early retirement schemes (VUT) financed on a PAYG basis. After reaching a given age, a worker could retire and receive early retirement benefits equal to about 80 per cent of his or her last gross wage. Owing to the progressive tax system and the continuing accrual of old-age pension rights, the net replacement rate was typically higher than 80 per cent. Working for one more year, and so postponing the early retirement benefit claim, would not lead to an increase in the replacement rate. As a result, the implicit tax rate on continuing to work for another year was close to 100 per cent for many workers, implying that work would not generate any additional income. Not too surprisingly, empirical studies show that the negative impact on the labour force participation of older workers aged 55 to 64 was strong (Kapteyn and de Vos, 1999; Gruber and Wise, 2004; Euwals, van Vuuren and Wolthoff, 2010).

During the 1990s, the trade unions and employer organizations agreed upon transforming the VUT early retirement schemes into less generous but actuarially fair schemes. One goal was to remove the implicit tax on continuing to work. Another goal was to limit costs. In most sectors of industry, it was decided to implement transitional arrangements that would take more than ten years to roll out. The first transition started on 1 April 1997 for civil servants, with the transition starting later for some industrial sectors. The transition was scheduled for completion in 2022. The introduction of a new law on 1 January 2006 considerably accelerated the transition, however.

Since 1 January 2006, early retirement schemes are now integrated into the capital-funded occupational pension system. Before this date both systems were, in principle, independent of one another. Under the rules of the new system, early retirement before age 65 is still possible, but only on the basis of actuarially fair conditions and with a higher “standard retirement age”. Some of the large Dutch pension funds allow for early retirement at age 63, with benefits equal to about 70 per cent of the individual’s average earned wage.

Disability insurance

The public disability insurance (DI) system (WAO — Wet op de Arbeidsongeschiktheidsverzekering) was implemented in 1967 (Table 1). All employees in the Netherlands are covered by this insurance, regardless of their work history. In contrast to DI schemes in many other Western countries, all workers are fully
insured from the first working day. The DI scheme covers workers who are assessed as not having recovered from a certified sickness within two years. All forms of disability are insured, whether stemming from a non-work or work-related risk. Workers may receive full disability benefits if they are assessed as having lost more than 80 per cent of their earnings capacity; otherwise, partial benefits are payable. A significant number of those assessed as partially disabled are engaged in gainful employment. Disability benefit replacement rates vary according to enterprise or sector (Van Vuren and van Vuuren, 2007).

The number of DI recipients rose strongly during the first decades of its operation. Benefits were equal to about 80 per cent of final pay, entry conditions were not strict and enforcement by the public body was lax. It became clear that the DI system would not be sustainable in the long run and that reforms were necessary to slow down the inflow of new beneficiaries and to decrease the total number of recipients.

The first wave of reforms at the end of 1980s aimed at decreasing the beneficiary inflow to DI by making the benefits less attractive for workers. The replacement rate was reduced from 80 to 70 per cent (Table 1). Moreover, access to DI was made independent of labour market considerations and based on a medical assessment only. Before 1987 there was no strict separation between the fact of being assessed as disabled and the risk of being unemployed, so that DI de facto also covered unemployment. The reductions made to the volume of disability claims and disability benefit costs were not substantial after these first reforms, however. An important reason was that the reduction in the replacement rate was offset by collective labour agreements. So the costs were simply shifted from the public disability insurance to the private and occupational domain.

A second wave of reforms during the first half of the 1990s introduced more financial incentives to raise awareness among employees and employers about the financial consequences of the use of sickness and disability benefits. In 1992, a premium differentiation system for sickness benefits and a (short-lived) no-claim bonus system were introduced. The system meant that employers had to pay a higher premium in the event that their employees entered DI. An enterprise employing a partially-disabled DI beneficiary for at least one year would receive a bonus in the form of payment subsidies or exemptions. In 1993, the duration and the level of the DI benefit became dependent on the beneficiary’s employment history. The loss in benefits rights was offset for about 80 per cent of employees through collective labour agreements (Social and Economic Council, 2002). In 1994, the 1992 reform was revisited and a limited “own-risk system” for employers as regards sickness benefit payments was introduced to reduce absences as a

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4. Workers initially receive sickness insurance benefits and may only apply for disability insurance benefits after two years. Sickness insurance in the Netherlands is fully privatized.
consequence of short-term illness: large enterprises became responsible for the continued payment of wages for employees during the first six weeks of sickness, and small enterprises for the first two weeks.

A third wave of reforms during the second half of the 1990s reinforced the financial impacts for employers resulting from the use of sickness and disability benefits by their employees. Starting from 1996, employers had to pay sickness benefits for their employees for the entire first year. And in 1998 the no-claim bonus system was replaced by a system of experience rating. This meant that the DI premium rate to be paid by the enterprise would be calculated henceforth according to the enterprise’s assessed disability risk. Under this reform, enterprises could opt out of the public system to bear the risk themselves or to reinsure the risk with a private insurer.

A fourth wave of reforms during the early 2000s increased the responsibilities of employers further. The Gatekeeper Improvement Act of 2002 introduced more stringent reintegration obligations to be met by employers and their employees. In order to be eligible for DI, the public administrative office (UWV — Uitvoeringsinstituut Werknemersverzekeringen) was given the responsibility for assessing whether the employer and the employee had met these obligations. In 2004, the duration of the sickness benefit period to be paid by the employer was extended from one to two years, thus increasing the financial incentive for employers to help prevent disability among the workforce.

In 2006, the DI scheme was replaced by two new schemes under the umbrella “Income According to Capacity for Work Act” (WIA — Wet Werk en Inkomen naar Arbeidsvermogen). The WIA distinguishes between individuals that are assessed as: i) fully and permanently disabled; and ii) temporarily and/or partially disabled. The first group covers former employees only, for whom recovery is ruled out or cannot be expected within five years. These individuals qualify for earnings-related benefits with a replacement rate of 75 per cent. The second group covers individuals who are partially disabled or temporarily fully disabled. They may qualify for earnings-related benefits or benefits which are based on the minimum-wage level, depending on the individual’s assessed remaining work capacity and employment history. The benefit system includes a financial incentive for the DI recipient to make as full as possible use of his or her remaining work capacity. No benefits are payable to individuals with an assessed loss of earning capacity of less than 35 per cent.

Following the introduction of DI in 1967, the share of DI recipients as a percentage of the population aged 20 to 64 increased from 3.5 per cent in 1967 to 9.7 per cent in 1990 (Figure 1). The aggregate data suggest that the reforms in 1987 did not have an effect on the use of DI. The first drop in the beneficiary rate occurs between 1993 and 1996, when a level of 8.9 per cent is reached. However, the DI beneficiary rate returns to its previous high level in 2001 and 2002. From then onwards there is a downward trend until a share of 8.3 per cent is reached in 2008, which is the lowest share since
1982. The last three policy measures (see Table 1) are held largely responsible for this trend in decreasing use, in particular the Gatekeeper Improvement Act and the increased financial responsibility of employers through the payment of sickness benefits for the first two years (Berendsen, Mulders and van Loo, 2007; De Jong, Lindeboom and van der Klaauw, 2011; Van Sonsbeek and Alblas, 2011).

The number of disability recipients increased over time until the beginning of the 1990s (Figure 1). From the end of the 1990s onwards, the main development observed for men aged 55 to 59 is a decrease in the share of DI recipients from 21 to 13 per cent (Figure 2, Panel 1). We focus on men as the number of female recipients is heavily impacted by a secular increase in female participation (Euwals, Knoef and van Vuuren, 2011). The share of men receiving unemployment insurance or early retirement income decreased slowly as well, and male employment increased over the period. The share of DI recipients among men aged 60 to 64 decreased also, from 27 to 18 per cent (Figure 2, Panel 2). Across the period, the share of men aged 60 to 64 receiving early retirement income increased by 5 percentage points. Overall, the employment rate of the oldest age category increased.

**Figure 1. Disability insurance recipients (percentage of population age 20-64)**

![Graph showing disability insurance recipients percentage from 1967 to 2007](image)

Source: Statistics Netherlands (CBS).

At the beginning of the 1990s Kohli and Rein (1991) argued that the increase in early labour market exit during the 1970s and 1980s was driven by a common...
trend: the slowdown in economic growth and the substantial increase in unemployment. According to their concept, which we refer to as “pathways for labour market exit” or “pathways into early retirement”, push factors generated by the organization of work were decisive in the rise of generous exit.
arrangements. A pathway can be defined as a combination of institutional arrangements to manage the transition process between exit from work and entry into the pension system. Many countries developed one or more pathways into early retirement.

Institutional arrangements creating *de facto* pathways for early retirement were constructed for purposes other than early labour market exit. In France, unemployment insurance was a typical substitute pathway; in Germany both unemployment and disability insurance played a role; and in the Netherlands it was disability insurance (Kohli and Rein, 1991). During the 1970s and 1980s, unemployment and disability insurance were made more easily accessible for older workers in many countries. In Sweden, unemployed persons older than age 63 would receive a disability pension without medical justification. Some countries facilitated early labour market exit through the old-age pension scheme. In Germany, a work-history condition allowed workers to retire at age 63.

The empirical literature shows that the concept of “substitute pathways” applied to the Dutch labour market situation in the 1980s and early 1990s. Kerkhofs, Lindeboom and Theeuwes (1999) estimated a competing risk model for the transition from work to early retirement, disability or unemployment for the years 1993 to 1995. The attractiveness of the different schemes was characterized by: i) the replacement rate, ii) an eligibility indicator for the early retirement scheme, and iii) a “waiting time indicator” for the scheme. The schemes considered in their study were not actuarially adjusted over different retirement ages, implying that the estimated coefficients on the replacement rate represented an effect of the implicit tax rate on the labour market participation decision. The second and third indicators were likewise related to the lack of actuarial adjustment. Retirement before the early retirement eligibility age meant a complete loss of entitlements. The authors found that high replacement rates in the disability and unemployment insurance schemes reduced individuals’ propensity to make use of the early retirement scheme. Second, they found that the early retirement scheme seemed to be preferred over the two other schemes (after controlling for replacement rates). Yet, health is the most important determinant of transitions into disability, whereas financial incentives are the most important determinant of transitions into the official early retirement scheme. Using the same data set to estimate a structural dynamic model of retirement behaviour, Heyma (2004) found that reforms in the early retirement scheme increased pressure on both disability and unemployment. The author concluded that policies aimed at changing attitudes towards retirement appeared necessary to increase the labour market participation rate of older workers.

An earlier study, by Woittiez, Lindeboom and Theeuwes (1994), showed that early retirement and disability are preferred exit routes from the labour market.

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5. A similar result for the United States was found by Bound et al. (1991).
whereas unemployment insurance is subject to a “stigma effect”. Using data for the
period 1986 to 1992, the authors found a clear but small substitution effect between
the different exit routes. Simulations indicated that a reduction in the financial
attractiveness of a scheme led to a higher labour market participation rate, and that
spill-over effects to other schemes were present but limited in size. Using survey data
for the 1990s and earlier decades, Schils (2008) compared labour force exit rates for
workers aged 50 to 65 in Germany, the United Kingdom and the Netherlands. The
author distinguished between three pathways: early retirement, social insurance —
including both disability and unemployment — and “inactivity” — i.e. not
receiving any of these benefits. She concluded that early retirement and social
insurance act as communicating vessels in Germany and in the Netherlands, but less
so in the United Kingdom.

The current study does not investigate unemployment as a substitute pathway,
although there is ample evidence from several countries for substitution between
unemployment and disability insurance (Benitez-Silva, Disney and Jimenez-
Martin, 2010). A substantial empirical literature has focussed on the degree of
“hidden unemployment” in the Netherlands’ disability scheme. Explicit estimates
— ranging from 10 to 50 per cent — were provided by Aarts and de Jong (1992),
Westerhout (1996), and Hassink, van Ours and Ridder (1997). However, according
to recent estimates, the many reforms during the 1990s and early 2000s have led to
a substantial decline in the degree of hidden unemployment in disability enrolment,
to a point where there is almost no substitution left (Koning and van Vuuren,
2007; 2010). It may take several decades, however, until the disability insurance
programme is completely devoid of hidden unemployment.

The concept of substitute pathways seems to apply to many countries, including
the United States. In the United States, the DI enrolment rate for individuals aged 45
to 64 increased from 4.5 per cent in 1983 to 6.7 per cent in 2005. In 2005, 12 per cent
of the United States’ population aged 64 received DI benefits. A part of this increase
is thought to have been a direct consequence of the “pathways” concept.6 The 1983
Social Security reform reduced the generosity of public old-age pensions in the
United States by increasing the full retirement age and increasing the actuarial
reduction for claiming benefits at the early retirement age of 62. This made the
disability pathway to retirement relatively more attractive. Duggan, Singleton and
Song (2007) find that disability enrolment increased significantly as a consequence
of the reform. Their estimates indicate that for each USD 5,000 decline in the
present value of old-age pension benefits, enrolment increased by 0.4 percentage
points for men and 0.8 percentage points for women. According to the authors, the

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6. The official name of the American DI scheme is Social Security Disability Insurance (SSDI). Autor
and Duggan (2003) link the increased use of DI to rising replacement rates for low-skilled workers, and
Black, Daniel and Sanders (2002) demonstrate that the recessions in 1991 and 2001 increased pressure on
DI.
long-run aggregate disability enrolment figure of those aged 45 to 65 is more than a percentage point higher because of the reform. A similar effect was found in France, where pension reform has pushed up the use of disability insurance (Behaghel et al., 2011).

**Empirical evidence from the Dutch health care sector**

The empirical evidence in this study is based on administrative data from the health care sector. The section first discusses the early retirement schemes in the sector. Second, the section provides some descriptive analysis. Last, the section discusses the empirical strategy and presents empirical results.

**Early retirement schemes in the health care sector**

The Dutch health care sector underwent the national reforms described earlier in this article. The transition to an actuarially fair scheme started on 1 January 1999. The actuarial “unfair” scheme was gradually abolished and replaced by the actuarially fair scheme, known as “FLEX”. The benefit level in the new scheme is based on work history and, for almost all workers, the benefit level is substantially lower than that of the old scheme. Furthermore, early retirees no longer accrue old-age pension rights under the new scheme.

The health sector introduced a transitional early retirement scheme to compensate workers who were close to eligibility for the previous early retirement scheme. This transitional early retirement scheme, the “OBU”, was implemented for workers who were born before 1949 and who would have qualified for the previous early retirement scheme. The transitional OBU scheme was financially more attractive than the new FLEX scheme for most workers. First, the replacement rate was higher. Second, during the period of early retirement in the transitional OBU scheme members continued to build up old-age-pension-rights.

The transitional OBU was abolished from 1 January 2006, since when the measures for early retirement have been integrated into the old-age pension scheme.

**Descriptive analysis**

The empirical results in this study are based on administrative data from the pension fund of the health care sector (Pensioenfunds Zorg & Welzijn — PFZW [formerly

7. An earlier study by Mitchell and Phillips (2000) concluded smaller spill-over effects. This study, however, did not exploit the actual changes in Social Security rights over different birth cohorts, and was not able to observe DI enrolment rates beyond the age of 60 for individuals affected by the reform.

8. The Dutch acronym OBU stands for Overbrugginpensioen (Bridge pension).
Figure 3. Hazard rate into the OBU by age for those eligible (percentage)

Note: The hazard rate is defined as the probability that a worker will receive a transitional early retirement benefit (OBU) at age a conditional on being active at age a-1. The figure presents the so-called Kaplan-Meier estimator of the hazard rate. For instance, the hazard rate at age 60 is the probability that an individual exits the labour market through the transitional early retirement scheme given that he/she was active at age 59.

Source: Authors’ calculation, based on CBS data.

PGGM). It is the second largest pension fund in the Netherlands, providing pension arrangements to more than 2 million (former) employees in the health care and social work sector. The data cover 1999 to 2006 and contain information on gender, date of birth, working hours, wages, and pension and early retirement entitlements. The dataset includes all individuals who contribute or have contributed to the system. The dataset is merged to the municipal population register (the Gemeentelijke BasisAdministratie voor persoonsgegevens — GBA) and the job register (the Sociaal Statistisch Bestand voor Banen). The data was transformed into event-history data in order to facilitate the longitudinal analysis.

Retirement at age 60 seems to have been attractive for many workers (Figure 3). Almost 70 per cent of employees eligible for the financially-attractive transitional OBU scheme at a given age retired at age 60. This probability hardly changes for the years studied. Postponing retirement beyond age 60 was not attractive financially, owing to the high implicit tax on continuing to work. The old-age pension benefit level increased due to the continuing building up of old-age pension rights, but the early retirement benefit level itself did not increase if early retirement was postponed.

9. The dataset is administrated by Statistics Netherlands (CBS) and is available by “remote access” facilities offered by Statistics Netherlands.

10. The event-history data is explained in Euwals, Trevisan and van Vuren (2010).
Part-time early retirement was not attractive. From 2001, it had been possible to receive the transitional OBU benefit while continuing to work. But to receive the favourable fiscal treatment associated with early retirement, total income must have been less than 100 per cent of the previous final earned income. Workers who had access to the transitional OBU scheme at age 60 were allowed to retire part-time at age 58 with a benefit equal to half the full benefit level. These workers received the partial benefit from age 58 to 61, and from age 62 they received the full benefit. This part-time option was flexible and attractive. Yet, the conditional probability of workers choosing to retire at age 58 was small. This seems to be at odds with Kantarci and van Soest (2008), who showed that many older Dutch workers have a stated preference for part-time retirement. A tentative explanation may be that about 60 per cent of employees in the sector work part-time.

The conditional probabilities of entering DI suggest substitution between exit routes for certain years (Figure 4). The transitional OBU scheme was financially attractive compared to disability insurance. So individuals who were eligible for the transitional OBU scheme may have had a low probability of entering DI. This is the “substitute pathways” hypothesis: a preference for labour market exit leads to inflow into a benefit scheme, but blocked access to one particular exit route will increase the probability of inflow into alternative exit routes. For the years 1999 and 2001, the probability of entering DI decreased at age 60 for individuals with access to the transitional OBU benefit (Figure 4, Panel 1). This is exactly the age at which inflow into the transitional OBU scheme reaches a maximum, as shown in Figure 3. For the years 2002 and 2005, this drop in inflow into DI does not occur however. Furthermore, according to the hypotheses, the inflow into DI should differ in level and by age between those with or without access to the transitional OBU scheme. In particular, the inflow into DI should be higher for those who are not eligible for the transitional OBU benefit. The level of inflow hardly differs however between years, and a systematic difference is hard to recognize (see Panels 1 and 2 of Figure 4). To deal with the variation between the years, the next section uses statistical methods to test the hypotheses.

**Empirical strategy**

We model the transition in labour market status of active employees as a discrete variable with four possible outcomes: i) continue working, ii) inflow into disability insurance, iii) early retirement with the transitional early retirement scheme (OBU), or iv) “other exit routes”. The first category includes those who continue working without claiming DI or early retirement benefits. The second category covers those claiming disability insurance, including those who are partly disabled and receiving additional income from employment or early retirement. Investigating the behaviour of the partly disabled is interesting, but beyond the scope of this study.
The financial incentives to continue working are complicated to model. The third category includes those receiving an early retirement benefit, but not receiving a disability benefit. The fourth category includes transitions to (unpaid) non-participation, unemployment, and work in another enterprise or sector. We
disregard inflow into the new flexible early retirement scheme (FLEX), as inflow is low. We use a Multinomial Logit Model to investigate the labour market transitions of active individuals for ages 58, 59, 60 and 61:

$$P(y_{i,t+1} = j | y_{i,t} = \text{working}) = \frac{\exp(X_i \beta_i + \gamma_i d_i)}{1 + \sum_{j=1}^{4} \exp(X_i \beta_i + \gamma_i d_i)}$$

where $y_{i,t+1}$ is the observed outcome for individual $i$ at time $t + 1$, the vector $X_i$ contains explanatory individual variables at time $t$, including time dummies, and the dummy variable $d_i$ indicates whether the individual is eligible for the transitional early retirement scheme (OBU) at time $t$. The possible statuses at time $t + 1$ are 1) “working”; 2) “disability insurance”; and 3) “transitional early retirement benefit”; the reference category is 4) “other exit routes”. The vector of coefficients $\beta_i$ and the coefficient $\gamma_i$ represent the impact of a change in explanatory variables $X_i$ and $d_i$ on the probability of alternative $j$. While changes in the probabilities of the first three alternatives determine the change in the probability of the last alternative, as the probabilities of the four alternatives always need to add up to one, the vector of coefficients $\beta_i$ and the coefficient $\gamma_i$ need to be normalized. We normalize these coefficient to zero as is typically done in the empirical literature. The unknown parameters are estimated by maximum likelihood. Results are presented in terms of marginal effects on all categories; that is, the change in the probability of being in category $j$ as a result of a change in the explanatory variables.

The assertion in this study is that the reforms in DI and early retirement schemes, discussed above, have led to a different functioning of the labour market. We expect to find evidence that the policy reforms have influenced labour force participation and labour market exit rates in the health care sector. Our first hypothesis is that the inflow into early retirement and DI has decreased at the individual level, and so the probability to remain employed has increased. According to this hypothesis, the parameter estimates for the time effects should show a significant decrease over the years for early retirement and DI, and a significant increase for continuing to work.

Our second hypothesis is that the reforms have lowered substitution between exit routes and, in particular, DI is no longer used as a route for early retirement. According to this hypothesis, the parameter estimate for $\gamma_i$, representing eligibility to the transitional early retirement scheme (OBU), should be insignificant for DI. Not being eligible should not affect the probability to enter DI, but instead it should increase the probability to remain working. Note we assume that eligible and non-eligible workers exhibit comparable labour market exit behaviour conditional on (a linear combination of) the exogenous individual variables contained in the vector $X_i$. So a difference in exit behaviour, measured through the parameter $\gamma_i$, should be the result of the incentives of the early
retirement scheme. Note also that the financial incentives for later retirement were substantial; see Euwals, van Vuuren and Wolthoff (2010) and Euwals, Trevisan and van Vuren (2010).

We test the hypotheses for the full sample of workers, including a large fraction of part-time working women. The hypotheses on the functioning of the labour market hold for men and women. Women constitute a substantial part of the inflow into DI, and the reforms also affected their inflow. Furthermore, note that in the Netherlands part-time employment is an integral and substantial part of the labour market and it does not necessarily imply secondary jobs. Part-time workers have equal rights with full-time workers by law, and substantial numbers of men as well as the highly-educated work part-time (Euwals and Hogerbrugge, 2006).

### Empirical results

The estimation results confirm both hypotheses on substitute pathways. First, the probability of labour market exit has decreased and the probability to remain employed has increased. Second, substitution between exit routes has stopped, as eligibility for the transitional early retirement scheme (OBU) does not affect the probability to enter DI.

The estimation results confirm the first hypothesis, as labour force participation has increased over time. Table 2 summarizes the regression results for labour market transitions at age 60, given that workers were active in the previous period. The

#### Table 2. Marginal effects for employees age 60, 1999–2002, 2005

<table>
<thead>
<tr>
<th>Outcome variable</th>
<th>Continue working</th>
<th>Inflow — DI</th>
<th>Inflow — OBU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible at age 60</td>
<td>−0.618* (0.006)</td>
<td>0.001 (0.001)</td>
<td>0.636* (0.005)</td>
</tr>
<tr>
<td>2000</td>
<td>−0.093* (0.011)</td>
<td>0.012* (0.004)</td>
<td>0.094* (0.011)</td>
</tr>
<tr>
<td>2001</td>
<td>0.021 (0.011)</td>
<td>0.008* (0.003)</td>
<td>0.002 (0.011)</td>
</tr>
<tr>
<td>2002</td>
<td>0.039* (0.011)</td>
<td>0.009* (0.003)</td>
<td>−0.027* (0.009)</td>
</tr>
<tr>
<td>2005</td>
<td>0.081* (0.010)</td>
<td>−0.002 (0.002)</td>
<td>−0.030* (0.010)</td>
</tr>
<tr>
<td>Woman</td>
<td>−0.087* (0.008)</td>
<td>0.002* (0.001)</td>
<td>0.088* (0.009)</td>
</tr>
<tr>
<td>Partner</td>
<td>−0.122* (0.007)</td>
<td>−0.001 (0.001)</td>
<td>0.113* (0.007)</td>
</tr>
<tr>
<td>Children</td>
<td>0.078* (0.008)</td>
<td>0.001 (0.001)</td>
<td>−0.074* (0.008)</td>
</tr>
</tbody>
</table>

*Note: Standard errors between parentheses, marginal effects for binary variables are defined as the difference in the probability setting the binary variable at one and at zero and while setting all other explanatory variables at the sample mean. Parameters marked with * are significant at a 5 per cent significance level. The variable "Eligible at age 60" represents a binary variable for being eligible for the transitional early retirement scheme (OBU). The hypothesis of a decreasing substitution between exit routes may be tested by interactions between eligibility and time, but the number of observations is too small to get significant results. Source: Authors’ calculation, based on CBS data.*
pattern of the year dummies shows that the probability of entering the transitional early retirement scheme (OBU) decreased over time whereas labour market participation has increased. The probability to continue working in the same job has increased by 8 percentage points between 1999 (the reference year) and 2005. Similar results are found for other ages, the probability to continue working also increased for ages 58 and 59. The probability of inflow into DI has not decreased significantly over time for those aged 60. But for other ages (ages 58, 59 and 61), the probability was significantly lower for 2005.

The estimation results also appear to confirm the second hypothesis. Eligibility for the transitional early retirement scheme (OBU) does not affect the probability to enter DI. Table 2 shows this for individuals aged 60 with or without eligibility at age 60. In the case of substitute pathways, a non-eligible individual could opt for DI. Individuals who are not eligible have a large probability to continue working at age 60 (see Table 2), while the same holds at age 61 too. Previous studies for the Netherlands have found evidence in support of a substitution effect. Our results therefore support the hypothesis that the reforms have stopped such substitution and DI is no longer used for early retirement.

Besides the hypotheses we have tested here, the results show some additional insights. First, eligibility for the transitional early retirement benefit (OBU) has a significant effect on continuing to work at several ages. Eligibility has a significant but small effect on the probability to retire at age 58. So, part-time early retirement with the transitional OBU does not seem to be that attractive for workers in the sector. At age 59, the dummies for eligibility are statistically significant for those who continue working, but again the size of the effect is small. At ages 60 and 61 the marginal effect of eligibility is large. Being eligible increases the probability to claim the benefit by more than 60 percentage points. This is likely to be related to the influence of the implicit taxes on continuing to work. Second, individual characteristics matter for exit behaviour. Women are less likely to continue working at ages 60 or 61, and are more likely to retire at these ages. Women are also more statistically likely to claim a disability benefit, whereby in economic terms the size of the impact of gender is small. Individuals with a partner are less likely to continue working, while individuals with children are more likely to continue working.

**Conclusion**

The institutions facilitating early retirement in the Netherlands have been reshaped during the past two decades. Mandatory occupational early retirement schemes were abandoned and partially integrated into the old-age pension system. Early retirement benefits through the pension system are actuarially fair and the replacement rate has been lowered. The DI scheme was reformed almost simultaneously with the early retirement schemes. Several measures were taken
to prevent inflow into DI, including financial incentives for both employers and employees and more stringent reintegration obligations in the case of sickness benefit claims. The objective of this study is to assess whether the policies have been successful in decreasing labour market exit through these two alternative exit routes.

In this study, we find that administrative data in the health care sector are consistent with the hypothesis that the participation rate of older workers has increased and that DI is no longer used as an alternative exit route. This suggests that recent policy reforms in the Netherlands have been effective. This finding contrasts with the empirical literature, which shows ample previous evidence for substitute pathways into early retirement in the Netherlands, as well as in several other countries. In other words, a general preference for early retirement existed and individual workers had a “choice” between several exit routes, including “official” early retirement, disability insurance and unemployment benefits. Our empirical analysis for the health care sector provides support for the hypothesis that employment rates of older workers have increased. Moreover, the results are consistent with the hypothesis that DI is no longer used as an alternative early exit route. The reforms seem to have prevented “substitution” from early retirement schemes towards DI.

Can our results be generalized to other sectors of industry and to other countries? Indeed, it seems likely that our results can be extended to other sectors, as lower inflow into DI and lower early retirement rates were witnessed over practically all sectors in the Netherlands. But generalization to other countries seems more questionable, as results may depend on the national institutional setting. Employment rates for older workers are increasing in other countries as well, but empirical evidence for these countries is still necessary to make a general claim on the decline of substitute pathways.

Policies established in the Netherlands to prevent early labour market exit have been successful. Participation incentives have improved and the total amount of benefit payments for early exit routes has been reduced. This does not necessarily prove that the Dutch policies are optimal in the sense that the well-being of workers has increased, however. Workers are likely to be risk-averse and they have a preference for reasonable labour market exit options in case of a substantial loss in skills; for example, because of health shocks or technological change. The development of tools for welfare analysis, see Cremer, Lozachmeur and Pestieau (2004, 2008) and Zaidi and Whitehouse (2009), is therefore necessary to assess the effectiveness of policy.

**Bibliography**

Substitute pathways into retirement in the Netherlands


BOOK REVIEW


In common with a large number of publications produced over the past decade or so, this edited volume asks whether any trends towards “convergence” can be detected in the social policies of economically-developed welfare systems — in this case Germany and the United Kingdom. To this end the various contributors to the fourteen chapters present a wealth of detailed empirical research, their analyses focusing on “welfare values” and three substantive areas of welfare (family policy, old-age pensions and employment policy). Unsurprisingly, the overall verdict is mixed: there is evidence of increasing similarities in policy content and outcomes in certain cases, but no obvious signs of convergence in others.

The first section of the book is devoted to the analysis of welfare values in the two countries, the three chapters examining understanding of, and attitudes to, welfare (Burkhardt, Martin, Mau and Taylor-Gooby), attitudes to fairness and equality (Taylor-Gooby and Martin), and attitudes to migration and ethnic diversity (Burkhardt and Mau). Turning first to perceptions of welfare, Burkhardt et al., using data from the 2006 British Social Attitudes Survey and 2007 German Justice in the Welfare State Survey, conclude that “by and large, the welfare attitudes seem to be more or less in line with the welfare state arrangement of both countries” (p. 31). In other words, following the Bismarckian tradition, Germans tend to be more “solidaristic”, while Britons “rely more on the individual and the power of the market”, with the welfare state understood “more narrowly as something that fits round the edge of the market system” (p. 29).

Although these expected differences are offset by certain similarities of attitude, the overall verdict from this quantitative study remains one of “difference”. This picture is broadly confirmed by the qualitative study on attitudes to fairness and equality reported in Chapter 3. Again, German respondents appear to be more solidaristic than their British counterparts. British respondents, conversely, were more comfortable with the legitimacy of buying services, particularly in education and health care. Arguably, a greater degree of convergence is detectable in the report of a qualitative study designed to elicit attitudes to immigration (Chapter 4). In both countries, “people were positive about migration when it came to possible productive contributions to society but also concerned with regard to problems of welfare dependency and segregation” (p. 70). Scepticism about migration levels was expressed in both countries, though arguably more bluntly in the United Kingdom.

Family policy is the focus of the volume’s second section. Two of these contributions, by Warth and Fleckenstein and Seeleib-Kaiser, respectively, present analyses of highly specific areas — family-friendly working time and firm-level family policies. The latter reports on
results from a study of companies in the United Kingdom, Germany and the United States. Overall the results suggest that companies in the liberal nations have rather less family-friendly policies than is the case with German businesses, where relations between management and organized labour are less conflictual and more codified. For Warth, the key similarity between the United Kingdom and Germany is that both countries are making a "parallel shift" towards reconciling paid work and family life; moreover, both have developed a carrot and stick policy mix.

The section's two other contributions provide clear overviews of the field of family policy. Daly's carefully nuanced analysis of trends in family policy indicates that significant changes have been made, but not to the extent that the philosophy governing the place and role of the family in each country has been fundamentally altered. In Germany, policy has moved towards an employment-reconciliation approach, designed to reconcile work and family life, which sits alongside, rather than replaces, the previous family-centred model. In this sense, the market features larger in the relationship between the family and society than used to be the case — and there are certain similarities with the United Kingdom, as policy in both countries is encouraging the family to be an economically active unit. Daly notes, however, that the United Kingdom has experienced greater changes not only in family policy, but also in attitudes towards the family itself. The family actually became an explicit object of policy for the first time under New Labour. Some of these insights are taken up by Jüttner et al. in their analysis of childcare legislation in Germany and Britain. The focus on childcare in both countries is not in doubt and, indeed, the expansion of childcare is notable in both cases. However, Jüttner et al. argue that the reasons for the expansion differ: liberal Britain targeted families and children from disadvantaged communities, using the labour market and tax credits as the key means of tackling poverty; Germany expanded childcare to secure higher female employment, higher fertility rates and higher numbers of jobs in child care (p. 107) — this latter strategy incorporating middle class families in ways that typify the "conservative" character of German social policy.

Co-authored contributions by Meyer and Bridgen make up two of the three chapters devoted to old-age pensions, these being followed by Willert's analysis of the impact of personal pensions on the material well-being of older people. Bridgen and Meyer provide an excellent overview of development and change in British and German pensions since 1945 (Chapter 9), before moving on to examine the impact of the significant changes that have affected both systems (Chapter 10). In short, Bridgen and Meyer argue that the United Kingdom, once a hybrid liberal/statist system, has moved in a social democratic direction since 2007, the key feature being the strengthening of the public pension. In Germany, things have moved in the opposite direction following significant changes after 2001 to what is characterized as a typical conservative model. Both countries are dealing with the myriad effects of globalization and population ageing — but in the British case the retrenchment of occupational provision in the 1990s led a reluctant state to introduce "quasi-compulsory occupational contributions in order to address growing poverty risks" (p. 178). Germany, in contrast, reduced compulsory pension contributions under the Schroeder government in an effort to contain payroll taxes in order to stimulate employment and growth. Turning to "convergence", unlike many contributors, Bridgen and Meyer make a laudable attempt to consider what the term may mean in relation to pensions policies. Is it best
to judge the issue according to the institutional architecture of recent pension reforms in the two countries? Or is it better to measure convergence by assessing changes in pension levels in the two systems before and after the new reforms have been introduced? The latter approach is preferred, not least because a core part of the analysis in Chapter 10 uses projected future incomes as a measure of comparison. On this measure, the post-reform British system is more generous than its post-reform German equivalent, which is predicted to “become more similar to the type of less generous Bismarckian system seen in the USA” (p. 207). Willert’s chapter concludes that personal pension schemes largely fail to bridge the savings gap for low-to-middle earners, although average earners, particularly males, do better. If the United Kingdom has rather cheaper personal pension plans and stronger regulation, the range of outcomes is very broad in what has become an uncertain system for those who do not enjoy good occupational pensions. Meanwhile, the state pension continues to play a major role in Germany for those who have paid their contributions. For others with low earnings, the still relatively new Riester plans and other personal pensions are insufficient to make up the gap between the low benefits paid by the state pension and the social inclusion threshold.

The final section of the book examines employment and unemployment, the chapter by Leuze looking at higher education and graduate employment. Here there appears to be very little convergence between the two countries — German higher education is more occupation-specific. This area of persistent divergence contrasts with the trend in labour market policies. Clasen shows that Germany has adopted elements of activation that resemble the United Kingdom activation-based approach quite closely. Although an earnings related benefit persists for those in the contributory (UBI) scheme, this population has decreased in recent years while a new scheme (UBII) that provides means-tested benefits mainly for the long-term unemployed has grown. However, Clasen is careful to point out that not everything has changed: the insurance principle in Germany may not have waned quite as much as the evidence would suggest.

In sum, this is a very useful and informative book. The key strength is that the chapters are empirically grounded, often presenting evidence based on the contributors’ primary research. That said three weaknesses deserve mention. First, the absence of an examination of the British and German health systems is disappointing. Second, the concept of “convergence” itself is largely undefined. To be sure, intended meanings can be drawn out by a careful reading of the contributions, but the book would have benefited from more sustained attention to this issue. Finally, there is no considered examination of the impact of the “crisis” on the British and German welfare systems. These criticisms do not undermine the strengths of the book, however. Those interested in European social policy and comparative social policy generally will certainly benefit from reading it.

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