

THE INTERGENERATIONAL ACCOUNTING PROJECT AND THE MYTH OF A LOOMING FISCAL CRISIS

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From the late 1980s on, many western governments 'discovered' that they will face a major fiscal crisis by the middle decades of this century. They have drawn this conclusion based on forecasts of demographic change, economic growth and public sector deficit dynamics. At least twenty seven countries are now engaging in what is called variously 'generational accounting', or 'intergenerational accounting'. This is a method of national accounting developed by Auerbach, Gokhale and Kotlikoff (1991), which attempts to measure the redistribution of lifetime tax burdens across generations. This analytic framework goes beyond normal government budgeting approaches by trying to take account of projected life-time taxes for a given generation, net of transfers like pensions or benefits.

Most of these exercises in generational accounting have been framed by an explicit concern with long-term fiscal sustainability (Ablett 1996; Ablett 1998; Larch & Noguei- Gokhale 2009; Ballassone *et. al.* 2009). The predictions about looming fiscal crisis rely on the proposition that the demographic structure of most developed societies is changing because of an unprecedented increase in both the numbers and proportion of elderly people. Ballassone *et. al.* (2009: 8), epitomise this consensus by claiming that overall future 'ageing populations [are] projected to lead to increases in public spending in most member states by 2050 on the basis of current policies ...'. Some governments have concluded that long-term fiscal sustainability needs to be defined as *the* policy problem (Bonin 2001). Williamson *et. al.* (2003: 3-14) claim that these public policy exercises constitute an issue of 'generational equity'. By this is meant an anxiety that future generations will face a greater tax burden and/or a greater level of public debt than does the current generation.

As writers working in different intellectual traditions like Schon (1984) and Bacchi (2009) have argued, how solutions to a policy problem are generated depend on how the policy problems are represented in the first place. In the spirit of continuing a tradition of critical economics (Stanford 2009), we need to ask several questions. Is the prediction that we face a future crisis of fiscal imbalance well founded? Does the way that generational accounting has been developed to date offer a defensible way of thinking about fiscal policy? Or does the use of generational accounting rely on ‘constructive schemes’ (Danziger 1994: 3-4) that are open to serious challenge.

By ‘constructive schemes’ (Bohme, 1975; Danziger 1991) I mean two characteristics of the work of economists, as well as all other social and natural scientists. First, constructive schemes are the cognitive frames deployed in the selection and interpretation of empirical data (e.g. Klammer & Leonard 1994; Lakoff 2002). Second, constructive schemes include the practical rules for the production of that data, the development and use of various analytic techniques and so forth. Here we need the help of two additional ideas – ‘paradigms’ and *themata*. Economics has a history of intellectual practices in which both ‘theory’ and data are constructed according to various paradigmatically explicit schemes as well as less explicit *themata* (Holton 1984). If we can write the history of economics as a set of successive or overlapping paradigms like ‘classicism’, ‘neo-classicism’, ‘Keynesianism’ and so forth, *themata* refer to more persistent preconceptions about problems, methods and the stuff of reality. Paradigm hierarchies are one of the more obvious ways we can discern the priorities of a discipline. *Themata* are those more persistent, tacit and deep preconceptions relied on by members of an intellectual community over very long periods of time that sit below the more obvious ‘paradigms’. Among the persistent *themata* in economics that matter are ideas that an analogy between state budgets and household finances is just ‘common sense’ and that budget deficits are a bad thing.

Here I engage two disparate literatures, the literature of generational accounting and an emerging ‘monetary macro-economic’ paradigm (e.g. Wray 1993; 1998; Cencini, 2001; Fulwiller 2006). In this sense I add to the earlier work of Mitchell and Mosler (2003; 2005) who have drawn on ‘monetary macro-economics’ to develop an alternative approach to several major public policy issues. However this article does more than juxtapose two paradigms. It suggests that to be credible a paradigm

needs to depend on warrantable assumptions or to rely on metaphors that are illuminating rather than misleading.

The article begins by summarizing the core features of the generational accounting framework. It then briefly outlines some of the propositions advanced by those promoting a monetary macroeconomic framework. It asks: what do those who work from this framework have to say about the *thematic claim* that debt/deficits are a basic problem, a preconception that informs the use of the intertemporal budget constraint?

Generational Accounting

Beginning in the 1970s and 1980s, a new macroeconomic orthodoxy emerged (Harvey 2005; Mirowski & Plehwe 2009). By the late 1980s the policy expression of this orthodoxy, often referred to as the Washington Consensus emphasized controlling inflation through strict monetary policy, budget surpluses, and increased market liberalization and privatization as the means to ensure growth (Williamson 1997; Sharpe & Watts 2010). This macroeconomic orthodoxy has sponsored an obsessive concern with budget deficits. The European Union, for example, has warned member states to avoid ‘profligacy’, high budget deficits and mounting debt (European Parliament 2006), even as it built in non-discretionary rules about budget deficits in its Stability and Growth Pact and in Article 104 of the Maastricht Treaty. Generational accounting is just one of the contemporary expressions of this new macroeconomic orthodoxy. There are several basic features of this approach.

First, generational accounting involves calculating the present value of total *net tax payments* over the remaining lifetime of a cohort born in a specific year (where *net tax payments* are defined as taxes paid minus transfers received). This present value of net tax payments is labeled the ‘generational account’. The intergenerational distribution of the net tax burden is analyzed by comparing the generational accounts of different age or generational cohorts of the population. Most typically this is done by comparing the generational account of a newborn in the base year with future generations – most typically those born just one year after the base year.

Second, generational accounting has involved establishing an empirical measure of two key linked concepts, the ‘generational account’ and the ‘inter-temporal budget constraint’.

Technically, generational accounting begins by selecting a given base year (say 2000) and calculating the 'generational accounts' of all generations before proceeding to work out the 'inter-temporal budget constraint'. For that base year, the 'generational account' is first calculated. The generational account is the present value for an age cohort of the net tax it pays over its whole life, i.e., its 'tax burden'. This typically involves 'discounting', using an annual rate of discount. In effect, generational accounts report the present value of the rest of life net taxes paid to the intergenerational government budget for each generation alive. 'Generational accounts' can also be calculated for an unborn age cohort, say those who will be born in 2030, by making the relevant base year its year of birth. Generational accounting involves calculating the present value of net tax payments and presenting this in a present value and a rest-of-life calculation for every cohort of people presently alive and/or born in the future¹.

Given that the point of the exercise is to establish whether the ratio of current and future taxes is adequate to finance current and future liabilities on things like social expenditures, those who have developed the generational accounting framework have insisted that the critical question is whether the sum of all generational accounts is the same as the 'inter-temporal budget constraint' – i.e., the present value of government consumption expenditures minus the net government wealth assets minus liabilities. Much hangs on the thematic content of the 'intertemporal budget constraint'. On the basis of this idea, (based on the microeconomic idea of the 'budget constraint'), orthodox economists engaging in generational accounting claim to be able to assign an inter-temporal government deficit (or surplus) to all future-born generations, thereby determining their 'generational account'. They do so by assuming no change in current tax/expenditure patterns.

1 The standard approach to generational accounting can be represented in a more formal way thus:
 $PVG_t = NWG_t + PVL_t + PVF_t$. where
PVG_t = present value of prospective purchases of goods and services
NWG_t = net wealth of the government
PVL_t = present value of future aggregate net tax payments by generations living at time t
PVF_t = present value of future aggregate tax payments by future generations born after time t (Gallagher: 2006)

Generational accounting calculates the 'residual' required to balance the government's intertemporal budget constraint. This entails adding-up all current and future generations' net payments, which in most European states with substantial social security obligations are typically negative, and subtracting (adding) the explicit net debt (wealth). This enables a calculation of the 'fiscal gap' with respect to those demands on future budgets that would ensure sustainable fiscal policy. This allows for a reasonable estimate of what is claimed as the 'true' government debt or wealth for the base year. It is claimed to make explicit those government liabilities not included in the standard annual budget papers published by governments. (These liabilities may include entitlements to pension benefits that young people get in a pay-as-you-go system by paying their contribution to state insurance schemes). The overall true inter-temporal debt is assumed to be financed by the net tax payments of all future generations. In reality how this burden will be actually distributed is, of course, unknown because it will depend on unknowable future policies. If possible, as Raffellhuschen (1999: 168) explains, this can be calculated to take account of factors like age and gender over the remaining lifetimes of representative individuals with the help of relevant micro-data. To make this exercise possible, European generational accounting treats all non-age specific government (consumption) expenditures as if they are distributed uniformly over the life-cycle, while government consumption is allocated equally to all generations, thus reducing their net tax burden.

Proponents argue that generational accounting is better than relying on annual budget accounts because the traditional budget accounting preoccupation with cash-flow deficits and the size of surpluses/deficits overlooks things like future liabilities of retirement-based social security schemes, rendering them 'unreliable as indicators of fiscal sustainability' (Raffellhuschen 2002:75). Raffellhuschen (2002: 76) makes this point colourfully:

... there are no free lunches, ... expenditures in the future have to be paid for either by present or future generations. In short, [generational accounting] takes a long-term view of budget making and reporting.

The value of generational accounting rests on its apparent ability to quantify the scale of the burden passed from current to future generations based on the assumption that contemporary fiscal policy settings do not

alter radically. It is therefore possible to provide assessments of current intergenerational ratios of expenditure and revenue effects for existing age cohorts, as well as to construct future hypothetical assessments of the relative ratio of burdens borne versus benefits received by existing or future age cohorts. This is said to reveal serious degrees of unfairness in the present as well as point to possible patterns of unfairness in the future, subject to the severe *caveat* about all such forecasts.

Finally, the policy import of this is simple but powerful: in most cases future generations will face a fiscal deficit that will be both unfair and overwhelming. In typical fashion Kotlikoff and Raffelhuschen (1999:165) noted that:

... the findings reported here are shocking. An array of countries including the United States, Germany and Japan have severe generational imbalances ... The imbalances in these, and the majority of the other 19 countries considered here, place future generations at grave risk.

Kotlikoff and Burns (2004: xvii) likewise argued that the fiscally imbalanced path is the road to ruin:

History is replete with examples of what happens when countries can't pay their bills. They raise taxes to exorbitant levels, default on their explicit or implicit obligations, and begin printing money like mad. This triggers inflation, drives interest rates through the roof, and sends exchange rates down the tubes. Businesses go belly up, and banks shut their doors. The result is financial and economic meltdown.

In effect the problem 'revealed' by generational accounting is that future generations face unacceptable levels of debt and deficit financing. Gokhale suggested in 2007 that:

... using projections from the Budget of the US government for fiscal year 2005 (with t = fiscal year 2004), applying a five per cent discount rate, and calculating US dollar amounts in constant 2004 dollars, $PVGt$ is estimated to be \$US26.8 trillion; NWt equals \uparrow \$US4.4 trillion; and $PVLT$ equals 4.9 trillion. That leaves future generations to collectively pay \$US26.3 trillion (Gokhale 2007:3)

By 2011 Gokhale's estimate of future debt had risen to \$US51trillion (Bloom 2011).

It is not difficult to see how this kind of analysis sustains the policy proposition that 'balanced' or preferably 'surplus budgets', especially if they are put in place now, are a 'good thing' and will prevent future 'generational imbalances'. Auerbach *et. al.* (1999: 32) have argued that the looming fiscal crisis of the 2040's can only be dealt with now by forcing those alive to pay higher taxes or by cutting social transfer payments. The practical implications of this are well illustrated when Auerbach *et. al.* (1999) pointed out that countries like Italy, Japan, Brazil and the US would need to cut current government expenditures by between one half (Italy) and one fifth (US) to restore the projected intergenerational balance.

How justified is the confidence reposed in generational accounting? The exponents of monetary macroeconomics make a strong case for saying 'not much'.

Thinking Thematically about the Inter-Temporal Government Budget Constraint

Monetary macroeconomics is perhaps best described as an emergent paradigm. Its contemporary exponents (e.g. Wray 1998; Mosler 1997-8; Cencini 2001) claim to offer a theoretically and empirically robust alternative to the macroeconomic orthodoxy. Monetary macroeconomists draw heavily on founding figures in the 'Original Institutionalist' tradition (e.g. Veblen 1899, 1904; Berle 1932; Commons 1934) as well as on a mix of mid-twentieth century Institutionalists (e.g. Dillard 1960, 1988; Galbraith 1958) and contemporary neo-Institutionalists like Coase (1998) and North (1995). In Australia exponents include Mitchell (2001; 2003; see also Mitchell & Mosler 2001; 2002) and Watts (Mitchell & Watts 2003; 2004)

In parallel with the 'credit money', 'state money' (or 'chartalist') and 'endogenous money' frameworks (Wray 2005, 2011), monetary macroeconomists emphasize both the social nature of money and its origins in, and functionality for, state regulatory practices. Monetary macroeconomists adopt a functional finance approach. As Forster (2001: 10-11) observes, a functional finance approach treats government

budgets and budget deficits or national debt as a *means* to economic well-being and not, as more orthodox economists do, as an *end*:

[The functional finance approach] does not assume any particular *a priori* relation between government expenditures and revenues or an *a priori* most desirable absolute or relative size of the national debt ... It does not say anything about what a budget should be prior to economic analysis.

Contrary to the widespread belief that government 'deficits' or public sector debt, however defined or measured, are bad, a view treated by orthodox macroeconomists as an infallible truth, monetary macroeconomists like Mitchell and Mosler (2003; 2005), Godley (2007), Fullwiler (2006) and Wray (1998; 2011) strongly reject this framing. As Wray (1999:13) puts it:

The functional finance approach concludes that there is no magic deficit-to-GDP ratio or debt-to-GDP ratio that ought to be maintained or avoided. It also demonstrates that there is no sense in which budget surpluses in one year can be 'locked away and saved' for spending in future years.

Monetary macroeconomists make several basic claims to arrive at that conclusion. First, they say that, in practice, governments face no operational or financial constraints, as orthodox macroeconomists insist they do. Fullwiler (2006: 15) notes that:

... *whenever* the government spends, money is created; *whenever* the government receives tax payment, money is destroyed since payor deposits and bank reserve accounts are both debited in the process.

Second, they argue that government deficits actually stimulate private sector savings. Equally, pursuing government surpluses is a contractionary policy because this is the same as promoting private sector deficits. This conclusion rests on a simple identity which holds that the government deficit (surplus) equals the non-government (residents plus non-residents) surplus (deficit) A simple example illustrates the identity. Suppose that there is an economy comprising just two people – one is the government and the other is the market. When the government spends \$100 and taxes the market \$100 there is a balanced government budget while the private accumulation of currency

(savings) is zero. The private budget is also balanced. In the next year if the government wants to spend \$120 but maintains tax at \$100 then the private sector has \$20 in savings and can accumulate that as financial assets. The government deficit is exactly the private savings of \$20. Equally if the government wanted to run a surplus it would spend \$80 and tax \$100 then the private sector would owe the government a net tax payment of \$20.

In short, monetary macroeconomists reject the conventional analytic framework based on the assumption that budget deficits or public sector debt either now or in the future are bad things. While the implications of this for contemporary fiscal policy are of the first importance, my focus here is on the way the generational accounting model has framed a problem of future fiscal crisis by drawing on long standing thematic ideas and deploying the idea of the ‘intertemporal budget constraint’.

The critical import of monetary macroeconomics begins with its rejection of a long-standing thematic preconception which implies that we can treat the ‘economy’ as if it were a household. The core concept of the ‘intertemporal budget constraint’ itself depends, as Todorova (2007: 1) puts it, thematically on:

... the state-household budget analogy, according to which, in much the same way a household goes bankrupt if its debt continuously exceeds its income flow, continuous government deficits are also unsustainable.

This thematic idea that the ‘economy’ is a household is embedded in the historical etymology of the word itself (Greek = *oikos* (‘house’) hence *oikonomia* or ‘managing the household’). As Todorova (2007:20) insists, the state-household deficit analogy themata:

... is not merely a rhetorical device and an example of fallacy of composition; it is a habit of thought. The analogy enters the process of valuation in policy analysis and formulation, and is engrained in common everyday ‘understandings’ of public finance and the relation between state and households.

Monetary macroeconomists do not accept that identity – a point of departure which leads to their revisionist account of money, debt and taxes. That account implies that the ‘intertemporal budget constraint’ does not make much sense. I draw on Wray (1999) for the following overview.

Monetary macroeconomists argue that the 'household-economy' identity overlaps with thematic categories like 'debt' and 'tax' which have persistently signified negative properties or qualities, a status amplified by orthodox economists. Categories like 'debt', and 'tax' have long had strong connotations of 'sin', 'guilt', 'obligation' and 'pain/punishment' in both the Greco-Latin and Old English language communities (Hudson (2004). Indeed, as Hudson 2004: 113-17) points out, words like 'money', 'fines', 'tribute', 'tithes', 'debts', 'manprice', 'sin' and 'taxes' are all etymologically linked in a thick semantic web. Historically-minded writers from Innes (1913) to Miller (2008) have argued that systems of credit and debt evolved out of the elaborate North German *wergild* system which used 'fines' and 'debt' to adjudicate tribal blood feuds. Under the *wergild* system, i.e. until the miscreant paid the fine, the perpetrator was both 'liable' and 'indebted' to the victim (Wray 1998:13).

This thematic critique informs the strong case that monetary macroeconomists make for reframing categories like 'deficits' and 'debt' as they develop an alternative account of money as a social and policy phenomenon and espouse a functional finance approach to macroeconomic policy.

The conventional prejudice against government deficits and debit financing is profound. Orthodox macroeconomists just 'know' that government deficits are bad because government spending must be 'financed' either by tax revenues or bond sales if monetization ('printing money'), and the unleashing of inflationary pressures presumed to result from monetization, are to be avoided (Auerbach *et. al.* 2003: 110).

They also 'know' that deficits cause interest rates to raise. The orthodox view is that a government deficit is inevitably inflationary and will lead to catastrophe. As Fullwiler (2006:11) indicates, orthodox economists treat a government's fiscal path as 'unsustainable' if the:

... present value of future primary surpluses is not equal to the current level of the national debt. In that case, the debt-to-GDP ratio does not converge to its current level and grows without bound; most importantly, interest payments as a percent of GDP grow without bound, requiring the government to eventually choose between default or inflationary 'monetization'.

Yet, these claims are not well supported empirically. The empirical evidence that government deficits 'cause' interest rates to rise is weak. The history of the American economy suggests that America's economic growth has been consistently strong over two centuries. However, this is odd given, as Wray (1999: 13) notes, that:

With one brief exception, the federal government has been in debt every year since 1776. In January 1835, for the first and only time in U.S. history, the public debt was retired, and a budget surplus was maintained for the next two years in order to accumulate what Treasury Secretary Levi Woodbury called 'a fund to meet future deficits.' In 1837 the economy collapsed into a deep depression that drove the budget into deficit, and the federal government has been in debt ever since.

If anything, the relationship between periods when US governments ran budget surpluses and the onset of depression seems much stronger. From 1817 to 1821 the national debt fell by 29 percent; from 1823 to 1836 it was eliminated, from 1852 to 1857 it fell by 59 percent, from 1867 to 1873 by 27 percent, from 1880 to 1893 by more than 50 percent, and from 1920 to 1930 by about a third. It is a matter of record that the United States has had six major depressions – 1819, 1837, 1857, 1873, 1893, and 1929. The correlation between the timing of budget surpluses and the onset of recessions is clearly strong. There is also recent work by Reinhart and Rogoff (2010: 7-12) which draws on over 3,700 annual observations of forty-four countries spanning about two hundred years. They conclude that the relationship between government debt and real GDP growth is weak for debt/GDP ratios below a threshold of 90 percent of GDP.

Second, there are also major problems with generational accounting because of its reliance on the notion of an 'intertemporal budget constraint'. This is both a protocol proposition and the Archimedean point on which the whole generational accounting approach rests. It is derived from the idea of the individual's 'budget constraint', one of the more fundamental concepts of microeconomics (Vahabi 2002: 2). Fullwiler (2006) has shown, the 'inter-temporal government budget constraint' category that is so crucial to generational accounting relies on the foundational microeconomic concept of a 'budget constraint'. The 'budget constraint' is a core idea derived, as Clower (1994: 806) argues, from:

... the pure theory axiomatically based neo-Walrasian analysis of Arrow-Debreau, Debreu, Arrow and Hahn ... that serves as a standard of 'economic correctness' in all modern teaching not only in microeconomics but in macroeconomics, money and banking, finance and econometrics.

In using the idea of the 'inter-temporal government budget constraint' those carrying out generational accounting accept that government expenditure can exceed government revenue (plus net assets) over a short period if credit is available. Equally, however, they also assume that lenders will only be willing to lend to governments if they believe the borrower's 'intertemporal budget constraint' is satisfied, i.e. that repayment of debts is possible. Raffelhuschen (1999: 19) has argued that:

... in the long term, all government spending *must* be balanced by the tax payments made by either current or future generations (my emphasis).

Put more formally, the inter-temporal budget constraint requires that the sum of all generational accounts *must* equal the present value of government consumption expenditure minus government net wealth.

This functional finance approach recognizes that the private sector can become overheated. The remedy for this is to increase taxes to drain high powered money. Deficits can be too large, but also too small. A deficit may be required, because the private sector prefers to accumulate some net wealth in the form of currency and Treasury bonds. For this reason, the government will usually be required to run a deficit, which means that its outstanding debt stock will grow over time. This need not be a problem since the government never faces an 'intertemporal budget constraint' so long as its offers of high powered money for goods and services are taken. Selling bonds likewise comes after government spending, so, like taxes, cannot be required to 'finance' spending. Rather, bond sales are used to drain excess high powered money to maintain a positive overnight interest rate. Whether that interest rate target is high or low, it must be set at the discretion of the central bank and then maintained by ensuring that banks have the desired level of reserves. The functional finance approach concludes that there is no magic deficit-to-GDP ratio or debt-to-GDP ratio that ought to be maintained or avoided.

Anyone arguing, as the generational accounting advocates do, that governments should run budget surpluses now, so as to better cope with future spending demands is making a meaningless claim (Mitchell & Moser 2003: 3). Monetary macroeconomists do not accept that budget deficits or public sector debt are bad. Nor do they accept that the ‘intertemporal budget constraint’ is anything more than an unfortunate consequence of the proclivities of the orthodox macroeconomics. As Mitchell and Mosler (2003: 4) argue:

In aggregate there can be no net savings of financial assets of the non-government sector without cumulative government deficit spending. In other words, the only entity that can provide the non-government sector with financial assets (net savings) and thereby simultaneously accommodate any net desire to save and thus eliminate unemployment is the government sector.

In effect, those promoting generational accounting have claimed that we face a future problem of generational imbalance, grounded in unacceptable levels of debt and deficit financing, have produced a profoundly mistaken diagnosis. They have allowed the constitutive assumptions of the macroeconomic orthodoxy to take priority over the way things are.

Conclusion

Generational accounting has to date achieved its dominance in public policy discourse courtesy of an absence of critical attention. This article begins to remedy this deficiency.

It has been argued here the concern about a future fiscal crisis depends more on leaving undisturbed long-standing economic *themata*. The conventional model of generational accounting relies on mistaken analogies, like the household-as-economy metaphor, and assumptions about the intrinsic wickedness of deficits which have long been central to successive expressions of economic orthodoxy. As Wray (2011:5) puts it, claiming that a government might not be able to ‘pay its bill’ either now or in the future is a lot like saying that a scorekeeper at a football game might ‘run out of points’ if too many goals are scored.

Monetary macroeconomics is valuable for its capacity to construct a discursive space in which alternative frames can be used to engage both

empirical analysis and policy alternatives. At the least, monetary macroeconomists suggests that governments do not actually face ‘inter-temporal budget constraints’, as orthodox economists insist they do, and that questions about the functionality of deficits needs to be explored rather than being summarily dismissed on *a priori* grounds. At the least from a political point of view given the significance of the range of measures being proposed to address the looming fiscal crisis, it matters that there be a sense there are alternatives be entertained. It can be conceded that concern about the future fiscal crisis seems not to be in the same league yet as the current sovereign debt crisis in Europe which since late 2010 has preoccupied public discussion and financial markets alike, mirroring efforts made by the OECD and the EU to persuade some European countries that they face a sovereign debt crisis now (Arghyrou & Kontinikas 2011). Yet, the consequences of how the so-called intergenerational debt crisis is framed may be at least equally important in the long-term.

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