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Has Public Insurance Gone Too Far?

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Abstract

This study argues that insurance is a much more pervasive motive of government activity than is commonly thought; one associated with great benefits but also great risks. From the start of public social insurance in the late 19th century, social insurance has come a long way to “all-inclusive” modern welfare states that absorb, on average, 25% of GDP in industrialised countries. Moreover, governments today are expected to “insure” aggregate demand via public spending and jobs, and economic sectors – most notably the financial industry – via subsidies and bailouts. Public insurance has also spread across borders via international support programmes. All this has not only boosted government debt to historic peace-time highs, but also led to significant potential future government liabilities via social security systems and possible further national and international financial support programmes. While the distributional implications are ambivalent, the compound effects have put the sustainability of public finances and macroeconomic stability at risk in many countries. Correcting over-commitments requires ambitious and timely policy action.

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“The road to hell is paved with good intentions”

1. Introduction

History is full of episodes where “tragedies of the commons” or “common pool problems” have led to economic inefficiencies, misery and, in some cases, disaster. Many of these episodes have been related to natural resources and their overuse. The failure of the first Viking settlement of Greenland in the middle ages or the decline of the Easter Island culture are stark examples brilliantly described by the paleo-anthropologist Jared Diamond (2005/2011). The relevance of this issue to public finances is also well known: deficit biases in an imperfect, special-interest dominated political process lead to excessive public debt build-up and debt crises (Mueller, 2003).

The role of public insurance is key in this regard. The subject has received huge attention in the academic and policy debate. Most of the attention focuses on the “classic” field of social insurance, i.e. health, pensions, unemployment, etc. In recent decades, the role of “public insurance” of aggregate demand (or macroeconomic stabilisation) has also become the focus of the economic and policy discussion. A debate on the sustainability of public insurance commitments related to “visible” public debt plus the costs of population aging has emerged. Moreover, “new” types of public insurance – support for the financial sector and financial assistance across borders – have gained prominence though rarely under the “public insurance” label (Schuknecht, 2012).

As the boundaries of public insurance have expanded substantially within and across countries, they have created a growing “common pool” problem. Few observers have recognised that total commitments for social security, demand stabilisation and the new types of public insurance may well exceed what governments can reasonably bear, thus jeopardising fiscal sustainability and monetary stability at the national and global level (Rother et al., 2010). Few, if any, have picked up on the role of public insurance at the roots of the ongoing financial and sovereign crisis.

This study documents the increasing insurance role of government, its elements and its compound effects as reflected in the size and composition of government spending and contingent or implicit liabilities. Following a brief conceptual section on the types of public insurance and the determinants of their provision, the study documents the rise of public and social insurance spending over the past one and a half centuries (sections 3-5). Section 6

demonstrates the fiscal costs of corporate/sectoral insurance that have gained particular prominence in the ongoing financial crisis. Insurance of aggregate demand (via public employment, automatic stabilisers, fiscal activism), and public insurance/support across regions and across countries has added further to the “safety net” role of governments (Sections 7 and 8). The study discusses the risk that the expanding insurance role of government becomes unsustainable (Section 9) which, in turn, threatens to overburden monetary policies (Section 10). Section 11 provides a brief discussion of the ambivalent distributional implications of public insurance. Section 12 concludes with an appeal to strengthen policies and institutions so as to keep public insurance commitments sustainable.

2. Public insurance: some conceptual issues

In the past, the fiscal role of government was very limited. It mainly consisted of paying for the provision of the rule of law and certain public goods, such as infrastructure, defence and (only very gradually) public education.¹ The provision of public insurance (as furnished by the government rather than by churches or local communities) started rather late and on a very contained scale in the late 19th century. By the Second World War, there was not much more than basic public retirement, health and unemployment insurance. Since then, and with the ascent of Keynesianism, governments have taken on a growing insurance role. Pension, health and unemployment insurance have become universal and much more generous. This and other forms of social assistance (e.g. child, family and disability-related benefits) safeguard much more than minimum living standards. Long-term care insurance is a relatively recent addition that protects against the risk of disability associated with longevity. Today, social insurance accounts for about 60% of fiscal outlays in most advanced economies.

In addition, governments have – at times or in some countries – provided de facto insurance against poverty and unemployment via public sector jobs or public works programmes. Corporations/sectors have been “insured” against unfavourable market developments via temporary or permanent subsidies, tax credits or, more indirectly, support for those on shortened work schedules. More prominently, in recent years, banks have been prevented from failing and their clients have had their fortunes “guaranteed”. This latter type of insurance has grown from rather contained levels to reach fiscal costs of considerable magnitude in advanced economies.

¹ Much of the historical discussion and data is based on Tanzi and Schuknecht (2000). An exception is perhaps the UK, where public social assistance started much earlier (Hank, 2012).

With the assent of Keynesianism, the role of public insurance was extended to “stabilise” aggregate demand. This concept has recently been applied across national boundaries, whereby countries with “demand shortfalls” undertake coordinated, stimulative measures to support demand not only at home but also abroad (IMF, 2012). Such “demand rotation” has given the concept of “economic fine-tuning” a global reach.

On a more limited scale, and with a crisis-oriented focus, the stability of whole countries and their public sectors has been assured (insured) by the International Monetary Fund (IMF) and, more recently, by European support mechanisms. This has given rise to dramatically increasing public obligations, both visible (in the form of expenditure and public debt) and invisible (in terms of implicit and contingent fiscal liabilities). Since 2009, central banks have also assumed a significant “insurance” role for aggregate demand beyond “conventional” interest rate policy via non-standard measures that have included the purchase of government and private assets.

From a conceptual perspective, this has to be seen in the context of insurance being one of the great achievements of market economies. Insurance allows to pool risk, to save and to smoothen consumption over time. This opens up opportunities to increase income, growth and welfare. Re-insurance can further pool risk. The main challenges of effective and efficient insurance are moral hazard and adverse selection. Insurance can breed carelessness and attract bad risks. In the private sector, the risk of insurer bankruptcy and competition amongst insurers encourages the monitoring of behaviour and risks, and appropriate pricing. It is crucial to understand that private insurance only works when: 1) the rule of law secures the implementation and enforcement of underlying contracts; and 2) markets are allowed to function. This is necessary for prices to reflect risk and poor judgement, for monitoring by insurers to result in lower profits and default, and for the risk-mitigating or increasing behaviour of clients to be rewarded or punished.

From this perspective, the role of government in insurance is both essential and problematic. Some social risks are difficult to insure in markets, particularly if certain conditions like affordability or universal coverage are a pre-condition. Others (such as vis-à-vis stabilising aggregate demand or insuring the financial sector in large countries) are difficult to insure privately also because of the sheer size of risks. International asset accumulation can help but has its limits, particularly if the underlying problem/crisis is of a global scale.

On the other hand, the question arises whether a government is likely to provide the right type of insurance in the most efficient and incentive-compatible manner. If governments are seen as omniscient and benevolent unitary actors, the public sector is, by definition, best-placed to deal

with social and economic risks. And it can correct market failure so that such risks can be insured without adverse behavioural incentives. However, the challenges for the functioning of insurance markets apply strongly to governments. Public choice theory has argued for some time that the premise of an omniscient and benevolent public sector is not tenable (Tullock and Buchanan, 1962). The provision of insurance may then rather be the result of political motives, with politicians rewarding groups of voters or special interests. Politicians can provide “favours” by not pricing risks properly and by not monitoring or penalising risk-increasing behaviour on the part of the insured. Majority voting allows for the costs to be shifted from tax-paying minorities to social insurance-receiving majorities. Political transaction costs, political over-representation and log-rolling allow the bundling of special interest support even at the expense of majorities. If financial markets and international political relations allow it, the scope of public insurance can be extended further at the expense of future or foreign insurers.

In the public finance literature, public insurance and the redistributive role of government are closely intertwined. The government provides social benefits or social insurance in order to reduce poverty, longevity or health risks. The incongruence between those who receive and those who pay – mostly via taxes, but also via the redistributive design of social insurance contributions – is deliberate. Income distribution is a distinct objective of government. The goal is to equalise income and benefits in society in favour of the poor, the elderly, children, etc.

A combination of “naive” assumptions about policy behaviour and political economy incentives is likely to result in a classic common pool problem of too much and too inefficient public insurance. Everybody would be better off if public insurance were more contained and effective. But, equally, everybody has an incentive to seek the maximum in benefits. As a result, pension benefits are higher than what the actuarial value of contributions would suggest, with the bill being left for future generations via explicit or implicit public debt. Health insurance benefits are largely granted independently of the life style choice adopted, even though this can make the insurance system more costly. The government employs more people than needed to buy support from powerful public sector lobbies. And it initiates spending programmes in economic downturns even though these are usually late, difficult to reverse and often benefit others than those who are suffering. Farmers and coal mines receive sectoral support. The combined fiscal costs of these “insurance schemes” already bear the risk of unsustainability. Yet, recent experience has shown that banks, and even countries, may need “public insurance” of unprecedented magnitudes and that they have to be saved, as they are too big or too important to fail. Moreover, (although the risks have not yet entered into everybody’s consciousness) banks

and states may also be “too big to save”, either individually or through the compound effect of the various “insurance claims” in a “systemic” event. In that case, claims either have to be reneged on by governments or they have to be monetised. The containment of public insurance may, therefore, be an existential issue for the economic stability and prosperity of advanced economies.

The following table categorises the types of public insurance and the political economy channels by which they can create overuse, if not sustainability risk. Whereas excessive and inefficient social insurance is mainly possible because the costs are largely borne by a minority of tax payers, sectoral insurance mostly benefits vocal special interests. Financial sector insurance supports both the underlying industry and the fortunes that it administers. International insurance and the financial industry have particular influence because of their ability to create negative externalities.

Needless to say, it is not the economic and political role of public insurance per se that is questioned here, and not all public expenditure can be explained by insurance provision (a notable exception being spending on public goods, even though spending on such goods can provide an insurance function via public employment and demand stabilisation). All these types of insurance can confer very important benefits. It is the risk of overuse, inefficiency and possible self-destruction that is problematic.

| | Social insurance | Demand stabilisation | Sectoral insurance | International insurance |
|--|------------------------------|-------------------------------|---|-------------------------|
| Majority exploits minority | Tax financed social security | Tax/debt-financed stimuli | | |
| Vocal special interests | | Unnecessary public employment | Farmers, well-organised producers, financial industry | |
| Negative externalities / political “blackmail” | | | Financial industry, large companies | Countries |

3. Public expenditure from a historical perspective

The growing role of public insurance is closely linked to the enormous growth of government over the past century and a half: public spending has increased at least four-fold to over 40% or even 50% of GDP in most industrialised countries (see Table 1 and also Tanzi and Schuknecht, 2000). In the late 19th century and up to World War I, governments in what are today's industrialised countries absorbed, on average, slightly more than 10% of national resources. The governments of Scandinavian countries, Japan and the United States (US) tended to be small, while those of continental Europe were larger. But "large", at about 15% of GDP, is a very relative term. And these governments were not unproductive: this was the time of great infrastructure development all over today's developed world.

Table 1: Total expenditure by general government

| %GDP | About 1870 | About 1913 | About 1920 | About 1937 | 1960 | 1980 | 1999 | 2007 | 2009 | 2011 | 2013 |
|--|------------|------------|------------|------------|------|------|------|------|------|------|------|
| Euro area | | | | | | | | | | | |
| Austria | 10,5 | 17,0 | 14,7 | 20,6 | 35,7 | 50,0 | 53,4 | 48,6 | 52,6 | 50,5 | 51,3 |
| Belgium | .. | 13,8 | 22,1 | 21,8 | 30,3 | 54,9 | 50,1 | 48,2 | 53,7 | 53,3 | 54,4 |
| Finland | .. | .. | .. | .. | .. | 40,2 | 51,7 | 47,4 | 56,1 | 54,8 | 55,1 |
| France | 12,6 | 17,0 | 27,6 | 29,0 | 34,6 | 46,0 | 52,6 | 52,6 | 56,8 | 56,0 | 56,8 |
| Germany* | 10,0 | 14,8 | 25,0 | 34,1 | 32,4 | 46,9 | 48,2 | 43,5 | 48,2 | 45,3 | 45,5 |
| Greece | .. | .. | .. | .. | .. | .. | 44,9 | 47,5 | 54,0 | 51,8 | 49,6 |
| Ireland | .. | .. | 18,8 | 25,5 | 28,0 | 48,9 | 34,3 | 36,8 | 48,7 | 48,1 | 41,5 |
| Italy | 13,7 | 17,1 | 30,1 | 31,1 | 30,1 | 40,6 | 47,9 | 47,6 | 51,9 | 49,9 | 50,3 |
| Netherlands | 9,1 | 9,0 | 13,5 | 19,0 | 33,7 | 55,2 | 46,0 | 45,3 | 51,4 | 49,8 | 49,8 |
| Portugal | .. | .. | .. | .. | .. | 32,3 | 41,5 | 44,4 | 49,8 | 49,4 | 47,5 |
| Spain | .. | 11,0 | 8,3 | 13,2 | 18,8 | 32,2 | 39,9 | 39,2 | 46,3 | 45,2 | 42,8 |
| Other EU | | | | | | | | | | | |
| Denmark | .. | .. | .. | .. | .. | 52,7 | 55,5 | 50,8 | 58,0 | 58,0 | 57,1 |
| Sweden | 5,7 | 10,4 | 10,9 | 16,5 | 31,0 | 60,1 | 58,1 | 51,0 | 54,9 | 51,1 | 51,6 |
| UK | 9,4 | 12,7 | 26,2 | 30,0 | 32,2 | 47,6 | 38,9 | 43,7 | 51,3 | 48,5 | 47,2 |
| Other advanced economies | | | | | | | | | | | |
| Australia | 18,3 | 16,5 | 19,3 | 14,8 | 21,2 | 34,1 | 35,6 | 34,2 | 37,6 | 36,6 | 34,7 |
| Canada | .. | .. | 16,7 | 25,0 | 28,6 | 41,6 | 42,7 | 39,4 | 44,4 | .. | .. |
| Japan | 8,8 | 8,3 | 14,8 | 25,4 | 17,5 | 32,0 | 38,0 | 35,8 | 41,9 | 41,4 | 43,7 |
| Korea | .. | .. | .. | .. | .. | .. | 18,0 | 21,9 | 23,0 | 21,7 | 21,2 |
| New Zealand | .. | .. | 24,6 | 25,3 | 26,9 | 38,1 | 31,6 | 31,1 | 34,5 | 35,4 | 31,4 |
| Singapore | .. | .. | .. | .. | .. | .. | 10,8 | 12,4 | 18,5 | 17,6 | 17,8 |
| Switzerland | 16,5 | 14,0 | 17,0 | 24,1 | 17,2 | 32,8 | 34,7 | 32,1 | 34,1 | 33,8 | 33,8 |
| US | 7,3 | 7,5 | 12,1 | 19,7 | 27,0 | 34,2 | 34,2 | 36,8 | 42,8 | 41,7 | 39,9 |
| Averages | | | | | | | | | | | |
| Unweighted average (excl. Sgp. + Kor.) | 11,1 | 13,0 | 18,9 | 23,4 | 27,8 | 43,2 | 44,0 | 42,8 | 48,4 | 47,4 | 46,5 |
| Euro area 12 ~ | .. | .. | .. | .. | .. | 44,7 | 48,1 | 46,1 | 51,3 | 49,6 | 49,6 |
| G 7 | .. | .. | .. | .. | .. | 36,1 | 37,8 | 37,4 | 42,2 | 40,4 | 40,5 |

Sources: Ameco, WEO, Tanzi and Schuknecht, 2000.

~ before 1999: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain

*=until 1990 only West Germany

By the Second World War, public expenditure in today's advanced economies had doubled for the first time. The first phase of this was during World War I (WWI). Subsequently, the war-related rise in the public revenue ratio was not reversed but the military savings were still spent (Peacock, A. and Wiseman, J., 1961). Public spending averaged nearly 20% of GDP after WWI, before gradually rising to about 23% in the 1930s. This was partly related to nascent social insurance but also to the Great Depression, and, in some countries, was due to war preparations. France, Germany, Italy and the UK reported the highest public spending ratios of nearly 30% of GDP.

After World War II, another doubling followed with the expansion in the welfare state. In 1960, public spending was still rather modest and averaged about 28% of GDP. For most continental European countries it was in the range of 30-35% of GDP, at 27% for the US and Japan, and still at below 20% for Switzerland and Spain. This was also a phase of high economic growth and relatively good, but not yet overly excessive, social insurance and welfare, when "the basic uncertainties of life had been eliminated" (Galbraith, J.K., 1958).

The increase in the public expenditure ratio in the following 20 years was quite dramatic. This followed the economic fashion of the time to give a much stronger role to government, notably in respect of social insurance, and an erosion of the institutional constraints on government spending and deficits. The average expenditure ratio increased by more than one-half to about 45% of GDP in 1980. Austria, Belgium, the Netherlands and Sweden all saw more than 50% of their national resources going through the hands of government. Only few governments still reported spending ratios of figures closer to 30%.

By the 1980s, scepticism regarding the role and growth of government had started to increase. And in the 27 years between 1980 and the advent of the global financial crisis in 2007, the average public expenditure ratio hardly changed. A number of countries undertook major expenditure reforms to bring down their expenditure ratio in a first wave in the 1980s, and then in a second wave in the 1990s. These included, for example, Belgium, Ireland, the Netherlands, New Zealand, Sweden and the United Kingdom. Several countries undertook more moderate expenditure reduction efforts while some others experienced major expansions in their expenditure ratios, including Finland, France, Italy, Portugal and Spain.

The figures for the 1980-2007 period mask the fact that, during the first eight years of the Economic and Monetary Union (EMU), the period from 1999 to 2007, a number of countries undertook very expansionary fiscal policies. This, however, only showed up during the

subsequent crisis period when very expansionary expenditure dynamics could no longer be hidden behind buoyant economic growth (Hauptmeier, Sanchez-Fuentes and Schuknecht, 2011).

Between 2007 and 2009, continued strong expenditure growth and the economic recession drove public expenditure ratios up by about 5% of GDP so that, by 2009, public spending had reached an average of 48% of GDP in advanced economies and nearly 52% of GDP in the euro area. For many countries this amounted to a new historic “peak”. Even traditionally “small” government countries reported public spending of over 40% of GDP, including the US. The UK even reported a figure of over 50%.

In recent years, only a few countries have still featured public spending ratios close to the advanced country average of 1960. Only Switzerland, Australia and New Zealand kept public expenditure ratios at around 35% of GDP. And even these report government spending significantly higher than that of competitor countries in Asia, such as Korea or Singapore. In these flourishing countries, governments make do with public spending of only one-fifth or one-quarter of economic output.

Since 2009, public expenditure ratios have started coming down again somewhat in a number of countries. But they remain significantly above pre-crisis levels and only Germany reports a ratio below that of 1999.

This brief historical survey shows three things. Firstly, the major expansion of public expenditure took place after 1960, the heyday of Keynesianism, when the insurance role of government took off under the labels “welfare state” and “demand stabilisation”. Secondly, public expenditure ratios in most countries are now either at or close to their historical peaks. Thus, visible government obligations are at record highs while – as we will see later on – invisible obligations arising from social, financial sector and international insurance have also reached an unprecedented level. And, thirdly, the dynamic economies of Asia feature public sectors that are typically very much smaller than in advanced countries, with lower social insurance spending being the main difference.

4. Public insurance of households: transfers and subsidies

The share of public expenditure that was related to public insurance a century ago was only minimal. As of the late 19th century, the role of families, private charities and the church in the

provision of social assistance to the poor, the elderly or the sick was gradually complemented and ultimately replaced by public mechanisms. Public spending on public transfer and subsidies – which typically includes public spending on the poor, unemployment, the sick and pensions – is a reasonably good proxy for the scope of public insurance spending in the government budget.² In the late 19th century, this type of public spending averaged less than 1% of GDP. This is less than public spending on only long-term care in the advanced economies of today (see Table 2).

Table 2: Transfers and subsidies (as of 1980: social transfers other than those in kind)

| % of GDP | About 1870 | About 1937 | 1960 | 1980 | 1999 | 2007 | 2009 | 2011 |
|--|------------|------------|------|------|------|------|------|------|
| Euro area | | | | | | | | |
| Austria | .. | .. | .. | 16,3 | 19,0 | 17,8 | 19,7 | 19,0 |
| Belgium | 0,2 | .. | 12,7 | 16,9 | 15,6 | 15,4 | 17,3 | 17,2 |
| Finland | .. | .. | .. | 10,9 | 17,7 | 15,1 | 18,2 | 18,0 |
| France | 1,1 | 7,2 | 11,4 | 15,3 | 17,7 | 17,7 | 19,4 | 19,5 |
| Germany | 0,5 | 7,0 | 13,5 | 15,8 | 18,5 | 16,5 | 17,9 | 16,4 |
| Greece | .. | .. | .. | .. | 14,3 | 17,9 | 21,2 | 22,6 |
| Ireland | .. | .. | .. | .. | 7,9 | 9,6 | 14,5 | 15,0 |
| Italy | .. | .. | .. | 12,3 | 16,8 | 17,0 | 19,2 | 19,3 |
| Netherlands | 0,3 | .. | 11,5 | 18,3 | 12,1 | 10,3 | 11,4 | 11,8 |
| Portugal | .. | .. | .. | 6,6 | 10,8 | 14,6 | 17,0 | 17,3 |
| Spain | .. | 2,5 | 1,0 | 12,9 | 12,1 | 11,6 | 14,7 | 15,4 |
| Other EU | | | | | | | | |
| Denmark | .. | .. | .. | 15,7 | 16,8 | 14,9 | 16,7 | 17,2 |
| Sweden | 0,7 | .. | 9,3 | .. | 16,1 | 14,4 | 15,7 | 14,0 |
| UK | 2,2 | 10,3 | 9,2 | 11,8 | 12,8 | 12,6 | 15,0 | 15,1 |
| Other advanced economies | | | | | | | | |
| Australia | .. | .. | ... | .. | .. | .. | .. | .. |
| Canada | .. | .. | .. | 7,9 | 10,8 | 10,1 | 11,6 | .. |
| Japan | 1,1 | 1,4 | 5,5 | .. | 9,8 | 11,6 | 13,7 | 13,7 |
| Korea | .. | .. | .. | .. | .. | .. | .. | .. |
| New Zealand | 0,2 | .. | .. | .. | .. | .. | .. | .. |
| Singapore | .. | .. | .. | .. | .. | .. | .. | .. |
| Switzerland | .. | .. | 6,8 | .. | 10,7 | 10,5 | 11,2 | 10,9 |
| US | .. | .. | .. | 9,9 | 10,7 | 12,2 | 15,2 | 15,3 |
| Averages | | | | | | | | |
| Unweighted average (excl. Singapore & Korea) | 0,8 | 5,7 | 9,0 | 13,1 | 13,9 | 13,9 | 16,1 | 16,3 |
| Euro area 12~ | .. | .. | .. | 13,9 | 16,6 | 15,7 | 17,7 | 17,4 |
| G 7 | .. | .. | .. | 12,2 | 13,9 | 14,0 | 16,0 | 16,5 |

Sources: Ameco; Tanzi and Schuknecht, 2000

~ Before 1999: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain

² “Public transfers” refers to an economic perspective on public expenditure – how much money does the government transfer to private agents for them to spend themselves. It does not include in kind assistance, such as health insurance or public housing. Historical data is very scarce and a separation between transfers and subsidies was not possible for the pre-WWII period.

Before World War I, only Germany, France, the Netherlands and Sweden had compulsory public pension insurance. This was on a limited scale, with for example only 13% of the labour force being covered in France. Public compulsory health insurance had by then been implemented in Austria, Germany, Ireland and the UK, and with equally limited coverage (Flores, 1983).

Emerging welfare systems and the Great Depression contributed to a significant increase in public transfer spending, raising this to about 4% of GDP by the late 1930s. By then, about one-half of the labour force was covered by health and pension insurance. Most advanced countries of the time seem to have had at least voluntary pension, health and unemployment insurance. For the UK, France and Germany, public transfers already amounted to 7-10% of GDP while, for the US, they were only 2%.

Public transfer spending continued to increase after World War II, but the increase remained modest until about 1960. In that year, only a few continental European countries showed figures of above 10% of GDP. Total public transfers were on balance lower than public spending on health care alone today.

In the following two decades, universal coverage of the three social insurances became the norm and drove up transfer spending markedly. Although the figures in Table 2 are not fully comparable between 1960 and 1980 (the numbers for the latter year exclude subsidies, which then averaged 2.5% of GDP), it is safe to say that public transfer spending increased strongly over these two decades. By 1980, transfers averaged about 13% of GDP – three times more than before WWII and many times more than before WWI. Only a few countries, such as the US, Portugal or Canada, maintained public transfers at significantly lower levels.

Between 1980 and 2007, the share of transfers in the economy increased, on average, only slightly. However, there were significant differences across countries. In some countries, the 1980s and 1990s were used for significant reforms. By contrast, Finland, France, Greece, Italy, Portugal – and even Japan, Canada and the US – all notably saw a significant increase. Remarkably, for Portugal, Ireland and Greece, much of this increase took place during the “good” early years of the EMU between 1999 and 2007.

A further significant increase in public spending on transfers occurred during the financial crisis. In France, Greece and Italy, transfer spending had increased to about 20% of GDP by 2009. The increase in Ireland, Portugal, Spain, the UK, Japan and the US was also remarkable at 3-5

percentage points of GDP. Incidentally, these were also all the countries with fiscal crises or huge increases in deficits and public debt.

5. Social expenditure

The fiscal role of government in providing social insurance to individuals and households is well reflected in public social expenditure (see the numerous Organisation for Economic Co-operation and Development (OECD) publications on this issue and the 2012 Aging Report of the Economic Policy Committee (EPC) and the European Commission). This provides benefits in cash (e.g. pensions) or in kind (e.g. health). Total social expenditure is thus typically much higher than the cash transfers discussed in the previous section.

The dynamism of this expenditure category is remarkable. Social expenditure in the advanced economies averaged 17% of GDP in 1980 (see Table 3). By 2007, before the financial crisis, it had increased to about 22% of GDP and was above 23% of GDP in the euro area. The financial crisis saw the social expenditure ratio rise significantly further, by about 3 percentage points to around one-quarter of GDP – 50% higher than in 1980. In Belgium, France and Denmark this ratio reached or exceeded 30% of GDP. By contrast, Korea's social expenditure remained low at nearly 10% of GDP. As regards the components of social expenditure, health and pension spending are the most important and these have “exploded” over recent decades. A century ago, public health spending was very limited. It averaged less than 1% of GDP before and after World War I (see Table 4). By 1960, public spending on health had increased to just slightly above 2% of GDP. The UK, reporting a figure of 3.3%, seemed profligate by these standards. Thereafter, health spending rose rapidly to nearly 5% of GDP by 1980, with Sweden topping the league at 8%. A further significant increase occurred in the following 30 years, particularly in the first decade of the new millennium. Public spending on health expanded to an average of 6% of GDP in 1999 and to almost 8% of GDP by 2009 – more than three times its share of expenditure in 1960. The variation is not very significant, with France and Germany reporting up to 9% of GDP and no country, apart from Korea, registering below 6%. In the US, only a fraction of total health spending is public. But even that amounts to over 8% of GDP. The main drivers of this expansion were increased eligibility and coverage, as well as cost increases via technical progress. As will be discussed later, a significant further impact of population aging on health spending is still to come.

Public pension expenditure went through similar expansionary dynamics. It increased from about 1% of GDP in 1920 to 4.5% in 1960 (Table 5). At that time, the most costly systems were those

of Germany and Austria, at nearly 10% of GDP. By 1980, average public pension spending had increased further to 6-7% of GDP. Since then, another significant increase has occurred, bringing the averages to about 10% of GDP. European countries clearly remain the most “generous”. Pensions in Austria, Finland, France, Germany, Greece, Italy, Japan and Portugal cost between 11% and 15.6% of GDP. The early reason for increased spending was rising replacement ratios in the public pension system: these increased from only 15% in the late 1930s to about 60% in 1980. In recent decades, a growing share of retirees (partly due to generous early retirement provisions) has added to spending pressures.

Table 3: Total social expenditure

| % of GDP | 1980 | 1990 | 1999 | 2007 | 2009 | 2011 |
|---|------|------|------|------|------|------|
| Euro area | | | | | | |
| Austria | 22,4 | 23,8 | 26,8 | 26,3 | 29,1 | 27,9 |
| Belgium | 23,5 | 24,9 | 25,9 | 26,0 | 29,7 | 29,6 |
| Finland | 18,1 | 24,1 | 25,7 | 24,7 | 29,4 | 28,6 |
| France | 20,8 | 25,1 | 29,7 | 29,7 | 32,1 | 32,1 |
| Germany | 22,1 | 21,7 | 26,7 | 25,1 | 27,8 | 26,2 |
| Greece | 10,3 | 16,6 | 19,3 | 21,6 | 23,9 | 23,5 |
| Ireland | 16,5 | 17,3 | 14,1 | 16,7 | 23,6 | 23,5 |
| Italy | 18,0 | 19,9 | 23,2 | 24,7 | 27,8 | 27,6 |
| Netherlands | 24,8 | 25,6 | 20,5 | 21,1 | 23,2 | 23,7 |
| Portugal | 9,9 | 12,5 | 17,6 | 22,7 | 25,6 | 25,2 |
| Spain | 15,5 | 19,9 | 20,4 | 21,3 | 26,0 | 26,0 |
| Other EU | | | | | | |
| Denmark | 24,8 | 25,1 | 27,2 | 26,5 | 30,2 | 30,0 |
| Sweden | 27,1 | 30,2 | 29,6 | 27,3 | 29,8 | 27,6 |
| UK | 16,5 | 16,7 | 18,5 | 20,4 | 24,1 | 23,9 |
| Other advanced economies | | | | | | |
| Australia | 10,3 | 13,2 | 16,5 | 16,4 | 17,8 | 18,1 |
| Canada | 13,7 | 18,1 | 16,7 | 16,8 | 19,2 | 18,3 |
| Japan | 10,2 | 11,1 | 15,9 | 18,7 | 22,4 | .. |
| Korea | .. | 2,8 | 6,2 | 7,6 | 9,4 | 9,2 |
| New Zealand | 17,0 | 21,5 | 19,3 | 18,6 | 21,2 | 21,5 |
| Singapore | .. | .. | .. | .. | .. | .. |
| Switzerland | 13,8 | 13,5 | 18,5 | 18,5 | .. | 20,2 |
| US | 13,2 | 13,6 | 14,6 | 16,3 | 19,2 | 19,7 |
| Averages | | | | | | |
| Unweighted average (excl. Singapore & Korea) | 17,4 | 19,7 | 21,3 | 22,0 | 25,4 | 24,9 |
| Euro area* | 18,4 | 21,0 | 22,7 | 23,6 | 27,1 | 26,7 |
| G 7 | 16,4 | 18,0 | 20,8 | 21,7 | 24,7 | 24,6 |

Sources: OECD, Sozial Expenditure; Tanzi and Schuknecht, 1000

* Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain

Table 4: Public health expenditure

| % of GDP | About 1910 | About 1930 | 1960 | 1980 | 1990 | 1999 | 2007 | 2009 |
|---|------------|------------|------|------|------|------|------|------|
| Euro area | | | | | | | | |
| Austria | .. | 0,2 | 3,1 | 5,1 | 5,4 | 6,6 | 6,7 | 7,3 |
| Belgium | 0,2 | 0,1 | 2,1 | 5,2 | 6,4 | 6,5 | 7,0 | 8,1 |
| Finland | .. | .. | 2,1 | 5,0 | 6,1 | 5,2 | 5,9 | 6,8 |
| France | 0,3 | 0,3 | 2,5 | 5,6 | 6,4 | 8,1 | 8,7 | 9,0 |
| Germany | 0,5 | 0,7 | 3,2 | 6,6 | 6,3 | 7,9 | 7,7 | 8,6 |
| Greece | .. | .. | .. | 3,3 | 3,6 | 4,6 | 5,9 | 6,5 |
| Ireland | .. | 0,6 | 3,0 | 6,7 | 4,3 | 4,5 | 5,9 | 7,1 |
| Italy | .. | .. | .. | 5,5 | 6,1 | 5,5 | 6,6 | 7,4 |
| Netherlands | .. | .. | 1,3 | 5,1 | 5,4 | 5,1 | 7,0 | 7,9 |
| Portugal | .. | .. | .. | 3,3 | 3,7 | 5,4 | 6,7 | 7,2 |
| Spain | .. | .. | 0,9 | 4,2 | 5,1 | 5,3 | 6,1 | 7,0 |
| Other EU | | | | | | | | |
| Denmark | .. | .. | .. | 5,5 | 4,7 | 5,7 | 6,7 | 7,7 |
| Sweden | 0,3 | 0,9 | 3,4 | 8,2 | 7,4 | 6,3 | 6,5 | 7,3 |
| UK | 0,3 | 0,6 | 3,3 | 4,9 | 4,9 | 5,5 | 6,9 | 8,1 |
| Other advanced economies | | | | | | | | |
| Australia | 0,4 | 0,6 | 2,4 | 3,8 | 4,5 | 5,3 | 5,7 | 6,2 |
| Canada | .. | .. | 2,3 | 5,1 | 6,6 | 6,1 | 7,0 | 8,0 |
| Japan | 0,1 | 0,1 | 1,8 | 4,4 | 4,4 | 6,0 | 6,3 | 7,1 |
| Korea | .. | .. | .. | .. | 1,5 | 2,1 | 3,5 | 4,0 |
| New Zealand | 0,7 | 1,1 | 3,5 | 5,1 | 5,6 | 5,8 | 7,0 | 8,3 |
| Singapore | .. | .. | .. | .. | .. | .. | .. | .. |
| Switzerland | .. | 0,3 | 2,0 | 3,6 | 3,9 | 5,0 | 5,6 | .. |
| US | 0,3 | 0,3 | 1,3 | 3,8 | 4,9 | 5,9 | 7,4 | 8,3 |
| Averages | | | | | | | | |
| Unweighted average (excl. Singapore & Korea) | | | 2,4 | 5,0 | 5,3 | 5,8 | 6,7 | |
| | 0,3 | 0,5 | | | | | | 7,6 |
| Euro area* | .. | .. | 2,3 | 5,1 | 5,3 | 5,9 | 6,7 | 7,5 |
| G 7 | .. | .. | 2,4 | 5,1 | 5,7 | 6,4 | 7,2 | 8,1 |

Sources: OECD, Social Expenditure; Tanzi and Schuknecht, 2000

European Commission and EPC, 2009 and 2012 Aging Reports

* Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain

Table 5: Public pension expenditure (old age and survivor benefits)

| % of GDP | About 1920 | About 1937 | 1960 | 1980 | 1990 | 1999 | 2007 | 2009 |
|---|---------------|---------------|------|------|------|------|------|------|
| Euro area | | | | | | | | |
| Austria | 2,4 | 2,4 | 9,6 | 10,7 | 11,5 | 12,6 | 12,6 | 14,0 |
| Belgium | 0,3 | 3,7 | 4,3 | 8,9 | 9,1 | 9,2 | 9,0 | 10,2 |
| Finland | .. | .. | .. | 6,0 | 8,0 | 8,7 | 9,2 | 11,1 |
| France | 1,6 | .. | 6,0 | 9,5 | 10,8 | 12,3 | 12,9 | 14,1 |
| Germany | 2,1 | .. | 9,7 | 10,6 | 9,9 | 11,1 | 10,6 | 11,3 |
| Greece | .. | .. | .. | 5,4 | 9,9 | 11,2 | 12,1 | 13,1 |
| Ireland | .. | .. | 2,5 | 5,6 | 5,3 | 3,4 | 3,9 | 5,6 |
| Italy | 2,1 | .. | 5,5 | 8,9 | 10,1 | 13,9 | 14,1 | 15,6 |
| Netherlands | .. | .. | 4,0 | 6,9 | 7,2 | 5,8 | 5,5 | 6,0 |
| Portugal | .. | .. | .. | 3,7 | 4,9 | 7,7 | 10,8 | 12,4 |
| Spain | 0,9 | 2,0 | .. | 6,3 | 8,1 | 8,7 | 8,4 | 9,9 |
| Other EU | | | | | | | | |
| Denmark | .. | .. | .. | 7,1 | 7,3 | 7,4 | 7,3 | 8,2 |
| Sweden | 0,5 | .. | 4,4 | 8,3 | 9,3 | 9,9 | 9,5 | 10,7 |
| UK | 2,2 | 1,0 | 4,0 | 5,9 | 5,1 | 5,7 | 5,9 | 6,8 |
| Other advanced economies | | | | | | | | |
| Australia | .. | 0,7 | 3,3 | 3,7 | 3,6 | 4,3 | 4,9 | 5,1 |
| Canada | .. | .. | 2,8 | 3,0 | 4,2 | 4,5 | 4,1 | 4,5 |
| Japan | 0,3 | 0,8 | 1,3 | 4,0 | 4,9 | 7,5 | 10,1 | 11,8 |
| Korea | .. | .. | .. | .. | 0,8 | 2,6 | 1,9 | 2,4 |
| New Zealand | .. | 2,9 | 4,3 | 7,1 | 7,5 | 5,1 | 4,3 | 4,7 |
| Singapore | .. | .. | .. | .. | .. | .. | .. | .. |
| Switzerland | .. | .. | 2,3 | 6,0 | 5,9 | 7,1 | 6,7 | .. |
| US | 0,7 | .. | 4,1 | 6,2 | 6,1 | 5,9 | 6,0 | 6,9 |
| Averages | | | | | | | | |
| Unweighted average (excl. Singapore & Korea) | 1,3 | 1,9 | 4,5 | 6,7 | 7,4 | 8,1 | 8,4 | 9,6 |
| Euro area* | .. | .. | .. | 7,5 | 8,6 | 9,5 | 9,9 | 11,2 |
| G 7 | .. | .. | .. | 6,9 | 7,3 | 8,7 | 9,1 | 10,1 |

Sources: OECD, Social Expenditure; Tanzi and Schuknecht, 2000

* Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain

Public insurance for longevity and disability combined – reported under long-term care – is a relatively new type of social insurance. As people have been living longer and families have been shrinking, the government has expanded its role in this area over the past two decades. By 2009, public spending on long-term care averaged about 1% of GDP with a strong upward tendency – a tripling from 1980. Belgium, Denmark and the Netherlands report the highest expenditure ratio under this category.

Unemployment compensation is perhaps the least contentious element of public insurance. Public spending on this was already quite high in some countries before World War II, as the

Great Depression had not yet fully ended (see Table 6). With full employment, this expenditure category had shrunken considerably by 1960, when spending in most countries was well below 1% of GDP. In the 1970s and 1980s, structural unemployment increased significantly in many industrialised countries. Consequently, public spending on unemployment benefits also increased to about 1% of GDP in 1980 and further to about 1.25% in 1990 and beyond. Labour market reforms and the economic boom of the post-1999 period helped reduce unemployment payments, on average, to about 1% of GDP in 2007. The financial crisis, however, saw a significant increase in this ratio. In addition, active labour market policies, absorbed 0.5 to 1 percentage point of GDP per year in the period 1980-2010. On the whole, this spending category is one of the few that has not experienced a structural upward dynamic since the 1980s.

There are also a number of other social benefits that should be subsumed under the label “social insurance”: maternity benefits against the loss in income from pregnancy and childcare, disability benefits, occupational injury benefits, housing benefits, survivor benefits, etc. These expenditure categories have only experienced a moderate upward dynamic over the past three decades, but, from a fiscal perspective, they are very important. Public spending on these averaged about 6% of GDP in 2007, i.e. before the financial crisis, and, in the Nordic countries, amounted to 9-12% of GDP.

All in all, public spending on social insurance by now absorbs about one-quarter of GDP and well over one-half of all public resources. In fact, social expenditure in the early 2010s is only slightly below what governments spent overall 50 years earlier in 1960.

Furthermore, population aging will put significant upward pressure on these spending categories in the coming decades if there are no further reforms. For the European Union (EU) and the euro area, the EPC and the European Commission project a further increase of about 4 percentage points of GDP by 2060 (see Table 7), which is still a conservative estimate. This increase is mostly coming from long-term care and pensions. It would be more than 5% of GDP for Belgium, Germany, Ireland, the Netherlands and Finland. Only Austria and Portugal do not have to fear an increase in public spending due to population aging. Altogether, social insurance spending would then rise to about 30% or more of GDP in Europe. Outside of the EU, in the United States, health expenditure will be a particular challenge for public finances and the economy as a whole.

Table 6: Unemployment benefits

| % of GDP | About 1937 | 1960 | 1980 | 1990 | 1999 | 2007 | 2009 |
|---|---------------|------|------|------|------|------|------|
| Euro area | | | | | | | |
| Austria | .. | 0,3 | 0,4 | 0,9 | 1,0 | 0,9 | 1,1 |
| Belgium | 0,9 | 0,7 | 2,4 | 2,9 | 3,0 | 3,1 | 3,7 |
| Finland | .. | .. | 0,6 | 1,1 | 2,5 | 1,5 | 2,0 |
| France | .. | 0,2 | 0,0 | 1,7 | 1,6 | 1,4 | 1,5 |
| Germany | .. | 0,1 | 0,5 | 0,8 | 1,4 | 1,4 | 1,7 |
| Greece | .. | .. | 0,2 | 0,4 | 0,4 | 0,5 | 0,7 |
| Ireland | .. | 0,6 | .. | 2,1 | 1,0 | 1,0 | 2,6 |
| Italy | .. | 0,2 | 0,6 | 0,6 | 0,5 | 0,4 | 0,8 |
| Netherlands | .. | 0,2 | 1,6 | 2,5 | 1,5 | 1,1 | 1,4 |
| Portugal | .. | .. | 0,3 | 0,3 | 0,6 | 1,2 | 1,2 |
| Spain | .. | .. | 2,0 | 3,2 | 2,1 | 1,8 | 3,5 |
| Other EU | | | | | | | |
| Denmark | .. | .. | 4,8 | 4,2 | 3,1 | 1,9 | 2,3 |
| Sweden | 0,2 | 0,2 | 0,4 | 0,9 | 1,6 | 0,7 | 0,7 |
| UK | 3,2 | 0,2 | 1,2 | 0,7 | 0,4 | 0,2 | 0,5 |
| Other advanced economies | | | | | | | |
| Australia | .. | 0,1 | 0,6 | 1,1 | 1,0 | 0,4 | 0,5 |
| Canada | .. | 1,5 | 1,2 | 1,9 | 0,8 | 0,6 | 1,0 |
| Japan | .. | 0,3 | 0,5 | 0,3 | 0,6 | 0,3 | 0,7 |
| Korea | .. | .. | .. | .. | 0,2 | 0,2 | 0,4 |
| New Zealand | .. | 0,0 | 0,5 | 1,9 | 1,5 | 0,2 | 0,5 |
| Singapore | .. | .. | .. | .. | .. | .. | .. |
| Switzerland | 0,6 | 0,0 | 0,1 | 0,1 | 0,7 | 0,6 | .. |
| US | 2,2 | 0,6 | 0,7 | 0,4 | 0,3 | 0,3 | 0,9 |
| Averages | | | | | | | |
| Unweighted average (excl. Singapore & Korea) | 1,4 | 0,3 | 1,0 | 1,4 | 1,3 | 1,0 | 1,4 |
| Euro area* | .. | 0,3 | 0,9 | 1,5 | 1,4 | 1,3 | 1,8 |
| G 7 | .. | 0,4 | 0,7 | 0,9 | 0,8 | 0,7 | 1,0 |

Sources: OECD, Social Expenditure; Tanzi and Schuknecht, 2000

* Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain

6. Public insurance of the corporate sector

Governments have not only been providing insurance to individuals and households but also to the corporate sector. This can be directly via subsidies and more indirectly via regulation (e.g. monopoly rights) or import tariffs. The latter have been popular historical means to guarantee companies' existence/profits while also generating government revenues. The role of government has changed with post-war trade liberalisation and deregulation so that subsidies have become a more prominent fiscal means of insuring private firms.

Compared to the fiscal role of household insurance, the role of subsidies is rather limited and has been declining over time. Historical data is scant but figures cannot have been large (they are included in the very low numbers for historical data in Table 2). In the 1970s and 1980s, for which better data is available, subsidies reached about 1.5-3% of GDP in most countries (see Table 8). In the 1990s and early 2000s, subsidies gradually declined to an average of slightly above 1% of GDP, which is roughly the same as public spending on long-term care. Only Austria and Switzerland reported public subsidies in excess of 3% of GDP.

Table 7: Projected increase in age-related expenditure, 2010-60

| % of GDP | Pensions | Health care | Long-term care | Total |
|---------------------------|----------|-------------|----------------|-------|
| Euro area | | | | |
| Austria | 2,0 | 1,6 | 1,2 | 4,8 |
| Belgium | 1,1 | 0,5 | 0,3 | 1,9 |
| Finland | 3,2 | 1,0 | 2,6 | 6,8 |
| France | 0,5 | 1,4 | 2,1 | 4,0 |
| Germany* | 2,6 | 1,4 | 1,7 | 5,7 |
| Greece | .. | .. | .. | .. |
| Ireland | .. | .. | .. | .. |
| Italy | 0,9 | 0,6 | 0,9 | 2,4 |
| Portugal | 3,6 | 1,0 | 4,1 | 8,7 |
| Portugal | 0,2 | 1,1 | 0,3 | 1,6 |
| Spain | 3,6 | 1,3 | 0,7 | 5,6 |
| Other EU | | | | |
| Denmark | -0,6 | 0,9 | 3,5 | 3,8 |
| Sweden | 0,6 | 0,7 | 2,5 | 3,8 |
| UK | 1,5 | 1,1 | 0,7 | 3,3 |
| Unweighted average | 1,6 | 1,1 | 1,7 | 4,4 |

Source: European Commission and EPC, 2012 Aging Report

However, the public sector has also been “insuring” private corporations through other channels. Guarantees or “fixed” minimum prices have been used to provide a “secure” business environment. Germany has introduced rather innovative parafiscal support instruments for its solar energy producers: they get a guaranteed minimum price, with the difference between this and the market price being paid for via an electricity price surcharge. The discounted value of these above-market price guarantees is estimated to have been more than EUR 100 billion since 2012. Economy-wide and internationally comparable estimates of the annual or discounted value of all such “parafiscal” measures are, however, not available.

Table 8: Subsidies

| % of GDP | 1980 | 1999 | 2007 | 2011 |
|---|------|------|------|------|
| Euro area | | | | |
| Austria | 3,09 | 3,32 | 3,25 | 3,44 |
| Belgium | 2,71 | 1,23 | 1,93 | 2,70 |
| Finland | 3,10 | 1,60 | 1,29 | 1,44 |
| France | 1,98 | 1,50 | 1,42 | 1,48 |
| Germany | 1,76 | 1,78 | 1,02 | 1,04 |
| Greece | .. | 0,17 | 0,06 | 0,06 |
| Ireland | .. | 0,81 | 0,46 | 0,40 |
| Italy | 2,63 | 1,21 | 1,04 | 1,07 |
| Netherlands | 1,74 | 1,49 | 1,25 | 1,41 |
| Portugal | 4,21 | 1,37 | 0,80 | 0,70 |
| Spain | .. | 1,18 | 1,07 | 1,11 |
| Other EU | | | | |
| Denmark | 1,62 | 2,55 | 2,20 | 2,60 |
| Sweden | | 1,95 | 1,42 | 1,48 |
| UK | 2,16 | 0,43 | 0,65 | 0,56 |
| Other advanced economies | | | | |
| Australia | .. | .. | .. | .. |
| Canada | 2,74 | 1,00 | 1,08 | .. |
| Japan | .. | 0,85 | 0,54 | 0,64 |
| Korea | .. | .. | .. | .. |
| New Zealand | .. | .. | .. | .. |
| Singapore | .. | .. | .. | .. |
| Switzerland | .. | 3,91 | 3,54 | 3,35 |
| US | 0,35 | 0,49 | 0,39 | 0,41 |
| Averages | | | | |
| Unweighted average (excl. Singapore & Korea) | 2,34 | 1,49 | 1,30 | 1,40 |
| Euro area 12 * | 2,65 | 1,52 | 1,20 | 1,29 |
| G 7 | 1,94 | 1,04 | 0,88 | 0,87 |

Source: Ameco

* Before 1999: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain

The most important public insurance in industrialised countries is being provided to the financial sector.³ Whether deliberately or “by chance”, financial institutions had engaged in overly risky business with too little capital in the run up to the financial crisis that emerged in 2007. This generated big profits (and tax revenues) in good times. But it also created huge fiscal costs to clean up the balance sheets of overleveraged and over-indebted private households, companies and financial institutions that were eventually revealed in the wake of the crisis.

³ For a historic account see Reinhard and Rogoff (2009).

Given the numerous early warning signals (real estate bubbles, strong credit growth), these developments were rather predictable in retrospect. Earlier financial crises had followed the same pattern. And they had often been very costly – most notably in emerging markets, but also in industrialised countries (Table 9). For Finland and Japan, the net fiscal costs of the early 1990s' crisis exceeded 10% of GDP. The emerging market crises from the 1980s until the early 2000s were typically much more expensive: fiscal costs ranged from 5-6% of GDP in Malaysia and Russia to 10-35% in Brazil, Chile, Korea, Mexico, Thailand, Turkey and Uruguay, and to over 50% in the case of Indonesia. These are truly staggering numbers (see also sections 9 and 10 for the implications for sustainability and redistribution).

Table 9: Financial costs in systemic banking crises until 2007 - selected countries

| Country | Crises dates | Total gross fiscal cost (% of GDP) | Total net fiscal cost (% of GDP) | Recovery ratio (% of gross fiscal cost) | Gross bank recapitalization cost (% of GDP) | Net recapitalization cost (% of GDP) | Recovery ratio from capital injections (% of capital injections) | Output loss (level estimate) (% of trend GDP) |
|------------------------------|------------------|---------------------------------------|-------------------------------------|--|--|---|---|--|
| Average all countries | 1970-2007 | 14.8 | 13.0 | 17.8 | 7.8 | 6.0 | 20.0 | 19.3 |
| EU countries | 1970-2007 | 6.6 | 5.5 | 23.9 | 2.8 | 2.4 | 12.1 | 18.4 |
| Finland | 1991 - 94 | 12.8 | 11.1 | 13.4 | 8.6 | 6.9 | 19.9 | 59.1 |
| Norway | 1991 - 93 | 2.7 | 0.6 | 77.8 | 2.6 | 0.6 | 76.6 | 0.0 |
| Sweden | 1991 - 94 | 3.6 | 0.2 | 94.4 | 1.9 | 1.5 | 19.5 | 30.6 |
| Argentina | 2001 - 05 | 9.6 | 9.6 | 0.0 | 9.6 | 9.6 | 0.0 | 42.7 |
| Brazil | 1994 - 96 | 13.2 | 10.2 | 22.7 | 5.0 | 5.0 | 0.0 | 0.0 |
| Chile | 1981 - 87 | 42.9 | 16.8 | 60.8 | 34.3 | 6.5 | 81.2 | 92.4 |
| Indonesia | 1997 - 2002 | 56.8 | 52.3 | 7.9 | 37.3 | 37.3 | 0.0 | 67.9 |
| Japan | 1997 - 2002 | 14.0 | 13.9 | 0.6 | 6.6 | 6.5 | 1.4 | 17.6 |
| Korea | 1997 - 2002 | 31.2 | 23.2 | 25.6 | 19.3 | 15.8 | 18.1 | 50.1 |
| Mexico | 1994 - 97 | 19.3 | 18.0 | 6.7 | 3.8 | ... | ... | 4.2 |
| Malaysia | 1997 - 2002 | 16.4 | 5.1 | 68.9 | 16.4 | 5.1 | 68.9 | 50.0 |
| Russia | 1998 - 2000 | 6.0 | 6.0 | 0.0 | 0.0 | 0.0 | ... | 0.0 |
| Thailand | 1997 - 2002 | 43.8 | 34.8 | 20.5 | 18.8 | 18.8 | 0.0 | 97.7 |
| Turkey | 2000 - 03 | 32.0 | 30.7 | 4.1 | 24.5 | 23.2 | 5.3 | 5.4 |
| Uruguay | 2002 - 05 | 20.0 | 10.8 | 45.8 | 6.2 | 5.0 | 18.8 | 28.8 |

Sources: Data from Laeven and Valencia (2008) "Systemic Banking Crises: A New Database", IMF Working Paper 08/224 and Commission services.

The net fiscal costs of the financial crisis that started in 2007 have yet to fully materialise. So far, Ireland has had the highest price to pay: 38% of GDP (see Table 10). Germany comes second with 12.4% of GDP, ahead of a number of countries posting costs of around 5% of GDP. The 2% figure reported for Spain will clearly be higher, given the EUR 100 billion recapitalisation programme and the roughly EUR 40 billion recapitalisation/bad bank costs that had been agreed at the time this article was written.

Table 10: Financial costs recent crisis

(Cumulative until July 2011 in percentage of 2011 GDP)

| | Direct support | Recovery | Net direct support |
|-----------------------|----------------|----------|--------------------|
| Belgium | 5.7 | 0.3 | 5.4 |
| Ireland | 40.6 | 2.6 | 38.0 |
| Germany | 13.2 | 0.8 | 12.4 |
| Greece | 5.8 | 0.4 | 5.4 |
| Netherlands | 14.0 | 8.8 | 5.1 |
| Spain | 3.0 | 0.9 | 2.1 |
| United Kingdom | 6.7 | 1.1 | 5.7 |
| United States | 5.1 | 2.0 | 3.1 |
| Average | 6.8 | 1.8 | 4.9 |

Note:

Fiscal outlays of the **central government**,

except for Germany and Belgium (support by subnational governments also included).

Source: IMF Fiscal Monitor - September 2011

It is difficult to estimate just how much this insurance of the financial industry will finally cost governments of advanced economies. One approximation would be to first estimate the debt overhang in the private sector, and, second, to make an assumption about the share that would be transferred to public budgets. For the euro area, the debt overhang could be approximated as the private debt that exceeds the threshold value in the EU scoreboard for the surveillance of macroeconomic imbalances (i.e. 160% of GDP for corporations and households, yielding 80% each if divided equally). Table 11 shows that the most serious household debt overhang can be found in Portugal and the Netherlands. France, Spain, Portugal and Ireland feature the most indebted corporate sectors. The debt overhang, measured as such, would be about EUR 2 billion for the eight countries reported below (these account for around 85% of the euro area). If one-third of it were to hit public balance sheets, the average public debt ratio of the euro area would increase by over 20% of GDP and that of some countries by significantly more.

Table 11: Private sector debt overhang in 2011 (Selected countries in the euro area)

| % of GDP | Private debt | | | |
|----------------------------|------------------|-------|-------------|--------|
| | Households total | > 80% | Firms total | > 80% |
| Germany | 59,8 | 0,0 | 78,0 | 0 |
| France | 55,9 | 0,0 | 103,7 | 23,7 |
| Italy | 45,4 | 0,0 | 86,9 | 6,9 |
| Spain | 81,5 | 1,5 | 133,6 | 53,6 |
| Netherlands | 126,3 | 46,3 | 93,8 | 13,8 |
| Greece | 61,3 | 0,0 | 62,8 | 0 |
| Portugal | 115,0 | 35,0 | 171,5 | 91,5 |
| Ireland | 92,4 | 12,4 | 157,5 | 77,5 |
| Total (% of euro area GDP) | 58,2 | 4,0 | 86,3 | 16,1 |
| Total (EUR billion) | 5.479,2 | 374,2 | 8121,4 | 1518,0 |

Source: ECB, AMECO

7. Insuring aggregate demand

In the array of government insurance instruments, aggregate demand has regained significant prominence. From a cyclical perspective, the role of a large public sector to “insure” against economic instability seems instantly plausible. The so-called “automatic stabilisers” are an efficient and effective means to stabilise demand. The logic here is simple: while public revenue fluctuates with the business cycle, public spending should be less volatile and should continue to develop broadly in line with trend GDP. Public spending therefore supports demand in downturns and moderates it in boom periods.

A crude measure of automatic stabilisers is the total size of government spending, which has increased significantly and is particularly high in Europe (see Table 1). In Europe, automatic stabilisers have therefore been seen as very powerful: with a 50% expenditure share of GDP, a 1% fall in output would be countervailed by roughly one-half through the inertia of public spending.

Unfortunately, allowing the operation of automatic stabilisers is not trivial. The measurement of the output gap and cyclical budgetary positions (to which automatic stabilisers relate) is prone to huge measurement errors. In the past, these related mainly to a tendency to over-estimate potential growth. Countries may then find that neutral fiscal policies in real time may turn out expansionary ex post (i.e. a pro-cyclical fiscal stimulus) as the country had been unknowingly in “good times” and expenditure dynamics stronger than “true” potential growth would have allowed. Moreover, fiscal activism – via the expansion of public spending programmes – has at times been pursued during downturns to “insure” aggregate demand. This contributed to the ratcheting up of public spending in the 1970s and again in the financial crisis in the period 2008-09. Moreover, there is a hugely controversial and rather inconclusive debate on the size of the demand impact of fiscal measures under the heading “fiscal multipliers”; a good overview of the various arguments is provided by the European Central Bank (ECB, 2012).

The effect of expansionary expenditure policies during the boom and crisis period after the start of the EMU in a number of advanced economies has been measured by Hauptmeier, Sanchez-Fuentes and Schuknecht (2011). Between 1999 and 2007, public expenditure was expansionary to the magnitude of 2-5 percentage points of GDP in Spain, Greece, Ireland, Italy, the UK, the US and Portugal, and by about 1 percentage point in France (see Table 12). The additional stimulus in the euro area countries in 2007-09 was 2 percentage points of GDP and about 5 percentage points for Ireland and the UK (the difference between columns 1 and 2 of Table 12).

While this may have significantly stimulated aggregate demand, thereby “insuring” the economy from the vagaries of the crisis, it set the stage for much higher deficits and debt in Europe’s crisis countries, and in the UK and the US.

Table 12: Cumulative increase in expenditure ratio (% of GDP) due to expansionary expenditure policies (relative to nominal potential GDP growth)

| | 1999-2007 | -2009 |
|-----------------------|------------|------------|
| Euro Area (12) | 0.1 | 1.9 |
| <i>Germany</i> | -2.1 | -0.9 |
| <i>France</i> | 0.8 | 1.8 |
| <i>Italy</i> | 2.5 | 3.6 |
| <i>Spain</i> | 1.7 | 5.2 |
| <i>Greece</i> | 5.0 | 8.0 |
| <i>Ireland</i> | 3.9 | 9.5 |
| <i>Portugal</i> | 2.0 | 5.0 |
| <i>Memorandum:</i> | | |
| <i>EA(12) – DE</i> | 1.1 | 3.0 |
| <i>UK</i> | 4.9 | 8.6 |
| <i>US</i> | 3.0 | 6.3 |

Source: Hauptmeier, Sanchez-Fuentes and Schuknecht, 2011

An important means for governments to safeguard the livelihoods of their citizens more directly has been public consumption and its major sub-component, public employment. Government consumption or “real expenditure”, as it is sometimes referred to, has been historically much less dynamic than social spending and its share of total spending has gradually declined. About one-half of public spending (nearly 5% of GDP) was under this category in the late 19th century (see Table 13). This included public administration, education, the military, etc. Public consumption doubled by the late 1930s and increased somewhat further until 1960 (to 13% of GDP). By 2007, public consumption had increased to about 20% of GDP before rising somewhat further in the financial crisis.

Public employment amounted to only 2-4% of total employment before WW1, and averaged 5% before WW2. It increased rapidly thereafter and exceeded 10% of total employment in most countries by 1960 before rising further to above 15% in the early 2000s. In 2007, the Nordic countries, France and Canada reported the highest public employment ratios, ranging from 22% to 31% of total employment. Public employment, thereby, became an important means of

ensuring livelihoods and aggregate demand. By contrast, in a number of European and Asian countries, only around 10% of the work force is employed in the public sector.

Table 13: Government consumption

| % of GDP | About 1870 | About 1937 | 1960 | 1980 | 1999 | 2007 | 2011 |
|---|---------------|---------------|------|------|------|------|------|
| Euro area | | | | | | | |
| Austria | .. | .. | 13,2 | 18,3 | 19,6 | 18,0 | 18,9 |
| Belgium | .. | .. | 15,3 | 22,9 | 21,4 | 22,2 | 24,4 |
| Finland | .. | .. | 12,4 | 18,4 | 21,4 | 21,5 | 24,3 |
| France | 5,4 | 15,0 | 15,2 | 21,4 | 23,2 | 23,1 | 24,5 |
| Germany* | .. | 21,0 | 13,0 | 19,6 | 19,2 | 17,9 | 19,3 |
| Greece | .. | .. | 11,7 | 14,3 | 17,0 | 17,8 | 17,4 |
| Ireland | .. | .. | 12,6 | 20,2 | 14,9 | 17,2 | 18,6 |
| Italy | .. | .. | 14,2 | 16,8 | 18,1 | 19,5 | 20,5 |
| Netherlands | 6,7 | 12,3 | 16,0 | 24,5 | 22,2 | 25,2 | 27,9 |
| Portugal | .. | .. | 9,0 | 13,4 | 18,1 | 19,8 | 20,1 |
| Spain | 4,9 | 10,7 | 8,8 | 13,9 | 17,2 | 18,3 | 20,9 |
| Other EU | | | | | | | |
| Denmark | .. | .. | 13,4 | 27,1 | 25,7 | 26,0 | 28,6 |
| Sweden | 5,5 | 10,4 | 16,1 | 29,3 | 26,7 | 25,5 | 26,5 |
| UK | .. | 11,7 | 17,2 | 21,7 | 18,3 | 21,0 | 22,5 |
| Other advanced economies | | | | | | | |
| Australia | 4,8 | 5,5 | 11,2 | 17,4 | 17,6 | 17,1 | 21,1 |
| Canada | .. | 10,1 | 14,3 | 21,3 | 18,9 | 19,2 | 20,8 |
| Japan | .. | 12,4 | 11,5 | 14,1 | 16,3 | 18,1 | 20,1 |
| Korea | .. | .. | .. | 12,7 | 12,1 | 14,7 | 15,3 |
| New Zealand | .. | .. | 12,2 | 20,3 | 18,1 | 18,7 | 25,8 |
| Singapore | .. | .. | 9,1 | 9,8 | 9,9 | 9,5 | 10,3 |
| Switzerland | .. | .. | 6,6 | 9,5 | 11,1 | 10,7 | 11,1 |
| US | 2,5 | 12,9 | 16,6 | 16,8 | 14,3 | 15,9 | 17,3 |
| Averages | | | | | | | |
| Unweighted average (excl. Singapore & Korea) | 5,0 | 12,2 | 13,0 | 19,1 | 19,0 | 19,6 | 21,5 |
| Euro area 12~ | .. | .. | 12,8 | 18,5 | 19,9 | 20,0 | 21,6 |
| G 7 | .. | .. | 14,6 | 18,8 | 18,3 | 19,2 | 20,7 |

Source: Ameco; World Economic Outlook; Tanzi and Schuknecht, 2000

~ Before 1999: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain

*=Until 1990, only West Germany

Table 14: Public employment as a share of total employment

| % of GDP | About 1870 | About 1913 | 1960 | 1980 | 1999 | 2007 |
|---|------------|------------|------|------|------|------|
| Euro area | | | | | | |
| Austria | 1,9 | 4,7 | 10,6 | 13,5 | 13,3 | 11,9 |
| Belgium | 2,2 | 4,8 | 12,2 | 19,0 | 18,4 | 18,2 |
| Finland | .. | .. | 8,2 | 19,4 | 25,4 | 24,5 |
| France | 2,5 | 3,0 | .. | 19,0 | 22,7 | 22,6 |
| Germany* | 1,2 | 2,4 | 9,2 | 14,2 | 12,0 | 10,7 |
| Greece | .. | .. | 4,5 | 9,7 | 12,4 | 12,0 |
| Ireland | 2,5 | 2,6 | .. | 16,4 | 12,3 | 12,9 |
| Italy | 2,6 | 4,4 | 7,7 | 14,5 | 15,5 | 14,5 |
| Netherlands | 3,5 | 4,6 | 11,7 | 12,7 | 10,9 | 11,3 |
| Portugal | .. | .. | 4,9 | 10,6 | 14,5 | 14,0 |
| Spain | .. | .. | .. | 8,9 | 13,6 | 13,3 |
| Other EU | | | | | | |
| Denmark | .. | .. | 10,2 | 27,8 | 30,7 | 29,0 |
| Sweden | 2,2 | 3,5 | 13,8 | 33,0 | 32,4 | 31,1 |
| UK | 4,9 | 4,1 | 14,8 | 27,3 | 17,9 | 18,6 |
| Other advanced economies | | | | | | |
| Australia | 1,4 | 1,7 | 11,2 | 17,4 | 14,0 | .. |
| Canada | .. | .. | .. | 19,9 | 20,4 | 21,3 |
| Japan | 1,0 | 3,1 | .. | 8,8 | 8,4 | 8,5 |
| Korea | .. | .. | .. | 8,5 | 9,5 | 10,7 |
| New Zealand | .. | .. | .. | 16,9 | 12,9 | .. |
| Singapore | .. | .. | .. | .. | 6,3 | .. |
| Switzerland | 2,4 | 5,7 | 7,3 | 10,7 | .. | .. |
| US | 2,9 | 3,7 | 12,4 | 16,1 | 14,4 | 14,8 |
| Averages | | | | | | |
| Unweighted average (excl. Singapore & Korea) | 2,4 | 3,7 | 9,9 | 16,8 | 17,0 | 17,0 |
| Euro area* | .. | .. | .. | 14,6 | 15,3 | 14,6 |
| G 7 | .. | .. | 11,0 | 17,1 | 15,9 | 15,9 |

Source: International Labour Organization; Tanzi and Schuknecht, 2000

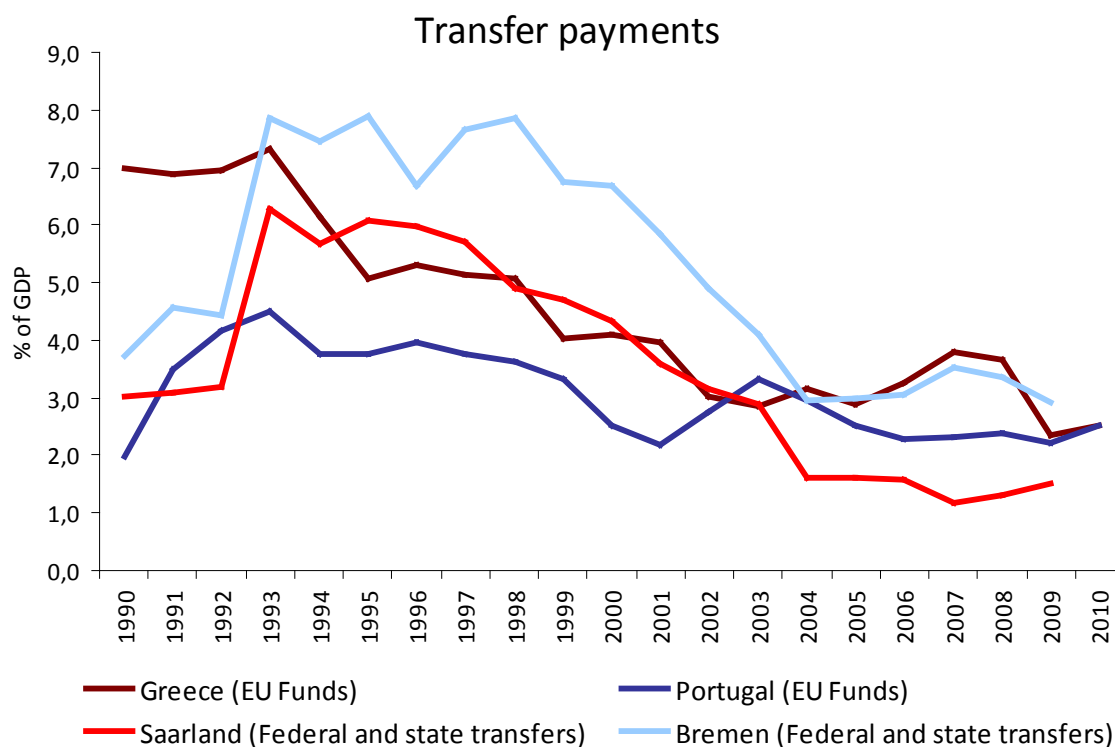
* Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain

*=Until 1990, only West Germany

8. Insurance of regions and countries

Another important dimension of “public insurance” lies in inter-regional transfers. These can be very significant. Within Germany, for example, transfers to Bremen and Saarland via the country’s “revenue equalisation system” amounted to about 5-7% of GDP per annum in the 1990s (see Chart 1). These transfers came down to about 2-3% of GDP in the early 2000s.

Chart 1: Transfer payments within Germany and the EU



Source: AMECO, BMF

Notes: a) Saarland and Bremen: federal and state current and capital transfers + fiscal equalisation transfers
 b) Greece and Portugal: structural + cohesion funds

A relatively new, but potentially hugely important, type of public insurance consists of financial support across countries. If the public finances of one country cannot cope with the fiscal burden, be it for reasons of unsustainable public insurance, a government liquidity shock or other factors, it can still seek support (insurance) from other countries to prevent domestic macroeconomic destabilisation.

“International public insurance” has been in existence for decades and is much more “common” than one would first expect. Since the Second World War, the IMF has provided insurance in the form of adjustment loans against conditionality to many countries in financial difficulties. However, the global scale of this kind of insurance is still rather limited despite what the absolute numbers would appear to suggest. The IMF’s lending potential was 0.7% of world GDP (or USD 222 billion) in 2000. By 2012/13, this had increased to about 1.4% of world GDP or USD 1 trillion (including bilateral lending potential). September 2012 data indicate that actual total lending commitments accounted for one-quarter of this or one-third a percentage point of GDP . At the same time, the support of individual countries by the IMF (typically measured as a

share of the individual country quota) has tended to increase over time. It reached new highs in the European debt crisis when Greece and Portugal both received a lending commitment of over 2000% of their quota (ca. 12% and 15% of GDP, respectively).

Assessing the full extent of international insurance in the context of the euro area debt crisis requires the inclusion of intra-European support facilities (see Table 15). Such facilities (bilateral loans to Greece, the European Financial Stabilisation Mechanism (EFSM) at the EU level and the European Financial Stability Facility (EFSF)/European Stability Mechanism (ESM) at the euro area level) provide potential financing of about EUR 800 billion (i.e. over USD 1 trillion). Including IMF financing (which in May 2010 the IMF had set at a potential EUR 250 billion), total euro area cross-border insurance would be over EUR 1 trillion, or 10.6% of the currency area's 2012 GDP. Commitments to Greece, Ireland and Portugal were highest and reached 110% of GDP for Greece and over 40% of GDP for the other two countries. In addition, cross-country liabilities of the central banks of euro area countries to the ECB, comprised in the TARGET2 balances of the Eurosystem, should be mentioned in this context and will be discussed further in Section 10.

The four countries with European/IMF support programmes also have the highest external vulnerability and thus potential “insurance needs”. External debt in the four countries was clearly extremely large and is close to or even above 100% of GDP in 2010. Slovenia and Cyprus were two other euro area countries with rising foreign debt dynamics. By contrast, for the euro area as a whole, the net foreign assets position was broadly in balance.

Table 15: Contingent cross-country liabilities for selected euro area countries

| | Bilateral | EFSM | EFSF/ESM | IMF | Total | % of GDP ¹⁾ |
|------------------------|-----------|------|----------|-----------------------|----------|------------------------|
| Greece | | | | | | |
| Drawn | 73,0 | - | 73,9 | 1,6 | 148,5 | 69,0 |
| Committed | 73,0 | - | 144,6 | 19,8 | 237,4 | 110,4 |
| Portugal | | | | | | |
| Drawn | - | 20,1 | 17,4 | 19,5 | 57,0 | 33,3 |
| Committed | - | 26,0 | 26,0 | 27,2 | 79,2 | 46,3 |
| Ireland | | | | | | |
| Drawn | - | 20,7 | 12,0 | 18,1 | 50,8 | 32,5 |
| Committed | - | 22,5 | 17,7 | 22,5 | 62,7 | 40,1 |
| Spain | | | | | | |
| Drawn | - | - | 0,0 | - | 0,0 | 0,0 |
| Committed | - | - | 100,0 | - | 100,0 | 9,3 |
| Total | | | | | | |
| Drawn | 73,0 | 40,8 | 103,3 | 39,2 | 183,3 | 1,9 |
| Committed | 73,0 | 48,5 | 288,3 | 69,5 | 406,3 | 4,3 |
| Total potential | 73 | 60 | 700 | ca. 250 ²⁾ | ca. 1083 | ca 11.5 |

Source: Own calculations

¹⁾ % of 2011 national GDP / % of 2011 euro area 17 GDP for "Total"

²⁾ IMF commitment in May 2010

Table 16: Net foreign assets position of selected euro area countries

| | 1999 | 2007 | 2010 |
|------------------|-------|-------|--------|
| Euro area | - | -11,5 | -7,6 |
| Germany | 4,5 | 26,5 | 38,4 |
| France | 0,7 | -1,5 | -10,0 |
| Italy | -5,0 | -24,5 | -24,0 |
| Spain | -32,1 | -78,1 | -89,5 |
| Greece | -31,2 | -96,3 | -92,5 |
| Ireland | 50,0 | -19,4 | -90,9 |
| Portugal | -31,9 | -88,9 | -107,5 |
| Slovenia | -9,5 | -21,3 | -35,7 |
| Cyprus | - | 11,7 | -43,4 |

Source: Ameco

9. Public insurance: implications for debt and sustainability

All in all, there are four types of commitments that absorb (and potentially overstretch) the public insurance capacity of countries: social insurance, demand support, sectoral and international insurance.

How do we measure whether “public insurance” (in this broad sense) is sustainable? The first, most visible, indicator is public debt. The public debt situation is very grave in much of the industrialised world (see Table 17). However, it is important to remember that very high public debt ratios are by no means a new phenomenon. Spain and Australia already reported public debt of above 100% of GDP in around 1870 and several countries were left with such high debt levels after World War I. After World War II, the average G7 country debt was 100% of GDP and the debt of the UK and the Netherlands even exceeded 200% of GDP. Public debt, however, declined significantly to an average of around 40% of GDP until the 1960s. High post-war growth and a decline in government spending obligations with the end of the war facilitated the generation of surpluses and rapid debt reduction.

Since the 1970s, most industrialised countries have experienced renewed dramatic increases in their public indebtedness. By 1999, public debt in the euro area had reached 70% of GDP and slightly more in the G7. Belgium, Greece, Italy and Japan all reported debt levels of over 100% of GDP. Over the course of the financial crisis, between 2007 and 2013 (projection), public debt exploded like never before in peace times. The euro area’s average debt is expected to reach 95% of GDP in 2013, and the G7 average will be even higher at around 120%. Only 7 of the 22

sample countries used are expected to report debt of below 60% of GDP in 2013, while that of 9 will be close to or above 100%. All of these 9 countries are ones with very strong expenditure dynamics in the social sphere.

Secondly, there are significant additional public insurance liabilities that are likely to burden public budgets in the near to distant future. Implicit liabilities from the future costs of population aging are very significant in many countries, and their net present value often exceeds GDP (see Table 7 above). Thirdly, private sector indebtedness is very high in many advanced economies. This bears the prospect of significant further losses and write-downs in the financial sector which may burden the public budget. Table 18 indicates that private sector debt increased significantly in the four main advanced economies between 1980 and 2011. If public and private debt are taken together, there was a roughly 50% increase in economic leverage from about 170-270% of GDP to 255-430% of GDP over the past three decades in these economies. We do not know how much public and private debt is sustainable but the absolute numbers and dynamics are truly remarkable.

Fourthly, international rescue frameworks under the IMF and the EFSF/ESM constitute significant contingent liabilities for government. So far, they remain contained but they could become a sustainability risk for government, especially if they grow significantly further. Recent sustainability analysis has looked at the combined effect of government debt levels and the future costs of social security on the sustainability of public finances. A number of countries are found to be at high or very high risk (European Commission, 2012; Stiftung Marktwirtschaft, 2012). It should be noted, however, that contingent liabilities from the financial sector and the international sphere should also be integrated into the sustainability analysis and, so far, this has not yet been undertaken anywhere.

The ultimate cross-border insurance and risk amplifier appears to be Eurobonds. In fact, it has been argued that European cross-border liabilities could be called a form of “soft Eurobond”. These already amount to over EUR 2 trillion or more than 20% of euro area GDP when including the ca. EUR 1.3 trillion of potential central bank liabilities from non-standard measures (see next section). If all euro area public debt (95% of the currency area’s GDP in 2013) were to be financed via Eurobonds in the stricter sense of joint-and-several liability for government bonds, this would represent EUR 9 trillion – almost four times German GDP. But this is not all: the sustainability analysis would also have to include the additional debt accumulation arising from moral hazard that, in turn, would result in less fiscal discipline and a greater extent of private debt socialisation. Hence, the conclusion that Eurobonds would help stabilise

expectations about the sustainability of public insurance is flawed. This can – at best – hold in the short run when myopic agents have not yet realised the incipient risks and disincentives. It is probably not an exaggeration to claim that Eurobonds would be a sure recipe for overburdening euro area Member States and the area as a whole.

Table 17: Gross General Government Debt

| %GDP | About 1870 | About 1913 | About 1920 | About 1937 | About 1945 | 1960 | 1980 | 1999 | 2007 | 2009 | 2011 | 2013 |
|---|---------------|---------------|---------------|---------------|---------------|-------|-------|-------|-------|-------|-------|-------|
| Euro area | | | | | | | | | | | | |
| Austria | 69,6 | 63,3 | 24,1 | 35,6 | 35,2 | 17,7 | 34,0 | 66,8 | 60,2 | 69,2 | 72,4 | 75,9 |
| Belgium | 32,1 | 43,5 | 128,5 | 67,8 | 131,2 | 69,4 | 74,3 | 113,6 | 84,0 | 95,7 | 97,8 | 100,5 |
| Finland | .. | 10,9 | 14,1 | 9,7 | 58,6 | 5,1 | 10,8 | 45,7 | 35,2 | 43,5 | 49,0 | 54,7 |
| France | 95,6 | 66,3 | 169,6 | .. | 44,3 | 28,5 | 20,7 | 58,9 | 64,2 | 79,2 | 86,0 | 92,7 |
| Germany* | 25,4 | 38,5 | 4,2 | 19,3 | 17,8 | 18,4 | 31,3 | 61,3 | 65,2 | 74,5 | 80,5 | 80,8 |
| Greece | 73,8 | 64,7 | 80,4 | 73,0 | 23,6 | 11,6 | 22,6 | 94,9 | 107,2 | 129,7 | 170,6 | 188,4 |
| Ireland | .. | .. | 14,9 | 31,3 | 27,1 | 44,9 | 154,3 | 47,0 | 25,0 | 64,9 | 106,4 | 122,5 |
| Italy | 91,6 | 77,2 | 159,7 | 72,1 | 72,4 | 31,4 | 56,1 | 113,0 | 103,3 | 116,4 | 120,7 | 127,6 |
| Portugal | 87,0 | 64,1 | 62,0 | 120,9 | 223,0 | 66,7 | 44,6 | 61,1 | 45,3 | 60,8 | 65,5 | 69,3 |
| Portugal | 62,6 | 49,2 | 45,0 | 29,4 | 24,6 | 16,4 | 29,6 | 51,4 | 68,4 | 83,2 | 108,1 | 123,5 |
| Spain | 161,7 | 76,7 | 37,9 | 61,5 | 22,4 | 20,5 | 17,2 | 62,4 | 36,3 | 53,9 | 69,3 | 92,7 |
| Other EU | | | | | | | | | | | | |
| Denmark | 24,2 | 15,6 | 12,5 | 17,9 | 10,6 | 20,1 | 27,1 | 58,1 | 27,1 | 40,6 | 46,6 | 44,7 |
| Sweden | 12,7 | 15,3 | 12,1 | 20,1 | 41,6 | 25,4 | 46,9 | 64,3 | 40,2 | 42,6 | 38,4 | 36,2 |
| UK | 77,4 | 27,9 | 137,8 | 158,7 | 234,7 | 117,9 | 46,2 | 43,6 | 44,2 | 67,8 | 85,0 | 93,2 |
| Other advanced economies | | | | | | | | | | | | |
| Australia | 120,1 | 120,1 | 61,2 | 74,3 | 89,7 | 31,5 | 21,3 | 22,5 | 9,7 | 16,9 | 24,2 | 27,2 |
| Canada | 29,0 | 20,7 | 58,4 | 87,9 | 155,5 | 66,1 | 45,6 | 91,4 | 66,5 | 83,3 | 85,4 | 87,8 |
| Japan | 10,3 | 53,6 | 25,6 | 57,0 | 56,0 | 8,0 | 52,8 | 131,9 | 183,0 | 210,2 | 233,2 | 249,5 |
| Korea | .. | .. | .. | .. | .. | 13,7 | 17,0 | 17,6 | 30,7 | 33,8 | 34,2 | 31,6 |
| New Zealand | 45,8 | 112,0 | 132,7 | 148,0 | 147,2 | 68,0 | 52,3 | 35,8 | 17,3 | 26,2 | 38,2 | 38,1 |
| Singapore | .. | .. | .. | .. | .. | 15,7 | 72,3 | 87,4 | 87,5 | 108,0 | 108,3 | 103,4 |
| Switzerland | .. | 2,7 | 28,9 | 30,5 | 78,9 | 16,2 | 43,9 | 60,1 | 55,6 | 51,8 | 46,6 | 45,6 |
| US | 29,9 | 3,2 | 27,9 | 39,6 | 116,0 | 54,3 | 42,3 | 61,2 | 67,5 | 90,1 | 103,5 | 112,3 |
| Averages | | | | | | | | | | | | |
| Unweighted average (excl. Sgp. + Kor.) | 61,7 | 48,7 | 61,9 | 60,8 | 80,5 | 36,9 | 43,7 | 67,2 | 60,3 | 75,0 | 86,4 | 93,2 |
| Euro area 12~ | 77,7 | 55,5 | 67,3 | 52,0 | 61,8 | 30,1 | 45,0 | 72,0 | 66,9 | 80,6 | 88,8 | 95,2 |
| G 7 | 51,3 | 41,1 | 83,3 | 72,5 | 99,5 | 46,4 | 42,1 | 80,2 | 84,9 | 103,1 | 113,5 | 120,6 |

Sources: IMF, Historic Public Debt Database, WEO, AMECO

~ before 1999: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain

*=until 1990 only West Germany

Table 18: Public and private debt

| | Debt ratios (% of GDP) | | | | | | |
|-----------|------------------------|----------------------|-------|---------------------|------------|-------------|-------|
| | 1980 (%) | | | 2011 (%) | | | |
| | Public ¹ | Private ² | Total | Public ¹ | Households | Enterprises | Total |
| USA | 42 | 147 | 189 | 103 | 92 | 107 | 302 |
| Japan | 49 | 230 | 279 | 206 | 77 | 153 | 436 |
| UK | 48 | 120 | 168 | 98 | 107 | 113 | 318 |
| Euro Area | 78 | 117 | 195 | 95 | 63 | 97 | 255 |

Sources: OECD Economic Outlook 91 (2012); OECD WP3 (2012), *Deleveraging, Challenges, Progress and Policies*; own calculations

¹ General government debt to GDP

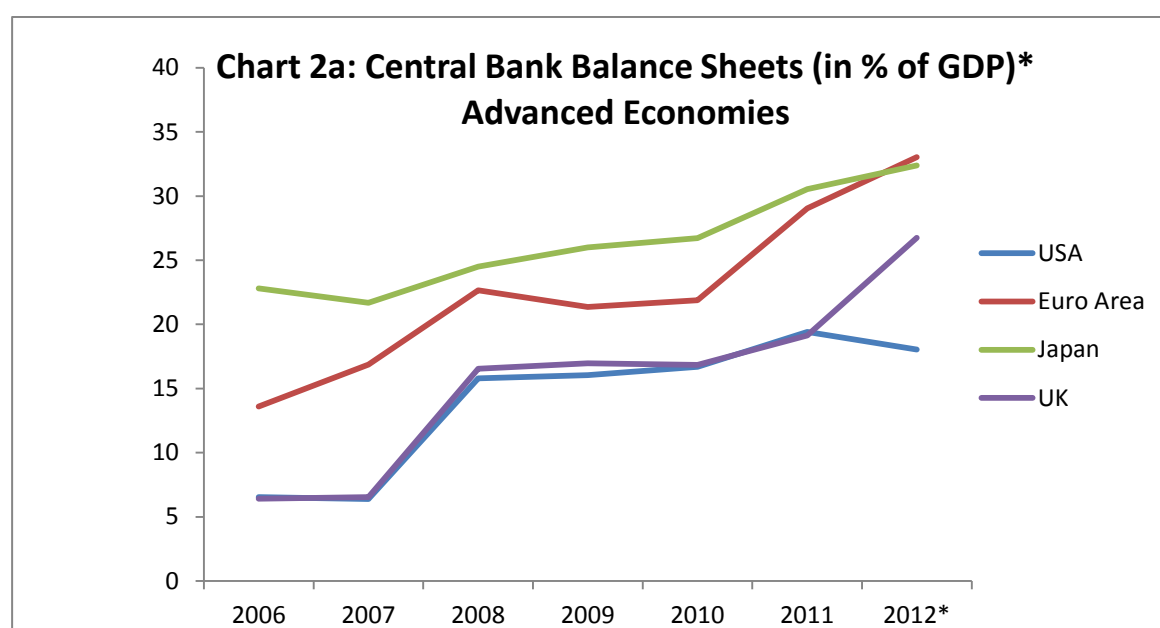
² Households and enterprises

10. Central banks as insurers of last resort

When the government is overburdened with providing promised (or expected) public insurance (and outright default is to be avoided), public insurance can be offered via the balance sheet of central banks. Historically, examples of this are abundant and the most dramatic episodes, such as that of Germany in the early 1920s, have occurred after wars. Central bank support of public insurance, however, can take several forms: e.g. supporting a better liquidity environment in public debt markets, facilitating the use of public liabilities in central bank repos or directly acquiring public sector debt. However, this insurance role of central banks is not risk-free, even if there are no immediate financial transfers, as such transactions expose the central bank to the risk of non- or partial repayment. Also, its reputation and independence may suffer, as the public and the markets may not perceive that the central bank is fully free to exit from such measures whenever it wishes (given the financial and economic risks involved).

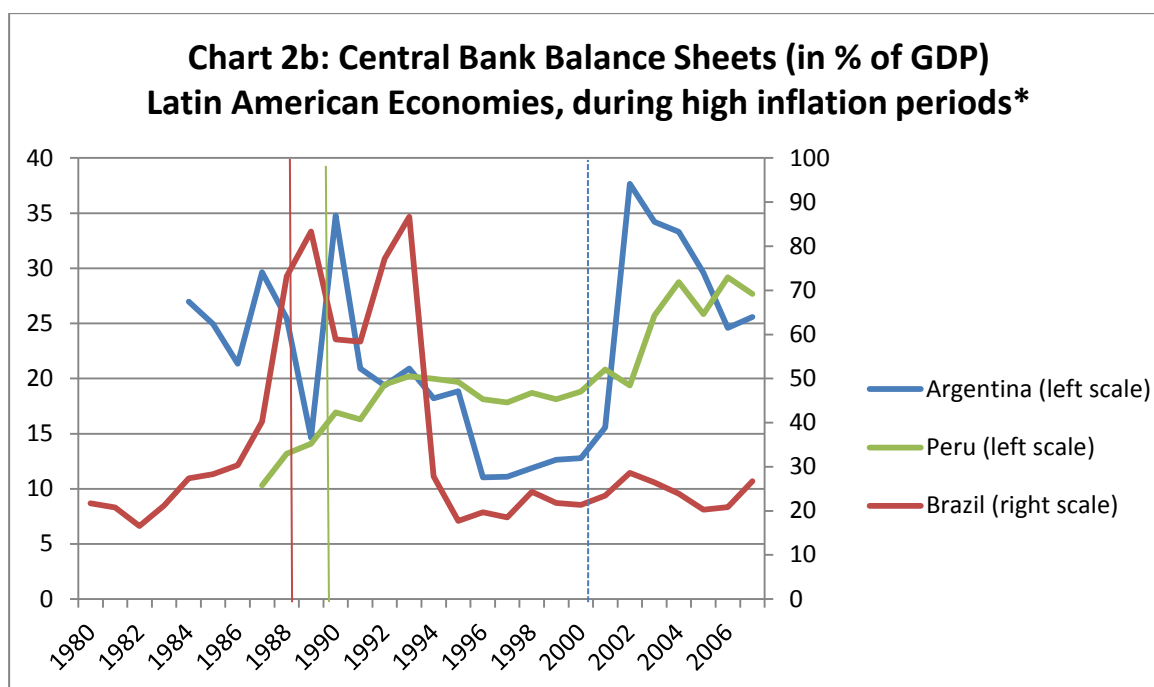
Direct government support (without an exclusive monetary policy objective) has been provided by the Federal Reserve in the US, the Bank of Japan and the Bank of England. This approach was also used by many central banks around the globe, notably before the advent of independent central banking in the early 1980s. In many countries, central banks were not successful in limiting such obligations and were forced to monetise them. Strong upward dynamics in price levels, economic destabilisation and even hyperinflation were the end results. It must not be forgotten that, the public insurance role of central banks – or the “lender of last resort” function, as it is more kindly called – is only credible when the fiscal position of government ultimately remains sustainable. Otherwise, “fiscal dominance” of monetary policies is unavoidable and independent central banking impossible.

When looking at the central bank balance sheets of the major industrialised economies, it is striking that their size has increased enormously since the start of the financial crisis in 2007 (see Chart 2a). The central banks of Japan, the euro area and the UK reported assets of about 30% of GDP in the autumn of 2012, and the US of around 20% of GDP (see Table 19). In the euro area, about EUR 1 trillion is due to long-term refinancing operations for the financial system. Other non-standard measures amount to about EUR 300 billion. A new programme allowing for government debt purchases (Outright Monetary Transactions or OMTs) has been established but, at the time of writing, has not been used. In the US, purchases of mortgage debt have reached over 5% of GDP. Government debt holdings have exceeded 10% of GDP at the US Federal Reserve and 20% of GDP at the Bank of England and the Bank of Japan. In December 2012, the Federal Reserve announced another significant government debt purchase programme of an annual magnitude of nearly 4% of GDP. In early 2013, the Bank of Japan followed suit with a further government bond purchase programme.



* Central bank assets as of October 2012, estimated 2012 GDP (October 2012 WEO, IMF)

Sources: European Central Bank, Federal Reserve, Bank of Japan, Bank of England, IMF, own calculations



* Vertical lines mark the beginning of hyperinflation periods in the respective countries, the dashed line marks the beginning of the 2001/2 Argentine crisis

Sources: IMF, Banco Central de la República Argentina, Banco Central do Brasil, Banco Central de Reserva del Perú, own calculations

Table 19: Composition of central bank balance sheets

| | Nov. 2012 (% of GDP) | | | |
|----------------------|----------------------|------|-------|-----------|
| | US | UK | Japan | Euro Area |
| Total | 18,0 | 26,7 | 32,4 | 33,0 |
| Thereof: | | | | |
| Government bonds | 11,0 | 25* | 22,7 | 6,7** |
| Private bonds | 5,4 | | 1,6 | |
| Liquidity operations | 0,1 | 0,8 | 6,9 | 12,6 |

Sources: European Central Bank, Federal Reserve, Bank of Japan, Bank of England, IMF, own calculations

*In line with the Monetary Policy Committee decision of 5 July 2012 related to the asset purchase programme, the Asset Purchase Facility (APF) was authorised to purchase £375 billion of high-quality assets. In October 2012, around 99% of the assets purchased under this programme were gilts, and less than 1% were comprised of corporate bonds.

**Outstanding amount of the SM Programme equivalent to 2.2% of GDP; outstanding amount of the CBP Programme equivalent to 0.7% of GDP

The potential central bank losses that are usually quoted in Europe refer to ECB investments in government paper, private paper and in liquidity provision to banks (particularly where the collateral quality is questionable). These figures amount to somewhat above EUR 200 billion, below EUR 100 billion and about EUR 1 trillion respectively. In total, this amounts to up to about 13% of euro area GDP. Risks, however, are not distributed evenly over the national central

banks of the Eurosystem (as losses would have to be distributed according to the ECB's capital key). The TARGET2 liabilities of national central banks towards the Eurosystem have received particular attention in this context (see Sinn and Wollmershäuser, 2012). These are closely linked to the ECB's long-term liquidity provision, as central bank claims have largely replaced bank claims with regard to crisis countries. The TARGET2 liabilities of Greece, Portugal, Ireland, Spain and Italy to the Eurosystem amounted to well over EUR 800 billion at the end of 2012. These subsequently came down in early 2013.

Having said all this, however, central bank losses are not a serious risk as long as the solvency of governments remains credible so that there remains a prospect for normalising monetary policies. It is positive that central banks continue to have a significant extent of institutional independence that allows them to exert pressure on governments to rectify their policies and regain sustainability. Moreover, the policy reform process in crisis countries and the continuing political integration in Europe bodes well for a return to fiscal and monetary orthodoxy. From the 1970s to 1990s, central banks in Latin America often had similar or even smaller balance sheets when their countries were suffering from instability and inflation (see Chart 2b). But they completely lacked independence and thus governments had little incentive to contain public obligations. Nevertheless, for advanced economies, this experience should be a warning shot. Nobody knows at which threshold markets and the public lose confidence in the reversibility of a central bank's balance sheet expansion and its ability to maintain price stability. And, as the crisis has shown, confidence can be lost very rapidly, with strongly non-linear effects on expectations, markets and prices.

11. Distributional implications

Before turning to policy implications, the distributional effects of public insurance deserve some attention. These are very complicated and partly not what one would expect.

Public social insurance probably benefits disproportionately people with low incomes. But since the financing also has to come largely from the recipients of benefits, there is a lot of fiscal churning. The OECD (1995) has shown that, in some countries, a larger share of the benefits has been going to the middle classes and the rich than to the lower income segments.

The distributional effects of subsidies and enterprise rescue schemes are unclear, but probably regressive. Subsidies benefit most strongly the owners of the capital in subsidised sectors. But they also benefit the workers who would otherwise lose their jobs.

Automatic stabilisers (as aggregate demand insurance) are likely to benefit lower incomes more than the rich, as it is public sector salaries and social welfare benefits that stabilise demand. The rich also benefit by paying lower income taxes on falling incomes. By contrast, the distributional effects of fiscal activism are very much dependent on the particular scheme involved. Tax reductions benefit higher incomes disproportionately via lower income tax rates, but they also benefit the less well-off if such reductions consist of tax rebates per household or if they concern a value added tax (VAT) on food. Poorly targeted spending programmes, especially if these are delayed (and thus pro-cyclical) and in an already fully employed sector, are not likely to benefit those threatened by unemployment very much.

The distributional case for financial sector insurance is much harder to make. If governments support the financial sector, who benefits? Unless all financing – capital, subordinate capital, junior and senior bonds, and even large depositors – is “bailed in” before public money comes in, government support is pro-rich. It is ultimately large fortunes and the financial industry – the capitalists – that are protected, while the regular tax payer – mainly labour – is the one who has to pay for the public support-related debt. Therefore, it is the financial industry and the owners of the large fortunes behind it who appear to be the greatest winners from (and lobbyists for) public support and Eurobonds, and who tend to be against private sector cost-sharing or a “bail-in”.

International insurance brings this dilemma to yet another dimension. It is the international financial industry and people with sizeable financial assets who have the most to gain from seeking someone from abroad to foot the bill once domestic sources (meaning governments) cannot do this. Hence, putting it bluntly, “workers”/tax payers in solvent countries tend to bail out “capitalists” in crisis countries and across the globe.

It is probably unnecessary to dwell for long on the distributional implications of central bank support. If such support can be reversed, the loss for taxpayers is limited. The case is much more extreme when excessive insurance implies the loss of monetary control because fiscal authorities overburden central bank balance sheets. If this “tail risk” materialises, it will mainly be the money-holding classes that cannot hedge or exit and who will thus pay. And, in relative terms, this is likely to be more so the middle and lower classes than the rich.

12. Conclusion: towards sustainable public insurance

In conclusion, the scope and costs of public insurance have expanded enormously over the past one and a half centuries. Social insurance has been the main driver of growing public expenditure and public debt, particularly since the 1960s. Population aging has created huge implicit liabilities for the future. Insurance of aggregate demand and fiscal activism have also contributed to a ratcheting up of public spending. More recently, insurance of the financial sector and across borders has been on a steep upward path. The compound effect of these liabilities on sustainability is unmeasured and untested.

How does one know whether public insurance has gone too far? One can find out, as the European crisis countries did between 2009 and 2011, that, as one gets to the limits of what can be financed, the macro insurance role of government breaks down first. The European crisis countries were required to adopt adjustment policies to avert bankruptcy. The social insurance role of government had to be curtailed, and they had to appeal for international insurance. Fortunately, there were still countries solvent enough to provide such insurance. Looking forward, the figures on public liabilities (most of these for some form of insurance) suggest that the solvency (and with it the macroeconomic stability) of much of the Western world is at risk in the coming years – unless there are significant policy changes.

The relevant policy lessons and recommendations to avoid a “tragedy of the commons” via unaffordable public insurance can be summarised along three lines: 1) create transparency; 2) change the rules of the game to limit public insurance; and 3) within these rules, improve public insurance-related policies, including incentives via better risk-sharing and “bail-in”.

As regards the measurement of public insurance-related visible and invisible (contingent) liabilities, much progress has been made in recent years on account of social insurance. However, as regards financial sector-related liabilities, the picture is very unclear and dependent on the policies chosen. A clearer, more transparent, accounting and measurement of all public insurance-related liabilities is clearly warranted.

When it comes to policies for constraining public insurance, it is key to look at this issue from an institutional “rules of the game” perspective. Most economists (encouraged by politicians) try to equate the benefits and costs of policy decisions at the margin without reference to the longer time horizon and the legal institutional context. By contrast, a rules-based approach contains public insurance from the outset via limiting public sector usurpation of private activities, via

institutional limits on public deficits, and via rules that prohibit monetary financing. In this way, fewer resources are spent on transfer-seeking and insurance abuse and more on productive activity. Very successful reform cases include New Zealand, the UK and Chile in the 1980s, as well as Ireland, Sweden, Finland, former GDR/East Germany, and several Latin American and Asian countries in the 1990s (Tanzi and Schuknecht, 2000; Hauptmeier et al., 2007; Hoekstra et al. 2012).

At the policy level, successful reform countries have been reducing public expenditure, and thus reducing public insurance (Alesina and Ardagna, 2012; Hauptmeier, et al. 2012). This requires, in particular, limiting commitments for social security. Excessive benefits for current recipients, incentives for early retirement, non-sanctioning of unhealthy life styles or of insufficient human capital investment need to be rolled back. Sharing into the costs of health care (e.g. via deductibles) or rewarding child-raising via lower insurance premia e.g. under long-term care insurance would improve incentives and, thus, lower the costs of social insurance systems. Shrinking large public sectors could also be warranted so as to lower public spending. The countries mentioned above all undertook major expenditure reforms to roll back public spending and the insurance role of government.

Moreover, sectoral insurance needs to be well-contained, particularly in respect of the financial sector. Capital requirements, resolution regimes, the regulation of derivatives trading and shadow banking are all necessary to reduce moral hazard in financial institutions and the “too-big-to-fail” problem in the industry. Tax regimes that discourage excessive private debt are also important. An appropriate bail-in of the private sector to cover losses of financial institutions is essential to reduce moral hazard and the broader government solvency risks from debt overhangs and financial sector problems. The reforms of the Swedish and Finnish banking systems after their banking crisis in the early 1990s were quite far-reaching in this regard and are often quoted as “good examples”.

A difficult challenge is the demand stabilisation role of government, given pressure on politicians’ to “act” and economists’ pre-occupation with macroeconomic fine-tuning. The crisis has retaught some well-known lessons from the 1970s: fiscal fine-tuning is typically too late, poorly targeted and difficult to reverse. Hence, it should probably be “prohibited”. However, in practice, such a “prohibition” can hardly be operationalised, so that the best indirect control is perhaps via balanced budget rules that only allow for a limited deviation of deficits within the bounds of automatic stabilisers, such as those stated in the European “fiscal compact”.

Finally, there also have to be strict limits on cross-border insurance – to protect both the insurer and the insured from financial follies. International support has to be linked to strong adjustment programmes with credible conditionality for the government and the financial sector, i.e. as related to public policy reform and a private bail-in. Risks should not simply be passed to the international level and the national government should remain liable for (fiscal and quasi-fiscal) debt that is directly or at least strongly affected by its policy jurisdiction (including banks). IMF and EU Commission programmes have been broadly following these principles. Collective action clauses and an insolvency regime spelling out the rights and obligations of debtors and creditors could reduce the incentive to “overuse” international solidarity and the risk of a disorderly country default.

Finally, even in crisis times, the rule of law that safeguards freedom and stipulates responsibility for one’s actions needs to be respected. And the principles of “living within one’s means” and of “sound money” should be dealt with prudently and not be suspended lightly. All this will reduce the risk of overextending government insurance and central bank balance sheets and, thus, the materialisation of public insurance related “tragedies of the commons”.

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