Leveraging Posterity's Prosperity?

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Abstract

We critically review studies by Blanchard (B) and Rachel and Summers (RS). By the standard fiscal-gap measure, the U.S. government is in dire fiscal shape thanks to constantly enlarging its postwar, take-as-you-go Ponzi scheme. Yet B and RS seemingly rationalize its expansion. Their arguments rest on the safe rate being very low. But almost all households face high safe rates – the rates available from pre-paying their loans. We also question modeling assumptions that help drive key B and RS results and reference recent simulation studies, which reach strongly opposite conclusions to B's.

Introduction

Our paper examines two thought-provoking papers by Blanchard (2019) (B) and Rachel and Summers (2019) (RS), which rationalize, without outright endorsing, additional U.S. deficit spending. B suggests that since U.S. growth rates routinely exceed safe interest rates, "… public debt may have no fiscal cost."[1] RS seek to mitigate what they view as secular stagnation by using government borrowing to keep the safe rate above the so-called zero lower bound. Given limited space, we specialize in criticism. Our paper starts by pointing out that the government's intertemporal budget constraint (IBC) limits additional deficit finance even were it advantageous at the margin, not least because of America's initial condition – a massive fiscal gap. Next, we discuss results on efficiency in overlapping generation (OLG) models that circumscribe B's conjecture. We then point out that for almost all Americans, the safe lending rate is actually their high, not Uncle Sam's low, borrowing rate. This fact undermines both studies' conclusions. We also raise concerns about key, but questionable B and RS modeling assumptions. Finally, we stress that safe rates below growth rates don't necessarily suggest further expanding America's seemingly reckless Ponzi game. We end by cautioning politicians considering more deficit finance to follow the Hippocratic oath, *First, do no harm*.

The IBC's Constraint on Ponzi Schemes and the US Fiscal Gap

B claims that "[i]f the interest rate paid by the government is less than the growth rate, then the intertemporal budget constraint facing the government no longer binds." This is an overstatement. To see why, consider B's model of a closed economy, with its zero growth, macro shocks, highly risk-averse agents, and, on average, a negative safe rate. If B's model's government, persuaded

[1] Blanchard has written extensively about the cons as well as the pros of Ponzi schemes. In recent testimony, Blanchard calls for reducing U.S. deficit finance unless there is an aggregate-demand shortfall. This suggests that he takes his model as illustrative, rather than as a serious framework for guiding U.S. fiscal policy.

that the bigger the Ponzi scheme the better, borrows all of workers' savings and transfers them to retirees, next period's capital stock will be zero. This would spell game over for both B's policy and the economy.[2] Moreover, America's Ponzi scheme is largely being conducted by taxing workers' labor earnings to make transfers to the elderly. But as Altig et al. (2020, forthcoming) show, the scope for higher marginal taxation is limited.[3] Indeed, adopting an extra Ponzi scheme featuring, say, a 15 percent marginal tax would leave many poor and middle-class households little or no incentive to work. The potential for America to extend its Ponzi scheme is further limited by its large fiscal gap – its present-value shortfall in intertemporal government budget balance under current policy. America's fiscal gap is $33.1 trillion,[4] which is 1.5 times current GDP and 2.0 times U.S. official debt. This measure reflects Congressional Budget Office (CBO) extended-baseline, long-term projections, extrapolations thereof, and an assumed 6.2 percent real discount rate – the average postwar real return on national wealth.[5] On a flow basis, the fiscal gap is 6.2 percent of annual GDP – more than two Medicare programs! A positive fiscal gap, let alone a massive one, spells explicit or implicit default. Eliminating Uncle Sam's fiscal gap, while sustaining scheduled outlays requires permanently raising the path of federal revenues by 34 percent starting immediately.[6] Clearly, delaying the adjustment lets older generations fully or partially off the hook. This is the grim, zero-sum calculus underlying generational policy.[7] It's also the appropriate starting

[2] See Evans et. al., 2012 and Evans, 2020 (this volume).

[3] The median U.S. marginal remaining lifetime net tax rate on labor supply is already quite high, at 42 percent. Among the young and middle-aged poor and the top 1 percent of all ages, it's above 50 percent. In the case of bottom quintile 40 year olds, the 75th percentile value is 77.1 percent.

[4] The fiscal gap is a partial equilibrium measure. Nonetheless, it is widely used. See https://ec.europa.eu/info/sites/info/files/file_import/ip018_en_2.pdf

[5] We derive annual real returns on national wealth by differencing national wealth across adjacent years, subtracting national saving out of labor earnings, and dividing by initial national wealth. Using lower discount rates generates a significantly higher fiscal gap. Using the government's preferred real discount rate of 3 percent yields a fiscal gap of $165 trillion with larger requisite policy adjustments.

[6] The requisite tax hikes are 53 percent starting in 2030 and 78 percent starting in 2040.

[7] See Kotlikoff (2002). The fiscal gap's size relative to official debt attests to American politicians' prowess at keeping liabilities off the books. The delay in its resolution reflects the country's profound lack of intergenerational altruism.

point for simulating additional intergenerational redistribution. B's model, however, assumes no initial government. This helps it generate a safe rate that's lower than the growth rate. But the assumption casts doubt on B's results since the marginal benefit from intergenerational transfers decreases in their size.

Pareto Efficiency in an OLG Economy

Samuelson (1958) and Diamond (1965) show that deterministic OLG models can, under the right circumstances, run Pareto-efficient Ponzi schemes. Blanchard and Weil (1992) show that with risk, the safe rate can be less than the growth rate in dynamically efficient economies. Demange (2002) examines the issue in economies with uncertainty and incomplete markets. She shows that the differential between the growth rate and the average safe rate does not, by itself, signal the efficacy of a Ponzi scheme. This is particularly true when returns to risky assets are high – the current case.[8] Moreover, policies that redistribute across generations may be Pareto improving, not because they provide higher than comparable risk-adjusted market returns, but because they improve intergenerational risk sharing (see Shiller, 1999 and Bohn, 1998).[9] Krueger and Kubler (2006) consider pay-go Social Security in this regard. They show that Social Security's intergenerational risk sharing is useful, but too small to compensate for capital's crowding out. Note that neither they nor B or this paper takes a stand on the government's role in intragenerational risk-sharing.

[8] The real return on U.S. national wealth has averaged 7.9 percent since 2010, compared with a post-1950 average of 6.2 percent.

[9] To see the distinction between risk-sharing and a Ponzi scheme, modify B's two-period model to include agents working when old if they don't randomly become disabled. Now workers face second-period asset income and labor earnings risk. The government has no safe asset in which to invest. If it borrows, invests in capital, and taxes bond holders its excess return, "safe" debt is identical to risky capital. But if the net taxes are only levied on the non-disabled, bonds become a valued risk-mitigating asset and their return can be driven far below zero. This scheme could be, and to some extend it is, implemented through progressive taxation. If, observing this gap between growth and safe rates, the government decides to institute an "efficient" Ponzi scheme with a fixed pension benefit financed on a pay-go basis by taxes on workers, net wages when young will be more variable, raising generation-specific risk and potentially producing an outcome in which no generation is better off and at least one is worse off.

The Effective Safe Rate and the Safe Labor Endowment Assumption

B and RS equate the safe rate with returns on short-term Treasuries. B points out that real growth rates routinely exceed real safe (1-year to 10-year U.S. bond) rates, with current differentials running between 100 and 200 basis points. But close to 90 percent of Americans are in debt and their safe real rates – the real rates they can earn for sure by pre-paying their mortgages, credit card balances, student debt, etc. – equal or exceed the real growth rate.[10] Such debt-ridden Americans would be worse off if forced to participate in a Ponzi scheme paying the growth rate rather than their higher borrowing rate.[11] If the scheme is implemented by borrowing from savers with subsequent debt rollovers, borrowers won't be forced to earn what is, for them, a below-market return. But they will be forced, due to capital's induced crowing out, to pay even higher borrowing rates. And along paths in which the scheme fails – due to crowding out, economic shocks, or both – borrowers, like lenders, will have to pay higher lifetime net taxes. Were B to calibrate his model to the U.S. weighted-average safe borrowing/lending rate or formally included borrowers, who, again, represent the overwhelming majority of households, his Ponzi schemes would surely be less likely to achieve Pareto improvements.[12] Another concern: B's model assumes that workers receive a time-invariant wage endowment equal to half the average wage. As a result, B can run a limited Ponzi scheme with no risk whatsoever.[13] Evans (2020, this volume) and Hasanhodzic

[10] https://www.debt.org/faqs/americans-in-debt/demographics/

[11] Take Joe, who is borrowing at, say, 8 percent, i.e., Joe's willing to give up $1.00 this year for $1.08 more next year and vice-versa. But the Ponzi scheme forces him swap $1.00 this year for, say, just $1.03 next year.

[12] Currently, 1-year and 10-year Treasuries are yielding 1.52 percent and 1.91 percent, respectively. Yes, nominal GDP growth is running at 3.82 percent. But prevailing rates on 30-year mortgages, credit cards, and undergraduate loans are 3.87 percent, 19.2 percent, and 4.53 percent, respectively. Even when adjusted for default risk, the (weighted-average) rate at which Americans are borrowing is, not least due to intermediation costs, probably much higher than the nominal growth rate.

[13] An earnings endowment lasting forever, let alone one equal to half of average wages, is hard to swallow given changes in technology and international competition. This is not to mention the long history of economies collapsing because of wars, revolutions, plagues, and mismanagement.

(2020, this volume) consider versions of B's model with 2- and 10-period lived agents, respectively. They report significant expected utility losses among future generations from running B's policies. Since these losses are much smaller when wages are safer, their results demonstrate the important role of the safe labor endowment assumption in B's calibration.

The Closed Economy Assumption

Most U.S. debt is held abroad, yet B models a closed, U.S. economy. Moreover, as recent simulations of the Global Gaidar Model (GGM) (see Benzell et. al., 2018) – a 17-region global life-cycle model, show, the U.S. is already effectively a small open economy.[14] This will become increasingly true as its share of world GDP falls from 15 percent now to a GGM-predicted 4 percent by 2100. B mentions the need to revisit his study in an open economy. Doing so would likely portray U.S. Ponzi schemes as beggar-thy-neighbor policies that are good for the U.S. and bad for the rest of the world because they reduce global saving and investment. Stated differently, a Ponzi scheme run by the U.S. might be Pareto improving for Americans, but not for the world as a whole.[15] As for RS, they model a larger closed, deterministic[16] economy, namely the OECD, justifying this approach by pointing to the OECD's small current account imbalance with the rest of the world. This raises several problems. First, the OECD countries are highly heterogeneous, making it hard to draw policy conclusions for individual countries.[17] Second, a small current account imbalance doesn't mean that the OECD economy behaves, at the margin, like a closed economy.[18] Third, in

[14] The GGM is calibrated to UN demographic and IMF fiscal data and features region-specific productivity catch up.
[15] Moreover, if other countries follow the U.S. lead, the policy might boomerang as less capital flows into the U.S. than would otherwise have occurred.
[16] I.e., RS argue for deficit finance based on low prevailing safe rates using a model in which safe rates don't arise. Their implied assumption of a constant risk premium is belied by the data.
[17] For instance, even if increased savings within the OECD were a major driving force of the alleged secular stagnation, the U.S. seems to be an exception that might call for different policy conclusions. Over the past seven decades, starting with the fifties, the U.S. net national saving rate has averaged 13.6, 14.7, 11.1, 7.2, 5.6, 3.0, and 3.0 percent.
[18] The Rybchinski Theorem tells us that under free trade, nothing necessarily pins down the location of capital and, thus, a country's or region's current account.

ignoring non-OECD countries, RS ignore China, India, the Middle East, and Sub Saharan Africa. Collectively, these regions account for one third of current world output. Moreover, the UN projects that their collective population will rise by almost 3.5 billion by 2100. Combined with even slow catch-up productivity growth, this demographic trend will, by GGM's reckoning, leave these RS-excluded regions with two thirds of 2100-world output. Their growth will also produce an enormous demand for capital. This is why the GGM shows the world interest rate rising by 200 basis points through mid-century and remaining high thereafter. Hence, RS can stop worrying about secular stagnation. There is likely to be ample global demand for capital from the regions they failed to model.

Warning to Politicians

The level of safe interest rates reflects, among many other things, people's desire for insurance and the precise structure of government-engineered risk mitigation and risk generation. Return to B's model and conjure a government that drives the safe rate far below zero by randomly redistributing among the elderly, leaving a large fraction impoverished. Yet this malevolent government slavishly services its bonds. Consequently, government bonds become the only way to limit risk – both government-redistribution risk as well as investment risk. In this policy setting, the addition of even a risky Ponzi scheme, effected through the sale of bonds, could be welfare improving. But, clearly, the way for the government to mitigate risk and raise all cohorts' welfare is to stop producing risk. More generally, we need to understand precisely why safe rates are low and whether we can expect them to stay low before suggesting further leveraging the prosperity of America's posterity. In closing, a warning to politicians. *Do No Harm* should be your watchwords, particularly when it comes to administering higher doses of an economic cure-all that appears to be gravely imperiling today's and tomorrow's children.

References

Altig, David, Alan Auerbach, Elias Ilin, Laurence Kotlikoff, and Yifan Ye. "Marginal Net Taxation of Americans' Labor Supply." forthcoming, Boston University, (2020).

Benzell, Seth G., Laurence J. Kotlikoff, Guillermo Lagarda, and Yifan Ye. "Simulating US Business Cash Flow Taxation in a 17-Region Global Model." No. dp-312. Boston University, (2018).

Blanchard, Olivier and Summers, Laurence, eds., ``Evolution or Revolution? Rethinking Macroeconomic Policy after the Great Recession.'' *MIT Press*, 2019.

Blanchard, Olivier, ``Public Debt and Low Interest Rates." *American Economic Review*, April, 109(4), (2019): 1197-1229.

Blanchard, Olivier Jean, and Philippe Weil. *Dynamic efficiency, the riskless rate, and debt Ponzi games under uncertainty*. No. w3992. National Bureau of Economic Research, 1992.

Bohn, Henning.``Risk Sharing in a Stochastic Overlapping Generations Economy." mimeo, University of California at Santa Barbara, (1998).

Demange, Gabrielle. ``On Optimality of Intergenerational Risk Sharing.'' *Economic Theory*, 20(1), (2002): 1-27.

Diamond, Peter A. "National debt in a neoclassical growth model." *The American Economic Review* 55, no. 5 (1965): 1126-1150.

Dobrescu, Loretti I., Laurence J. Kotlikoff, and Alberto Motta. "Why aren't developed countries saving?" *European Economic Review*, 56(6), (2012): 1261-1275.

Evans, Richard, W. "Public Debt, Interest Rates, and Negative Shocks." this session, (2020).

Evans, Richard W., Laurence J. Kotlikoff, and Kerk L. Phillips. ``Game over: Simulating unsustainable fiscal policy.'' No. w17917. National Bureau of Economic Research, (2012).

Hasanhodzic, Jasmina. ``Simulating the Blanchard-Summers Conjecture in a Multi-Period Life-Cycle Model.'' this session, (2020).

Kotlikoff, Laurence J. "Generational policy." *Handbook of public economics*, 4 (2002): 1873-1932.

Krueger, D. and F. Kubler. "Pareto-Improving Social Security Reform when Financial Markets are Incomplete." *American Economic Review*, 96, (2006): 737-755.

Rachel, Lukasz and Lawrence Summers. ``On Falling Neutral Real Rates, Fiscal Policy, and the Risk of Secular Stagnation." *Brookings Papers on Economic Activity*, presented March 2019, forthcoming 2019.

Samuelson, Paul. ``An Exact Consumption Loan Model of Interest with or without the Social Contrivance of Money.'' *Journal of Political Economy*, 66, (1958): 467-482.

Shiller, Robert. ``Social Security and Institutions for Intergenerational, Intragenerational, and International Risk Sharing," *Carnegie-Rochester Conference on Public Policy*, 50, (1999): 165-204.