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The Preference for Net Wealth

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Abstract

This paper provides a definition of the preference for wealth such that households do not suffer from any wealth illusion from the ownership of government bonds. People understand that public indebtedness will translate into future taxes. Each household is therefore assumed to own a share government liabilities equal to the future taxes that these liabilities will cause. A household's net wealth is defined as the sum its private wealth and of its own share of public liabilities. The preference for net wealth ensures that the Ricardian equivalence holds. The endogeneity of the ownership share through distortionary taxes is carefully investigated.

Keywords: Government debt, Preference for wealth, Ricardian equivalence

JEL Classification: D15, E21, E62, H63

1 Introduction

Many classical economists, from David Hume and Adam Smith to Alfred Marshall and Irving Fisher, believed in the relevance of the preference for wealth (Steedman 1981, Zou 1994). For instance, Marshall (1890) wrote "*There are indeed some who find an intense pleasure in seeing their hoards of wealth grow up under their hands, with scarcely any thought for the happiness that may be got from its use by themselves or by others.*".[1]

To define a preference for wealth, households must know their own wealth at any point in time. The difficulty is that one of the main assets that they hold is government bonds. But, rational households realize that they are liable for government debt. Hence, the goal of this paper is to define the net wealth of a household.

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[1] On the empirical front, the preference for wealth can account for a marginal propensity to consume out of permanent income that is much below one (Carroll 2000, Kumhof, Rancière, and Winant 2015, and Straub 2018); while the bequest motive, i.e. utility from bequeathed wealth, is needed to match the high empirical level of wealth inequality (De Nardi 2004, Cagetti and De Nardi 2006, Benhabib, Bisin and Luo 2017).

Higher government debt must either translate into higher future taxes for some households or into lower future public expenditures. For each household, I therefore define its "ownership share" of government liabilities by computing the extent to which the government liabilities raise this household's future tax liabilities. This requires knowing what the tax liabilities would have been in the absence of government debt. The net wealth of a household consists of its private wealth net of its own share of government liabilities.

Michau, Ono, and Schlegl (2018) have shown that, with a preference for wealth, Ponzi schemes of government debt can sometimes be sustainable forever. Hence, throughout my analysis, I focus on government liabilities net of the magnitude of the Ponzi debt scheme (if any). This allows for the possibility that some government debt is rolled over forever, without eventually triggering either a rise in taxes or a fall in public expenditures.

The preference for *net* wealth implies that the Ricardian equivalence holds. Hence, a lump-sum transfer that is subsequently financed by lump-sum taxes on the benefit recipients is neutral. Households do not suffer from any wealth illusion.

Finally, I consider the case where the government pays for its liabilities by raising distortionary taxes. Do households distort their future consumption decisions such as to decrease their ownership share of government liabilities? I characterize the behavior of a household under this assumption and argue that it might be more plausible to consider that households take their ownership share as exogenously given by the amount of taxes that they will end up paying.

Related Literature. To establish the Ricardian equivalence proposition within a neoclassical economy, Barro (1974) never had to define the net wealth of a household at a given point time. This paper offers a way to do so, which is of interest even beyond the preference for wealth.

In recent work, I have shown that the preference for wealth broadens the range of theoretical possibilities coming out the standard neoclassical model: it generates rational bubbles (Michau, Ono, and Schlegl 2018), it enriches the dynamics of inequalities (Michau, Ono, and Schlegl 2019), and it allows for the possibility of secular stagnation (Michau 2018, 2019). All this work relies on the preference for net wealth, which shows that these results are not due to the failure of the Ricardian equivalence.

Ono (1994, 2001) derived similar results by relying on a preference for liquidity. For these results to hold despite ever growing real money balances, the preference for liquidity must be insatiable. Similarly, to obtain a secular stagnation equilibrium with a preference for wealth (but not for net wealth), Ono (2015) had to assume that the marginal utility of wealth is asymptotically strictly positive.

Michaillat and Saez (2015) also relied on a preference for wealth to obtain a permanent liquidity trap. They did not correct for government liabilities and found that helicopter drops of money stimulates the economy by raising households' perceived wealth, which reduces their marginal utility of wealth. Michaillat and Saez (2019) derived a new Keynesian model where households care about their own wealth relative to the average wealth in society. In that case, the level of government bonds cannot affect any household's marginal utility of wealth.

Section 2 exposes the setup of the economy and defines households' ownership share of government liabilities. The Ricardian equivalence is derived in Section 3. Section 4 considers distortionary taxes. The paper ends with a conclusion.

2 Setup

2.1 Households

Time is continuous. There is a unit mass of infinitely lived households, indexed by $i \in [0,1]$. Population within each household grows at rate n. At time t, the total population of the economy is equal to $L_t = e^{nt}$.

At each point in time, households inelastically supply L_t units of labor. Let ϕ_t^i denote the productivity of household i and w_t^i the corresponding wage rate at t.[2] For simplicity, I assume that average productivity remains constant over time and normalize it to be equal to one, i.e. $\int_0^1 \phi_t^i di = 1$. Workers of household i must pay a lump-sum tax of τ_t^i per capita. Consumption and wealth per capita in household i at time t are denoted by c_t^i and a_t^i, respectively. Wealth yields a real return r_t. However, population growth within the household results in a dilution of wealth. The net return on wealth per capita is therefore equal to $r_t - n$. Household wealth per capita therefore evolves according to:[3]

$$\dot{a}_t^i = (r_t - n)\, a_t^i + w_t^i - \tau_t^i - c_t^i. \tag{1}$$

Each household is subject to an intertemporal budget constraint that prevents it from running Ponzi schemes:

$$\lim_{T\to\infty} e^{-\int_t^T (r_s - n)ds} a_T^i \geq 0. \tag{2}$$

Household i's intertemporal budget constraint at time t can equivalently be written as:

$$\int_t^{\infty} e^{-\int_t^s (r_u - n)du} c_s^i ds \leq a_t^i + \int_t^{\infty} e^{-\int_t^s (r_u - n)du} \left[w_s^i - \tau_s^i\right] ds. \tag{3}$$

Before introducing households' preferences, and in particular their preference for wealth, we need to fully specify the setup of the economy.

[2] I allow for productivity differences to emphasize that households are heterogenous. But all the insights of this analysis could be obtained under alternative sources of heterogeneity, such as differences in preferences across households.

[3] This wealth accumulation equation is formally derived in Michau, Ono, and Schlegl (2018).

2.2 Firms

A representative firm demands a quantity l_t^i of labor of type i, for all $i \in [0,1]$. Effective labor demand therefore amounts to $\int_0^1 \phi_t^i l_t^i di$. The firm rents capital K_t from households and employs labor $\int_0^1 \phi_t^i l_t^i di$ to produce output Y_t using a constant returns to scale neoclassical production function:

$$Y_t = F\left(K_t, \int_0^1 \phi_t^i l_t^i di\right). \tag{4}$$

They choose their demand for capital K_t and for labor l_t^i such as to maximize their profits:

$$F\left(K_t, \int_0^1 \phi_t^i l_t^i di\right) - R_t K_t - \int_0^1 w_t^i l_t^i di, \tag{5}$$

where R_t is the rental cost of capital. In equilibrium, each factor of production must be paid its marginal product:

$$R_t = F_K\left(K_t, \int_0^1 \phi^i l_t^i di\right), \tag{6}$$

$$w_t^i = \phi_t^i F_L\left(K_t, \int_0^1 \phi^i l_t^i di\right). \tag{7}$$

Each household i supplies L_t units of labor. It follows that, in equilibrium, $l_t^i = L_t$ and, hence, $\int_0^1 \phi_t^i l_t^i di = \int_0^1 \phi_t^i L_t di = L_t$. Also, the real interest rate r_t is equal to the rental cost of capital R_t net of depreciation δ. We must therefore have $r_t = F_K(K_t, L_t) - \delta$ and $w_t^i = \phi_t^i F_L(K_t, L_t)$.

Let $y_t = Y_t/L_t$ and $k_t = K_t/L_t$ denote production per capita and capital per capita, respectively. Define $f(k) = F(k, 1)$ for any k. We therefore have $y_t = f(k_t)$ together with:

$$r_t = f'(k_t) - \delta, \tag{8}$$

$$w_t^i = \phi_t^i[f(k_t) - k_t f'(k_t)]. \tag{9}$$

2.3 Government

Let b_t denote the real level of government debt per capita at time t. Public expenditures on goods and services at time t amount to g_t per capita. Hence, government debt evolves according to:

$$\dot{b}_t = (r_t - n) b_t + g_t - \int_0^1 \tau_t^i di. \tag{10}$$

The government's no-Ponzi condition is given by:

$$\lim_{T\to\infty} e^{-\int_t^T (r_s-n)ds} b_T \leq 0, \tag{11}$$

or, equivalently, by:

$$b_t + \int_t^\infty e^{-\int_t^s (r_u-n)du} g_s ds \leq \int_t^\infty e^{-\int_t^s (r_u-n)du} \left[\int_0^1 \tau_s^i di\right] ds. \tag{12}$$

As shown by Michau, Ono, and Schlegl (2018), when households have a preference for wealth, a Ponzi scheme of government debt can be sustainable under some conditions. In such cases, the magnitude Δ_t of the Ponzi scheme at time t is given by:

$$\Delta_t = b_t + \int_t^\infty e^{-\int_t^s (r_u-n)du} g_s ds - \int_t^\infty e^{-\int_t^s (r_u-n)du} \left[\int_0^1 \tau_s^i di\right] ds. \tag{13}$$

From the government debt accumulation equation (10), we must always have:

$$\dot{\Delta}_t = (r_t - n)\,\Delta_t. \tag{14}$$

Throughout my analysis, I exclusively focus on cases where the government's no-Ponzi condition is either binding or violated, i.e. $\Delta_t \geq 0$.

2.4 Aggregate Wealth

The wealth a_t^i of household i at time t consists of claims on physical capital and of risk-free bonds. The total supply of capital and of bonds per capita at t are equal to k_t and b_t, respectively. Hence, by the asset market clearing condition, the aggregate wealth of households is given by:

$$\int_0^1 a_t^i di = k_t + b_t. \tag{15}$$

The wealth of the government at time t is equal to $\Delta_t - b_t$. Thus, the total wealth of the economy amounts to:

$$\int_0^1 a_t^i di + \Delta_t - b_t = k_t + \Delta_t. \tag{16}$$

2.5 Ownership of Government Liabilities

When assessing their own wealth, households realize that government liabilities must be covered by future taxes, i.e. government bonds cannot be taken as net wealth. More precisely, households understand the relationship between government liabilities and the present value of public expenditures and of taxes, as given by (13). A higher level of government liabilities $b_t - \Delta_t$ must either translate into lower public expenditures g_s for $s \geq t$ or into higher lump-sum taxes τ_s^i for $s \geq t$. We shall therefore consider that government liabilities belongs to households to the extent that it raises their future taxes and that it belongs to the government itself to the extent that it reduces future public expenditures.

Formally, to determine the share α_t^i of government liabilities $b_t - \Delta_t$ "owned" by household i at time t, we need to know the (counterfactual) level of lump-sum taxes $\tilde{\tau}_{s,t}^i$ with $s \geq t$ that would prevail with zero government liabilities at t. Thus, the household's ownership of government liabilities at t is given by the extent to which these liabilities raise its present value of future taxes:

$$\alpha_t^i \left(b_t - \Delta_t\right) = \int_t^\infty e^{-\int_t^s (r_u - n) du} \tau_s^i ds - \int_t^\infty e^{-\int_t^s (r_u - n) du} \tilde{\tau}_{s,t}^i ds. \tag{17}$$

Household i therefore considers her net wealth to be equal to $a_t^i - \alpha_t^i (b_t - \Delta_t)$.

Similarly, to determine the share α_t^G of government liabilities "owned" by the government itself, we need to know the (counterfactual) level of public expenditures $\tilde{g}_{s,t}$ with $s \geq t$ that would prevail with zero government liabilities at t. The government's ownership of its own liabilities is therefore given by the extent to which these liabilities decrease the present value of public expenditures:

$$\alpha_t^G \left(b_t - \Delta_t\right) = \int_t^\infty e^{-\int_t^s (r_u - n) du} \tilde{g}_{s,t} ds - \int_t^\infty e^{-\int_t^s (r_u - n) du} g_s ds. \tag{18}$$

The ownership shares of government liabilities add up to one.

Lemma 1 *We must always have:*

$$\int_0^1 \alpha_t^i di + \alpha_t^G = 1. \tag{19}$$

To compute the ownership shares, it is necessary to know the counterfactual level of taxes and of public expenditures that would prevail with zero government liabilities. In theory, this can be determined from the political structure of the economy. However, as we shall see, we can derive a number of results without computing these ownership shares.

Also, one benchmark of interest is the representative household framework with exogenous public expenditures, i.e. $\tilde{g}_{s,t} = g_t$ for all t, which implies $\alpha_t^G = 0$ and $\alpha_t^i = 1$ for all the identical households. Michau, Ono, and Schlegl (2018)'s analysis of Ponzi schemes and Michau (2018, 2019)'s analysis of secular stagnation and of helicopter drops of money all rely on this benchmark case.

2.6 Households' Preferences

We can now specify households' preferences. They discount the future at rate ρ, with $\rho > n$. Household i derives utility $u(c_t^i)$ from consuming c_t^i at time t, with $u'(\cdot) > 0$, $u''(\cdot) < 0$, and $\lim_{c\to 0} u'(c) = \infty$. It also derive utility $\gamma(a_t^i - \alpha_t^i(b_t - \Delta_t))$ from holding net wealth $a_t^i - \alpha_t^i(b_t - \Delta_t)$, with $\gamma'(\cdot) > 0$, $\gamma''(\cdot) < 0$, $\gamma'(0) < \infty$, $\lim_{k\to\infty} \gamma'(k) = 0$, and $\int_0^\infty \gamma'(e^{\lambda t})dt < \infty$ for any $\lambda > 0$.[4] Household i's intertemporal utility function is therefore given by:

$$\int_0^\infty e^{-(\rho-n)t} \left[u\left(c_t^i\right) + \gamma\left(a_t^i - \alpha_t^i(b_t - \Delta_t)\right)\right] dt. \tag{20}$$

Maximizing utility (20) subject to the budget constraint (1) and (2) with a_0^i given yields the consumption Euler equation:

$$\frac{\dot{c}_t^i}{c_t^i} = \left[r_t - \rho + \frac{\gamma'\left(a_t^i - \alpha_t^i(b_t - \Delta_t)\right)}{u'\left(c_t^i\right)}\right] \frac{u'\left(c_t^i\right)}{-u''\left(c_t^i\right) c_t^i}, \tag{21}$$

together with the transversality condition:

$$\lim_{t\to\infty} e^{-(\rho-n)t} u'\left(c_t^i\right) a_t^i = 0. \tag{22}$$

2.7 Equilibrium

While solving for the general equilibrium of the economy is beyond the scope of this short paper, it is nonetheless useful to provide a formal definition of equilibrium. For a given government policy (τ_t^i, g_t), given counterfactual policies $(\tilde{\tau}_{s,t}^i, \tilde{g}_{s,t})_{s\geq t}$, and given initial conditions (a_0^i, b_0, k_0), the equilibrium of the economy $(a_t^i, c_t^i, w_t^i, r_t, k_t, b_t, \Delta_t)$ is jointly characterized by:

- The utility maximizing behavior of each household i, which is jointly given by its budget constraint (1) and (2), its optimality conditions (21) and (22), and its ownership share (17);

- The profit maximizing behavior of firms, which determines the real interest rate (8) and the wage rate (7);

- The government debt accumulation equation (10) and the magnitude of the Ponzi scheme (13);

- The asset market clearing condition (15);

[4] This last technical condition rules out explosive Ponzi schemes (Michau, Ono, and Schlegl 2018). It is very mild and, under the other conditions that I have imposed on $\gamma(\cdot)$, it must be satisfied for any polynomial specification of $\gamma(\cdot)$.

- The goods market clearing condition:

$$f(k_t) = \dot{k}_t + (\delta + n) k_t + \int_0^1 c_t^i di + g_t. \tag{23}$$

By Walras' law, this last equation can be deduced from the other equilibrium conditions.

There are of course many policies and initial conditions for which no equilibrium exists. In particular, a Ponzi scheme can only be sustained if households are willing to lend to the government beyond the amount it is expected to repay.[5]

This subsection only offers a definition of the economic equilibrium for given policies and counterfactual policies. Importantly, the policies and counterfactual policies can become endogenous objects by specifying the political structure and by defining the corresponding political-economy equilibrium.

3 Ricardian Equivalence

At time t, each household i receives a lump-sum transfer equal to λ^i from the government. These transfers will subsequently be financed by raising the present value of lump-sum taxes on household i by λ^i. This policy can only alter the real allocation of resources by modifying the net wealth of households and, hence, their marginal utility of wealth.

Let $\alpha_t^{i\prime}$ be the ownership share of household i immediately after the policy is implemented at time t. Government indebtedness increases by $\int_0^1 \lambda^i di$, while household i's present value of taxes increases by λ^i. Hence, by definition of the household's ownership share (17), we must have:

$$\alpha_t^{i\prime}\left(b_t - \Delta_t + \int_0^1 \lambda^i di\right) = \int_t^\infty e^{-\int_t^s (r_u - n) du} \tau_s^i ds + \lambda^i - \int_t^\infty e^{-\int_t^s (r_u - n) du} \tilde{\tau}_{s,t}^i ds. \tag{24}$$

At time t, the wealth of household i mechanically increases from a_t^i to $a_t^i + \lambda^i$. Thus, immediately after the policy is implemented, household i's net wealth is equal to:

$$\begin{aligned} a_t^i + \lambda^i - \alpha_t^{i\prime}\left(b_t - \Delta_t + \int_0^1 \lambda^i di\right) \\ &= a_t^i + \lambda^i - \left[\int_t^\infty e^{-\int_t^s (r_u - n) du} \tau_s^i ds + \lambda^i - \int_t^\infty e^{-\int_t^s (r_u - n) du} \tilde{\tau}_{s,t}^i ds\right], \\ &= a_t^i - \left[\int_t^\infty e^{-\int_t^s (r_u - n) du} \tau_s^i ds - \int_t^\infty e^{-\int_t^s (r_u - n) du} \tilde{\tau}_{s,t}^i ds\right], \\ &= a_t^i - \alpha_t^i (b_t - \Delta_t), \end{aligned} \tag{25}$$

[5] Relying on a representative agent framework (with exogenous public expenditures, i.e. $\tilde{g}_{s,t} = g_t$ for all t), Michau, Ono, and Schlegl (2018) have formally shown that an explosive Ponzi scheme, with $r_t > n$ forever, must violate households' transversality condition.

The policy does not affect households' net wealth. It therefore leaves unchanged their marginal utility of wealth and, hence, the real allocation of resources in the economy. This establishes the following lemma.

Lemma 2 *The Ricardian equivalence holds.*

The ownership shares of government liabilities imply that households do not suffer from any wealth illusion.

4 Distortionary Taxes

So far, I have only considered lump-sum taxes. But, if the government raises distortionary taxes to pay for its liabilities, then the ownership shares become endogenous. Should we assume that, in additional to the usual distortionary effects of taxation, households will further distort their behavior such as to increase their ownership share?

To answer this question, I characterize the behavior of households in a special case of interest. I consider an economy with two consumption goods c and d and where households have heterogeneous preferences. More specifically, household i's intertemporal utility function is now given by:

$$\int_0^\infty e^{-(\rho-n)t}\left[u\left(c_t^i\right)+\varphi^i v\left(d_t^i\right)+\gamma\left(a_t^i-\alpha_t^i(b_t-\Delta_t)\right)\right]dt, \tag{26}$$

where the non-negative parameter φ^i determines the strength of household i's preference for good d. At any point in time, good c is subject to a consumption tax τ^c and good d to a tax τ^d, both of which finance the public expenditures g_t. In addition, the government intends to pay for its liabilities $b_t-\Delta_t$ by raising an additional tax ω on good d. By definition of the ownership share (17), this yields:

$$\alpha_t^i\left(b_t-\Delta_t\right)=\int_t^\infty e^{-\int_t^s(r_u-n)du}\omega d_s^i ds, \tag{27}$$

for any t. Household i's wealth accumulation equation is given by:

$$\dot{a}_t^i=\left(r_t-n\right)a_t^i+w_t^i-\left(1+\tau^c\right)c_t^i-\left(1+\tau^d+\omega\right)d_t^i,$$

while the corresponding no-Ponzi condition remains unchanged, and given by (2). The taxes τ^c and τ^d only entails the usual distortions, while the tax ω could also affect the behavior of consumers through the endogeneity of the ownership share.

At time 0, household i determines the path of its consumption of both goods, c_t^i and

d_t^i, such as to maximize its intertemporal utility.[6] This yields the consumption Euler equation for good c:

$$\frac{\dot{c}_t^i}{c_t^i} = \left[r_t - \rho + (1+\tau^c) \frac{\gamma' \left(a_t^i - \alpha_t^i(b_t - \Delta_t)\right)}{u'\left(c_t^i\right)}\right] \frac{u'\left(c_t^i\right)}{-u''\left(c_t^i\right) c_t^i}, \tag{28}$$

where the tax τ^c raises the attractiveness of wealth relative to the consumption of good c. The demand for good d is given by:

$$\varphi^i v'\left(d_t^i\right) = \frac{1+\tau^d+\omega}{1+\tau^c} u'\left(c_t^i\right) + \omega \int_0^t e^{-\int_s^t (r_u - \rho) du} \gamma'\left(a_s^i - \alpha_s^i(b_s - \Delta_s)\right) ds. \tag{29}$$

The integral term on right-hand side is the additional distortion due to the endogeneity of the ownership share. At time 0, the household plans to reduce its future consumption of good d such as to reduce the present value of taxes dedicated to the repayment government liabilities, which raises its ownership share. However, this does not affect the demand for good d, relative to good c, at time 0. This is because d_0^i only affects the ownership share at time 0, while future values of d_T^i for some time $T > 0$ affect all the ownership shares from time 0 to T. Thus, the endogeneity of the ownership share creates rising distortions over time. However, this optimal solution is clearly not time consistent. Once time T comes, part of the benefit of reducing d_T^i is already sunk. This time inconsistency problem is fundamentally due to the fact that the ownership share is a forward looking variable, unlike wealth which is backward looking.

Interestingly, from the previous two equations, the dynamics of d_t^i can be written as:

$$\frac{\dot{d}_t^i}{d_t^i} = \left[r_t - \rho + \left(1+\tau^d\right) \frac{\gamma' \left(a_t^i - \alpha_t^i(b_t - \Delta_t)\right)}{\varphi^i v'\left(d_t^i\right)}\right] \frac{v'\left(d_t^i\right)}{-v''\left(d_t^i\right) d_t^i}. \tag{30}$$

Surprisingly, the tax ω does not distort the intertemporal demand for good d. On the one hand, the tax ω raises the attractiveness of wealth relative to good d, which induces the household to back-load its consumption of good d; but, on the other hand, the ownership share induces the household to front-load its consumption of good d, such as to have a higher ownership share in the future. Under full commitment, these two effects exactly cancel out. This is due to the fact that postponing the payment of taxes ω on good d raises both wealth and the present value of taxes by exactly the same amount.

But, is it plausible that households are going to distort their consumption of good d, relative to good c, such as to raise their ownership share? It might be more sensible to consider that households take their ownership share as exogenously given by the amount

[6] The tax ω imposed on good d generates a present value of revenue from time t onwards equal to $\mu_t^i = \int_t^\infty e^{-\int_t^s (r_u - n) du} \omega d_s^i ds$. To solve household i's problem, we can write $\gamma\left(a_t^i - \alpha_t^i(b_t - \Delta_t)\right)$ as $\gamma\left(a_t^i - \mu_t^i\right)$ together with $\dot{\mu}_t^i = (r_t - n)\, \mu_t^i - \omega d_t^i$ and the boundary condition $\lim_{T\to\infty} e^{-\int_t^T (r_s - n) ds} \mu_T^i = 0$.

of taxes that they will end up paying. For instance, if d corresponds to cigarettes, smokers who have a high value of φ^i, would be unhappy about being targeted to pay for government liabilities. This would reduce their net wealth. However, it seems implausible that they would reduce and front-load their cigarette consumption such as to feel wealthier today.

In other words, smokers, who share a high value of φ^i, collectively perceive their net wealth as reduced if the government intends to pay for its liabilities by taxing cigarettes. However, even if they have a preference for net wealth, this does not distort their consumption of cigarettes, as they would not feel less targeted as a result. Thus, when optimizing, they consider their ownership share to be exogenous given, which implies that the demand for good c and d are only subject to the usual distortions imposed by taxes on consumption.[7]

5 Conclusion

This paper has offered a definition of the net wealth of a household at any given point in time. This has allowed me to provide a benchmark specification of the preference for wealth where households do not suffer from any wealth illusion from the ownership of government bonds.

To investigate the macroeconomic consequences of the preference for wealth, it is desirable to remain as close as possible to the standard neoclassical framework. It is therefore useful to have a benchmark specification that satisfies the Ricardian equivalence. Indeed, by relying on a preference for net wealth, I have been able to show that secular stagnation can naturally occur within a neoclassical economy without any failure of the Ricardian equivalence (Michau 2018, 2019). Similarly, the preference for net wealth provides the only microfoundation for rational bubbles that does not violate the Ricardian equivalence (Michau, Ono, and Schlegl 2018).[8] These fundamental insights about the nature of secular stagnation or of rational bubbles could not be obtained under alternative microfoundations.

While this line of research provides a strong theoretical justification for focusing on the preference for net wealth, empirically households might have different reasons to enjoy accumulating wealth, such as a preference for status. This entails alternative specifications of the preference for wealth, whose consequences can hopefully be better understood by being compared to the benchmark specification offered in this paper.

[7] This turns out to correspond to the allocation chosen by a household who fails to commit and who naively reoptimizes its demand for goods c and d at each point in time.

[8] Alternative models of rational bubbles either rely on an OLG structure or on financial frictions. In either case, bubbles exist to redistribute resources across people. Hence, the very existence of bubbles relies on the non-Ricardian nature of these models.

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A Proof of Lemma 1

By definition of $\tilde{\tau}^i_{s,t}$ and $\tilde{G}_{s,t}$, we must have:

$$0 = \int_t^{\infty} e^{-\int_t^s (r_u - n)du} \tilde{g}_{s,t} ds - \int_t^{\infty} e^{-\int_t^s (r_u - n)du} \left[\int_0^1 \tilde{\tau}^i_{s,t} di \right] ds. \tag{A1}$$

It follows that:

$$\begin{aligned}
&\int_0^1 \alpha_t^i \left(b_t - \Delta_t\right) di + \alpha_t^G \left(b_t - \Delta_t\right) \\
&\qquad = \int_t^{\infty} e^{-\int_t^s (r_u - n)du} \left[\int_0^1 \tau^i_s di \right] ds - \int_t^{\infty} e^{-\int_t^s (r_u - n)du} \left[\int_0^1 \tilde{\tau}^i_{s,t} di \right] ds \\
&\qquad\qquad + \int_t^{\infty} e^{-\int_t^s (r_u - n)du} \tilde{g}_{s,t} ds - \int_t^{\infty} e^{-\int_t^s (r_u - n)du} g_s ds, \\
&\qquad = \int_t^{\infty} e^{-\int_t^s (r_u - n)du} \left[\int_0^1 \tau^i_s di \right] ds - \int_t^{\infty} e^{-\int_t^s (r_u - n)du} g_s ds, \\
&\qquad = b_t - \Delta_t,
\end{aligned}$$

where the second equality follows from (A1) and the third from (13).