Rentier-Based Finance-Led Macroeconomies:

Keynesian or Classical in the Short-run, but Unsustainably

Debt Dependent and Minskyan in the Long-run

Allied Social Science Association Meetings
January 2007, Chicago, IL
Revised Jan 14, 2008 and March 18, 2013 (Typos and Prologue)

Ron Baiman
Chicago Political Economy Group
Chicago, IL
Email: rbaiman@cpegonline.org

Mel Rothenberg
Chicago Political Economy Group
Mathematics Department
University of Chicago
Email: mrothenberg@cpegonline.org

Prologue[1]

Since the official, November 2007, beginning of the "Lesser Depression" heterodox economists have pointed out that professional economists can be divided into those who foresaw and warned of the coming crises and those who did not (Keen, 2011, Chap. 2). Prominently visible in the later camp were some of the "Bezemer 12" including Keen, and in the U.S.: Baker, Godley, Roubini, Shiller, Schiff, Janszen and Hudson, highlighted in Bezemer (2009). This is useful to point out as it serves notice that *the vast majority of mainstream or Neoclassical (NC) economists had their "heads in the sand" as it were, on the most important economic issue of our times.*

We say NC, because most "radical" political economists (in the U.S. members of the "Union for Radical Political Economics" (URPE)), had no doubt that it was just a matter of time before the financial bubble collapsed. And *we wish to emphasize that CPEG founding members were in this later group.*

Baiman and Rothenberg were leading seminars at the Univ. of Illinois at Chicago's Center for Urban Economic Development (UICCUED) from 2001-2004 on Godley's work and predictions of a U.S. macroeconomic collapse and developed a close relationship with Alex Izurieta who worked with Godley at the Levy Institute the time. We also, with fellow Illinois Committee for New Priorities (CNP) Board members including Joe Persky, organized a speaking engagement to promote Godley's analysis in a broadly advertised public panel at which Baiman very explicitly warned about pending macroeconomic collapse (this panel also included Jered Bernstein from EPI who spoke on other issues).[2] Baiman and Rothenberg then submitted (earlier drafts of) this paper: "Rentier-Based Finance-Led Macroeconomies: Keynesian or Classical in the Short-run, but Unsustainably Debt Dependent and Minskyan in the Long-run," to a number of journals (it was rejected), and Baiman gave a presentation of it at a talk entitled: " Accumulation Through Dispossessing: Modeling the New U.S. Rentier Capitalism" at the URPE sessions of the American Economic Association meetings in Chicago in January 2007.

Finally, by February of 2008, while working at Illinois Department of Employment Security (IDES), Baiman got into serious trouble with senior administrators for circulating a (confidential) paper to the Deputy Director of IDES, the Director of Research at the Illinois Department of Revenue, and to Joe Persky who was then serving on the Illinois Governor's Council of Economic Advisors, that analyzed historical and contemporary patterns of unemployment claims data to show *that Illinois was already in a recession.* The paper was titled: "Composite Co-Incident Indicator Gives 93% Probability of Illinois Economic Recession Beginning in 2007:Q3." We expect that many other non-NC economists in the U.S. and other countries have similar stories to tell about that period.

[1] Written March, 2013.

[2] This was the same CNP that was critically instrumental is organizing the public anti-war panel at which then Illinois State Senator Barak Obama came out against the Iraq war. This talk got a lot more subsequent publicity!

Abstract

We construct a "Rentier-Based Finance-Led" (RBFL) macroeconomy by adding "outside debt" in the form of household real-estate home equity and consumer credit borrowing, government taxing and spending, and exports and imports, to an "inside debt" closed (national economy) Post-Keynesian macro model developed by Lavoie and Godley (2000) and reformulated by Taylor (2004), and combine it with an explicitly class-based finance-led growth model developed by Boyer (2000) . We start with Taylor's formulation and add outside debt, government, and trade, and reformulate equity growth as capitalized profits along lines suggested by Boyer. We find that "Fordist" macroeconomies generally support sustainable and broad based income and output growth, whereas RBFL macroeconomies tend toward slower growth and dependency on unsustainable debt accumulation and inequitable income distribution. We then largely apply Taylor's line of analysis in an attempt to incorporate recent trends in the U.S. economy. We find that to the extent that the U.S. economy has become an RBFL economy, it is in danger of becoming a "Minskyan" macroeconomy that is dependent on unsustainable long-run debt accumulation.

Key words: Macroeconomics, Monetary Economics, Finance, Keynesian, Post-Keynesian, Marxist, Finance, Debt, Minskyian, Rentier, Fordist, U.S. Economy

Introduction

In the following we construct a "Rentier-Based Finance-Led" (RBFL) macroeconomy by adding "outside debt", government taxing and spending, and exports and imports, to an "inside debt" closed (national economy) Post-Keynesian macro model developed by Lavoie and Godley (2000) and reformulated by Taylor (2004), and combine it with an explicitly class-based finance-led growth model developed by Boyer (2000) . We start with Taylor's formulation and add outside debt, government, and trade, and reformulate equity growth as capitalized profits along lines suggested by Boyer. We then largely apply Taylor's line of analysis in an attempt to incorporate recent trends in the U.S. economy.

We find that to the extent that the U.S. economy has become an RBFL economy, it is in danger of becoming a "Minskyan" macroeconomy that is dependent on unsustainable long-run debt accumulation.

An Inside-Money Business Debt-Led Macroeconomy

We start with the following firm and household flows of funds rows in Taylor p. 273-274, that are based on a Lavoie and Godley (2000) Post-Keynesian Business Debt and Growth model.
Below we reproduce Table 8.2 and 8.3 in (Taylor, 2004, p. 274-5) as Table 1 and Table 2:

Table 1: A SAM for a Post-Keynesian Growth Model

(All variables scaled by the value of capital stock)

	Current expenditures				Changes in claims				
	Output costs (1)	House-holds (2)	Firms (3)	Banks (4)	Invest-ment (5)	Bank assets (6)	Bank liabs. (7)	Firms' equity (8)	Totals (9)
(A) Output uses		γ_h			g				$\underline{u}$
Incomes									
(B) House-holds	$(1-\pi)\underline{u}$		δ	$j\lambda$					ξ_h
(C) Firms	$\pi\underline{u}$								ξ_f
(D) Banks			$j\lambda$						ξ_b
Flows of funds									
(E) Household		σ_h					$-\lambda\hat{M}$	$-P_vV'/PK$	0
(F) Firms			σ_f		$-g$	$\lambda\hat{L}$		P_vV'/PK	0
(G) Banks						$-\lambda\hat{L}$	$\lambda\hat{M}$		0
(H) Totals	$\underline{u}$	ξ_h	ξ_f	ξ_b	0	0	0	0	

Definitions and Notation

$\underline{X}$ or $\bar{X}$ means X scaled by capital stock, $\underline{X}=X/PK=\bar{X}$

$\lambda=L/PK=M/PK=\underline{L}=\underline{M}$, L=Loans outstanding, M=money supply,

′=time derivative, ^ =log time derivative=time rate of growth.

$$\delta = (1-s_f)(r-j\lambda)$$

$r=\pi\underline{u}$, $\underline{u}$ is net product per unit of capital, and π is the share that goes to profit, r the profit rate, s_f is firm saving rate out of total income, j is interest rate.

Table 2: Balance Sheets for a Post-Keynesian Growth Model

Households		Firms		Banks	
Assets	*Wealth*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
M	Ω	*qPK*	*L*	*L*	*M*
P_vV			P_vV		

Here q is Tobins q, b y definition Ω=qPK is the measure of household wealth, because capital is the only primary asset, hence $\underline{\Omega}$ =q. (later we will introduce a more complex notion of wealth)

Taylor assumes: a) a pure credit Wicksellian banking system with money held by households (*M*) as its liability and loans to firms (*L*) as its asset, b) a pre-determined real interest rate on both money and loans is *j*, c) that firms have zero net worth and that the asset value of their capital stock, *qPK*, is exhausted by their outstanding loans and the value of their equity P_vV .

Table 1 is a "Social Accounting Matrix" (SAM) for a closed economy in which all entries are scaled to the overall value of capital stock *PK* . Row (A) states that household consumption γ_h plus business investment g equals capacity utilization u. Column (1) states that overall income, that equals capacity utilization u, is split between household labor income: $(1-\pi)u$ and firm profit income πu , where π is profit share. Columns 2-4 disaggregate total expenditures and savings by Households, Firms, and Banks whose total incomes equal (ξ_h, ξ_f, ξ_b), respectively. Columns 5-8 are flows of funds that net to zero. Rows B-D show disaggregate total income flows that total to (ξ_h, ξ_f, ξ_b) equal to the expenditure flows.

σ_h is "real" household saving that is equal to total household income minus total household consumption: $\sigma_h = \xi_h - \gamma_h$, s_h is household savings out of total household income ξ_h, and γ_h is household consumption out of wealth increases as measured by Tobin's q (after division by PK) and income: $\gamma_h = (1 - s_h)\xi_h + \Phi q$. Similarly, σ_f is "real" firm savings equal to total firm income ξ_f minus firm interest payments to banks $j\lambda$ and dividend payments δ to households (see "Definitions" at bottom of table): $\sigma_f = \xi_f - \delta - j\lambda$, where s_f is firm savings out of "retained earnings" $r - j\lambda$ so that $\sigma_f = s_f(r - j\lambda)$ where $\xi_f = r$. The rest of retained earnings go to households as dividend payments δ. Rows E-G and columns 6-8 are a "Flow of Funds" table showing how households, firms, and banks dispose of their savings where household deposits of savings in banks $-\lambda\hat{M}$ result in incremental increases in money as:

$$-\frac{L'}{PK} = -\frac{L}{PK}\frac{L'}{L} = -\frac{L}{PK}\frac{M'}{M} = -\lambda\hat{M}$$

In Row (E) Household deposits are withdrawals from household savings to become Bank Liabilities. In Row (G) these are recorded for Banks as positive Liabilities that are withdrawn when lent to firms. These loans are positive funding infusions for Firms in Row (F).

All of the flow variables in Table 1 are assumed to be scaled to *PK*. Firms save a proportion s_f of their income net of interest payments $r - j\lambda$. Their other sources of funds are new borrowing $\lambda\hat{L}$ and $P_v V'/PK$ issuance of equity, or new shares times equity prices. A working hypothesis is firms finance a share X of their capital formation with new shares, so that $P_v V'/PK = Xg$. With $\sigma_f = s_f(r - j\lambda)$, row (F) in the SAM can be restated as (Taylor, p. 273, equation (17)):

(1) $s_f(r - j\lambda) + \lambda\hat{L} - (1 - \mathrm{X})g = 0$

All terms are ratios to the value of capital stock PK including household wealth which is, in the simplified "inside money" accounting system upon which these are based, the sum total of wealth in the system (the value of the capital stock equals the sum of equity investment and bank loans all coming from households), so that: $\Omega = qPK$, making household wealth Ω divided by the value of capital stock PK equal to q. Note that as all of firm retained earnings that are not saved go to housholds as dividend payments, s_f is one minus the dividend payout ratio: $s_f = 1 - \frac{\delta}{(r - j\lambda)}$.

Since r and g are determined ("exogenously") on the real side of the model, this Post Keynesian specification presumes that the supply of loans to business $\lambda\hat{L}$ (= $\lambda\hat{M}$) for "inside money" in this system) is endogenous. We maintain this assumption when we include "outside money" in our modifications below, as "outside money" funds can be sourced from accumulated wealth and foreign investors without regard to increased deposits from current income ($\lambda\hat{M}$). Using row and column substitutions in the SAM and the banking system's flow of funds (G) we get a consolidated version (with r cancelled out) of (Taylor, p. 273, equation 18):

(2) $s_h((u - s_f(r - j\lambda)) - \Phi q - \mathrm{X}g - \lambda\hat{M} = 0$

recall:, $\gamma_h = (1 - s_h)\xi_h + \Phi q$ the first term being spending out of income, the second spending out of wealth. This states that savings out of household (labor, dividends, and interest) income less consumption out of wealth, equals increased equity and deposits. Note that consumption out of

increases in equity wealth q changes reduces *real savings* by $-\Phi q$, i.e. reduces unused production capacity, by reallocating economic resources toward satisfying current consumption.

When (1) and (2) are added together we get the following economy-wide equation (Taylor, equation (19), p. 275) with $r = \pi \underline{u}$ and $s_f = s_f(1-s_h)$:

(3) $$\left[s_f(1-s_h)\pi + s_h\right]\underline{u} - s_f(1-s_h)j\lambda - \Phi q = g^S$$

Where we have set $g^s = g$ to indicate that these equations determine funds *available*, not funds *demanded*, for investment.

This model can be extended by adding: a) household borrowing based on real estate valuations, b) household non-real estate related consumer credit based borrowing, c) the impact of profitability on firm equity values, d) the impact of export production on capacity utilization, e) imports, f) an export effect on real savings, g) government taxes and spending, h) government borrowing, i) the impact of profitability on investment, and j) firm "outside" borrowing for investment.

We begin by adding the two household borrowing affects. The magnitudes of the consumption/real savings impact of these affects are all related to: a) the amount of "outside money" being borrowed or invested, and b) the class distribution of inter-household and inter-firm "inside money" creditors and debtors. In the later case, lending by wealthy households to poorer households is presumed to have a net positive demand affect as poorer households will consume more of their income than wealthier households, and similarly interest and other costs of borrowing and gains from lending are assumed to have a net negative impact on demand. In the same way, lending by "cash-rich" firms to cash-poor

firms is presumed to stimulate investment, and borrowing costs to dampen it.

We specify these effects as follows:

a) Household *real spending* on currently produced goods and services, induced by increased spending power from rising real estate wealth R′ accessed through home equity loans or realized capital gains, that will on balance (see above) *change (reduce) real saving* by:

$-\phi\, R'/PK = -\phi \underline{R'}$

And *increase* real saving (by reducing spending), because of increased payments to "outside creditors", and "wealthy inside creditors" who save τ of it.

Note that from equation (2), households have financial savings equal to s_h of their total income, so that an income reduction of j$\underline{R}$ due to interest payments, will *increase real* savings by $\tau j \underline{R}(1-s_h)$.

b) Household extra spending and extra costs induced by increased *non-real estate related* borrowing $\underline{B_h}'$ (credit card and other non-real estate related household borrowing) means *current real savings is changed by* $-\xi \underline{B_h}'$.

As in a), the more that this borrowing is sourced from "outside" lending and "wealthy" "inside" creditors, the more of a positive impact on *real savings* it will have: $\omega j \underline{B_h}'(1-s_h)$.

c) Since we have "opened up" the closed "inside money" system of equations (1) to (3), we can no longer assume that overall household wealth equals the value of capital stock: $\Omega = qPK$ Rather, we distinguish between household "equity" wealth and household real estate wealth. Following Boyer (2000) we redefine household equity wealth as capitalized future returns times Tobins's q: thus $\Omega=(q+q^o)\pi u/j$, capturing the link between firm profits and household equity and replacing q with $\overline{\Omega} = (q+q^0)\pi u /j$ in (3) above. We have added q^0 as "outside" and "inside" investment may change the value of q regardless of domestic profitability. Lavoie and Godley (2000) , for example, model q as a function of "inside" savings and payout ratios.

Imports will *increase real domestic savings* , i.e. unused domestic productive capacity, as they free-up economic resources. But *exports* will *reduce real domestic saving* even as they add to income and *financial saving* from domestic production.

d) In order to capture all this we define an overall capacity utilization variable or rather redefine $u=u_0 +E$, where u_0 is the net product utilized domestically (the old u) and E are exports.

e) And assume that imports are dependent on the income generated from domestic production so that imports per unit of capital are equal to $\varepsilon\underline{u}$

f) And that exports cause a reduction in real savings (depending on their domestic content share) equal to:

$-e\underline{E}$

Finally *government* taxing and spending will reduce household savings leakage through the "balanced budget multiplier" mechanism , and increased government borrowing through deficit financing.

g) Assuming: a uniform tax rate t on both household and firm income, that government spends everything that it collects in taxes tu rather than saving: $t(r - j\lambda)s_f$ as firms would have, or: $t(\bar{u} - s_f(r - j\lambda))s_h$ as households would have. Adding together these two additional streams of spending we find that government taxing and spending results in the following *real savings* reduction:

$$-t\left[(s_f(1-s_h)\pi + s_h)\underline{u} - s_f(1-s_h)j\lambda\right]$$

Here we assume that government spending out of tax revenue generated through, real estate and equity, income derived from wealth increases or capital gains would have equaled the household spending generated because, as household's take out home equity loans or cash out capital outsets (that are not put into retirement funds) in order to *spend* this money, *all* of this income would have been spent had it not been taxed. We also assume, for simplicity, that tax rates on capital gains equal those on other forms of income.

h) Finally government spending from increased borrowing $\underline{B_g}'$ will reduce *real savings* by:

$\underline{B_g}'$.

And to the extent that this is based on borrowing of "outside money" (from abroad or from domestic wealth accumulations that are unrelated to current income flows), this will increase the interest rate costs of Government debt resulting in a "leakage" from public spending equal to:

Adding on these adjustments results in the following modification of the savings function (3) gives:

$$(4) \qquad \begin{aligned} g^s &= (1-t)\left[((s_f(1-s_h)\pi + s_h)\underline{u} - s_f(1-s_h)j\lambda\right] - \Phi(q+q')\pi / j - \phi\underline{R}' \\ &+ \tau(1-s_h)j\underline{R}' - \xi\underline{B_h}' + \omega(1-s_h)j\underline{B_h} - \underline{B_g}' + \theta jn\underline{B}_g - e\underline{E} \end{aligned}$$

On the investment side Taylor specifies:

$$(5) \qquad g_0 + \beta\bar{u} + \eta q - \psi j\lambda = g^i$$

Where g_0 is autonomous investment and β, η, ψ respectively reflect the impact of output, wealth, and inside borrowing on investment. To this we: explicitly specify equity and interest rate impacts on firm investment by replacing q with capitalized equity value as in c) above, and add a *firm* borrowing and spending affect from business loans of credit sourced *from outside of current domestic income flows* (borrowing from abroad or from domestic wealth accumulations that are unrelated to current income flows) and from cash rich firms to cash poor firms (see above). This is a source of private sector funding that has opened up with the deregulation of global capital flows and the subsequent massive increases in international financial speculation and large increases in real international investment.

i) We capture capitalized equity value, profit, and interest affects on firm investment which affect its retained earnings, and cash raising (from equity and borrowing) capabilities, by (as we did for (3) above) replacing q in (5) with:

$$\overline{\Omega} = \frac{(q + q^{o})\pi\overline{u}}{j}$$

j) We assume that firm *outside borrowing* and spending on real investment will increase investment spending by:

$$\kappa \underline{B}'_{f}$$

and increase firm debt burden from *outside borrowing* thus changing (reducing) cash flow and investment by:

$$-\sigma j \overline{B}_{f}$$

Note that these investment equation coefficients will also be effected by *the extent* to which firms use retained earnings to make *real domestic* investments.

These modifications result in the following investment equation:

(6) $$g_{0} + \beta\overline{u} + \eta(q + q^{o})\pi\underline{u}\ /\mathrm{j} - \chi j\lambda + \kappa \underline{B_{f}}' - \sigma j \underline{B_{f}} = g^{i}$$

$$= g_{0} + \beta\overline{u} + \eta\overline{\Omega} - \chi j\lambda + \kappa D(B_{f}) - \sigma j \underline{B_{f}}$$

We then have our main equation:

(7)

$$g^i - g^s = A\underline{u} + B$$
$$B = B_0 + B_1$$

Where $A = (\beta - \varepsilon) + (\eta + \Phi)(q + q^o)\pi / j - (1-t)(s\pi + s_h)$

$$B_0 = c\lambda + G\underline{R} + K(\underline{B_h}) - \theta jn\underline{B_g} - \sigma j\underline{B_f} + e\underline{E} + g_0$$

$$B_1 = \xi\underline{B_h'} + \underline{B_g'} + \kappa\underline{B_f'} + \phi\underline{R'}$$

$c = j(s(1-t) - \chi) > 0$, $G = j\tau(s_h - 1) < 0$, and $K = j\omega(s_h - 1) < 0$ where

β= investment demand coefficient of u

ε=import demand coefficient of u, I=εu

η=investment out of wealth

Φ=spending out of wealth

χ=damper effect of interest on deposits on g^i

s=firm saving ×household spending= $s_f(1-s_h)$

t= tax rate

e=savings damper from exports E

θn=leakage from public spending

σ=leakage from firm borrowing

τ=saving coefficient of interest paid to outside and wealthy inside creditors

ϕ =spending coefficient of rising real estate wealth

ξ=savings damper from non-real estate borrowing

ω=savings effect of interest collected by non real-estate creditors

κ=coefficient of increase in outside borrowing going for investment.

PROPERTIES OF u NEAR EQUILIBRIUM

The evolution equation for u is $\underline{u}'(x) = \chi(x)(g^i - g^s)(x,\underline{u})$ where $\chi(0) = 0$ and $\chi' > 0$. (Taylor p 389), where x is time. Thus x=0 is not a stable equilibrium point, and at any other equilibrium point x $g^i - g^s = 0$ and for it to be stable A<0. Thus at stable equilibrium A$\underline{u}$+B=0 and thus $\underline{u} = B/-A$.Since A<0, $\underline{u}$ >0 by assumption, B>0 .

Note that for any variable x

$\partial \underline{u} / \partial x \geq 0 \Leftrightarrow -A\partial B / \partial x + B\partial A / \partial x \geq 0 \Leftrightarrow B\partial A / \partial x \geq A\partial B / \partial X \Leftrightarrow \underline{u}\partial A / \partial x \geq -\partial B / \partial x$.

We now examine the effect of altering a parameter near an equilibrium point:

Case I. u as a function of taxes t..

$\partial B / \partial t = -\lambda js$ and $\partial A / \partial t = s\pi + s_h > 0$, hence the condition that u increase with an increase in taxes is $\underline{u} \geq \lambda js/(s\pi + s_h) = \lambda j/(\pi + s_h / s)$. This is true if $\underline{u} > \lambda j / \pi$. Since normally $\pi > j$ it is sufficient that $\underline{u} > \lambda$. In a Fordist regime this is likely to be true hence in a Fordist regime raising taxes within the limits constrained by stability raises net product.

Case II. u as a function of interest rates

$\partial A / \partial j = -(\eta + \Phi)(q + q^o)\pi / j^2$, Suppose we ignore the effects of household borrowing, government borrowing, and outside firm borrowing, which are negligible in a Fordist regime . This replaces B by $B_F = c\lambda + e\underline{E} + g_0$ in our formuli. Then $\partial B_F / \partial j = (s(1-t) - \chi)\lambda$. Therefore

$\partial \underline{u} / \partial j \geq 0 \Leftrightarrow \underline{u} \leq j^2 (s(1-t) - \chi)\lambda / (\eta + \Phi))(q + q^o)\pi$. For this to be true $(s(1-t) - \chi)$ must be > 0, which we now assume as under Fordist regimes real investment was largely out of firm retained

earnings rather than from borrowing (Nell, 1998). Then the previous inequality is equivalent to $1 \le j(s(1-t)-\chi)\lambda/(\eta+\Phi)\underline{\Omega} \Leftrightarrow (\eta+\Phi)\underline{\Omega} \le j(s(1-t)-\chi)\lambda$. This will be the case when the inside firm borrowing is large enough with respect to wealth. In this case we have net product rising with increasing interest rates. Otherwise it will fall, which is the normal assumption (especially with relatively low levels of borrowing as noted above).

In the general case when we consider all forms of borrowing the inequality $\partial \underline{u}/\partial j \ge 0$ depends on the relationships of all the borrowing data and parameters and has no clean verbal description.

Case III. u as a function of household savings.

$\partial A/\partial s_h = -(1-t)(1-\pi s_f)$ $\partial B_F/\partial s_h = -(1-t)j\lambda s_f$, hence $\partial \underline{u}/\partial s_h$<0 in the Fordist case.

$\partial B/\partial s_h = -(1-t)j\lambda s_f + j\tau \underline{R} - j\omega \underline{B_h}$. Thus in the general case $\partial \underline{u}/\partial s_h \ge 0$ only when the income impact of interest payments on real estate equity loans dominates all other terms.

Case IV. u as a function of firm saving s_f

$\partial A/\partial s_f = -(1-t)(1-s_h)\pi$ and $\partial B/\partial s_f = j(1-s_h)(1-t)\lambda$ hence $\partial \underline{u}/\partial s_f \ge 0 \Leftrightarrow j\lambda \ge \underline{u}\pi$ which is highly unlikely (especially under a Fordist regime). Thus increased firm saving lowers output.

Case V. u as a function of the profit share π

Since $\partial B/\partial \pi = 0$, $\partial \underline{u}/\partial \pi \ge 0 \Leftrightarrow \partial A/\partial \pi \ge 0$. Now A= $A_0\pi + A_1$ where $A_0 = (\eta+\Phi)(q+q')/j - (1-t)s$ and $A_1 = \beta - \varepsilon - (1-t)s_h$ and $\partial A/\partial \pi = A_0$. Since by stability A<0. $A_0 \ge 0 \Rightarrow A_1 < 0$ and $A_0\pi < -A_1$ hence whether $\partial \underline{u}/\partial \pi \ge 0$ depends on the particular coefficients η,Φ,β, ε,etc and this is true in the Fordist as well as the non-Fordist economy.

By the formula $\partial \underline{u}/\partial x \ge 0 \Leftrightarrow \underline{u}\partial A/\partial x \ge -\partial B_F/\partial x$ for any variable and the results of cases I-IV in a the Fordist economy u demand, is supported by:

a) High exports with high domestic content ($\underline{u}(\partial A/\partial \underline{E}) = 0 \geq -\partial B_F/\partial x = -e$).

b) High autonomous investment spending ($\underline{u}(\partial A/\partial g_o) = 0 \geq -\partial B_F/\partial g_o = -1$).

c) Low interest rates that reduce the negative impact of the firm borrowing in (c) and increase profitability of real investment per the standard Keynesian MEC calculation (Case II above).

d) High taxes supporting government spending (Case I above).

e) Low profit share in wage-led regimes (Case V above).

f) Low household savings out of income (Case III above). Household consumption out of income can be increased (and household savings out of income reduced) by reducing inequality of income *within labor markets* without affecting overall profit shares as lower income households have higher marginal propensities to consume. This could be an important means of demand stimulation in "profit-led" economies (Palley, 2003). Fordist economies were characterized by greater equality out of *labor* earnings which stimulated greater consumption than would otherwise occur out of increasing real earnings. Overall household savings were, however, generally greater as real household earnings were consistently increasing (Nell, 1998).

g) High levels of firms saving (Case IV above). In the U.S. during the Fordist period (1945- 1970 more or less), high business retained earnings were a major source of real investment, and low dividend payouts ($1-s_f$) and interest payments: ($j\lambda$) were more likely to be saved or used for speculative investments with less short-run demand stimulation impact.

h) Low import coefficient ($\underline{u}(\partial A/\partial \varepsilon) = -1 \leq -\partial B_F/\partial \varepsilon = 0$).

i) High domestic investment accelerator ($\underline{u}(\partial A/\partial \beta) = 1 \geq -\partial B_F/\partial \beta = 0$).

In contrast, to the extent that the inside debt and the four outside debt components of demand become important in B, and the "equity effect" stimulating both investment and demand becomes

more significant, the macroeconomy moves toward a "Rentier-Based Finance-Led" (RBFL) system. In this regime, the additional terms in B that are not in B_F become the primary sources for demand growth. These are:

a) Increased firm borrowing of "outside money" (as borrowing increases) that is not offset by the negative interest rate burden of this borrowing ($\underline{u}(\partial A/\partial \underline{B_f}) = 0 \geq -\partial B/\partial(\underline{B_f}) = \sigma j - \kappa\partial(\underline{B_f}')/\partial \underline{B_f}$). Note this kind of borrowing will be "repressed" in Keynesian international capital export control and domestic financial regulation regimes. Also we assume that high business profits under an RBFL system (see e) below) may allow firms to reduce rather than continue to expand their "inside debt" so that we have not included "inside debt" expansion as an RBFL factor. This may also be the case for firm borrowing of "outside money" as in the U.S. after the 2001 recession as opposed to the 1990's expansion, so that the "outside" *firm* debt factor may not always be significant in a RBFL regime. Therefore firm borrowing (inside or outside) may or may not be significant for long-term demand growth in an RBFL regime.

b) Household consumption out of increased home equity loans (as home equity lending increases) and capital gains from rising real estate values not offset by the interest burden of this borrowing ($\underline{u}(\partial A/\partial \underline{R}) = 0 \geq -\partial B/\partial \underline{R} = -G - \phi\partial \underline{R}'/\partial \underline{R}$) where G<0).

c) Increased household consumption out of consumer credit (as consumer credit increases) not offset by attendant interest rate costs ($\underline{u}(\partial A/\partial \underline{B_h})) = 0 \geq -\partial B/\partial(\underline{B_h}) = -K - \xi\partial \underline{B_h}'/\partial \underline{B_h}$) where K<0).

d) Increased government borrowing and spending of "outside and high income household" savings (as this increases) that is necessary because of lowering of taxes (particularly on high income and wealth households who are the largest source of tax revenue) and military expenses resulting from the (at least perceived) "costs of empire" particularly in the U.S. case

$(\underline{u}(\partial A/\partial \underline{B_g})) = 0 \geq -\partial B/\partial(\underline{B_g}) = \theta jn - \partial \underline{B_g}'/\partial \underline{B_g}$).

e) High equity value run-up (from domestic and/or foreign investment) that simulates both household equity driven demand and firm equity driven investment ($\underline{u}(\partial A/\partial \overline{\Omega}) = \underline{u}(\eta + \Phi) \geq -\partial B/\partial(\underline{\overline{\Omega}}) = 0$)

f) That more than offsets the negative impact of high profit rates on worker income and demand (Case V above) .

Note that not only does demand in RBFL macroeconomies rest on a different set of debt and profit factors, but these same factors often *reduce* demand support from what remains of the Fordist structures within these economies :

a) RBFL "free trade and capital mobility" policies reduce exports and domestic content and increases "outsourcing" and imports in high wage economies ($\underline{u}(\partial A/\partial \underline{E}) = 0 \geq -\partial B_F/\partial x = -e$ and $\underline{u}(\partial A/\partial \varepsilon) = -1 \leq -\partial B_F/\partial \varepsilon = 0$).

b) High profits in financial activities such as real estate and equity investment, and speculation on exchange rates and "derivatives" (themselves tied to the "privatization of risk" (see Eatwell and Taylor, 2000) that accompanies domestic and international financial deregulation) steers capital in RBFL economies away from *real* investment g_0 ($\underline{u}(\partial A/\partial g_o) = 0 \geq -\partial B_F/\partial g_o = -1$).

c) Financial deregulation and the accompanying "privatization of risk" and increase in influence of "bond markets" over central bank policies may lead to higher interest rate j slow growth policies as part of an increasingly militant anti-inflation central bank orientation as in Europe since the 1980's (see Case II above).

d) The same financial and "free market" influence may lead to tax cuts , especially for the wealthy investor class, and shrinking non-military public sector expenditures. Lower taxes will likely reduce

demand as indicated in Case I.

e) The general skewing of public policy in favor of capital is likely to raise returns to property and the profit share at the expense of the wage share and which may or may not reduce demand (see Case V).

f) The domestic accelerator β declines as the real economy "hollows out" from outsourcing and real productive (not real estate, retail, or mergers and acquisitions) investment decline ($\underline{u}(\partial A/\partial \beta) = 1 \geq -\partial B_F/\partial \beta = 0$).

By undermining much of the Fordist demand infrastructure in this way, RBFL economies tend to become more and more dependent on debt and rentier based financial activities with attendant polarization of incomes and macroeconomic fragility. The key characteristic of these economies appears to be a movement away from policies that support broad-based labor income growth, public sector spending, and real productivity enhancing investment, toward outsourcing and labor-share decline and stimulation of demand through household, government, (and in some periods) business debt accumulation.

In particular, accumulation through debt creation appears to be a more gradual advanced capitalist version of David Harvey's (2003) "accumulation through dispossession", as it involves a gradual transfer of working, and middle class, private and public assets through debt accumulation, rather than the more sudden and dramatic financial and economic collapse in the wake of IMF and WB restructuring programs typical in the periphery – though there may be a more precipitous "collapse" at the end of this process.

RBFL macroeconomies thus become dependent on increasing class polarization and public sector immiseration and environmental destruction that risk ultimately undermining general economic and social well-being and the capitalist class process itself.

"Debt Led" or "Debt Burdened"

We continue our analysis of the behavior of the short-term aggregate demand near equilibrium $g^i - g^s = 0$.

Taylor, points out (p. 275) that the partial derivative of $g^i - g^j$ near equilibrium by "inside debt" λ, which we calcukate from (7) ,will give (our result is modified by taxes which are not included in Taylor's derivation):

(8) $$\frac{\partial(g^i - g^s)}{\partial\lambda} = A\partial\underline{u}/\partial\lambda + c = A\partial\underline{u}/\partial\lambda + j(s_f(1-s_h)(1-t) - \chi)$$

Generally, normal firm borrowing of "inside money" from households to support business expansion resulting in "leakage reduction" during business cycle expansions will expand the economy (as households would have saved part of this) ($\partial\underline{u}/\partial\lambda \geq 0$ as $\underline{u}(\partial A/\partial\lambda) = 0 \geq -\partial B/\partial\lambda = -c$.

However, under an increasingly RBFL regime with low household savings (as household income growth stagnates or declines), and low taxes $\bar{u}$, certainly during cyclical upswings, will become even more "debt led" when the initial debt burden on investment is low.

The same will generally be true over time of the "outside debt" effect on aggregate demand as the partial of each of the four types of outside debt in (7) by time will give generic terms of the form:

(9) $QX'' - TjX'$

Where X is a type of outside debt (R, B_f, B_h, B_g), and T and Q are constants indicating the effects of incremental debt, and the stock of debt, respectively, on demand. Again, for a period of time, certainly during business cycle upswings, it appears reasonable to assume that there will be an acceleration of debt accumulation with a incremental impact on demand that exceeds the effect of increases in interest burden.

An acceleration of debt accumulation of at least some of these forms of outside debt appears to have occurred for a long period of time after 2001 in the U.S. (see Dumenil and Levy, 2004).

Thus RBFL regimes may, at least in the short-term, be "debt-led" as they become reliant on acceleration of debt accumulation for business cycle expansion. However, as can be seen from (7) and (8), its quite possible, especially under RBFL regimes as the burden of accumulated debt increases, that expansion may be become "debt burdened" especially during mid-cycle and declining growth periods. The key issue is whether the short-term debt accumulation that has occurred diminishes or

expands in the *long-run* relative to overall economic (capital stock) growth.

Debt Sustainability

Again, following Taylor (p. 276) we may ask whether intermittent, or regular, short-run dependence on debt accumulation leads to a long run expansion of indebtedness and RBFL characteristics over many business cycles.

Following Taylor (Equation 22 on p. 275) we can specify a condition for long-period debt sustainability for an RBFL regime for extended periods of time. Let $F = \xi \underline{B_h} + \underline{B_g} + k\underline{B_f} + \phi \underline{R}$ represent the impact of outside debt so that using the general relationship (as defined above) for any variable X (assuming stable *real* capital goods (real) prices):

$$\left(\frac{X}{PK}\right)' = \frac{X'}{PK} - g\frac{X}{PK}$$

Then we have:

(9) $$(\underline{F})' = B_1 - g\underline{F} = \xi \underline{B_h}' + \underline{B_g}' + \kappa \underline{B_f}' + \phi \underline{R}' - g\underline{F}$$

Assuming that the left hand side of (9), which is the rate of increase of overall outside debt as a share of total capital stock (total economic assets in this model), is itself stable (that is that as it grows, its rate of growth slows down), we may ask whether the derivative of the long term equilibrium debt growth =0 locus by output $(\bar{u})$ is positive or negative?

A positive, or upward sloping, total derivative of (9) = 0 by $\bar{u}$ will indicate that over the long term, outside debt expansion increases faster than debt reduction, resulting an unsustainable "Minskyan" RBFL macroeconomy.

It appears likely that in an RBFL economy, positively accelerating levels of "outside" debt captured by the term B_1 in (9) will exceed real capital stock growth times the *level* of outside debt $g\underline{F}$ especially if much of the outside debt is used to support financial asset growth and consumption of imports rather than real domestic production. It thus appears that in an RBFL macroeconomy of the type hypothesized in (7) long-term growth of outside debt as characterized by the partial of (9) by $\bar{u}$ is likely to be positive.

Using the term "Keynesian" for economies in which short-run effective demand stimulation will be multiplied in the long-run, and "Classical" for economies in which effective demand increases will stimulate output in the short-run but will have less impact in the long-run, this analysis suggests that RBFL economies will be "debt led" and Keynesian, or "debt burdened" and Classical, *in the short-run* per our considerations above, but will be unsustainably debt dependent, or "Minskyan", *in the long-run*. If the vertical axes are relabeled as stable "outside debt" (composite based on impacts), or:

$\left(\kappa \frac{B_f}{PK} + \phi \frac{R}{PK} + \xi \frac{B_h}{PK} + \frac{B_g}{PK} \right)$, these types of "Minskyan" macroeconomies are shown in the lower left and lower right graphs in Figure 1 below (reproduced from Taylor, p. 276, Figure 8.4). The upper graphs are economies with sustainable (declining) stable long-term debt curves.

With $\bar{u}$ on the horizontal axis and "outside debt" on the vertical axis, an upward sloping "stable outside debt" curve, and a more modestly upward, or downward, sloping short-run "outside debt" by $\bar{u}$ curve cutting this from below, a short-run boost in effective demand will cause an outward shift in the short-run effective demand curve and an equilibrium $\bar{u}$ that will result in *enhanced* "outside debt" rather than reduced outside debt over the long run. Expansion will continue over the long-run in such an RBFL regime but it will be a "virtual expansion" dependent on gradual but unsustainable "accumulation by dispossession" fueled by increasing and unsustainable household and government debt.

Figure 1 (Reproduced Figure 8.4 in Taylor (2004))

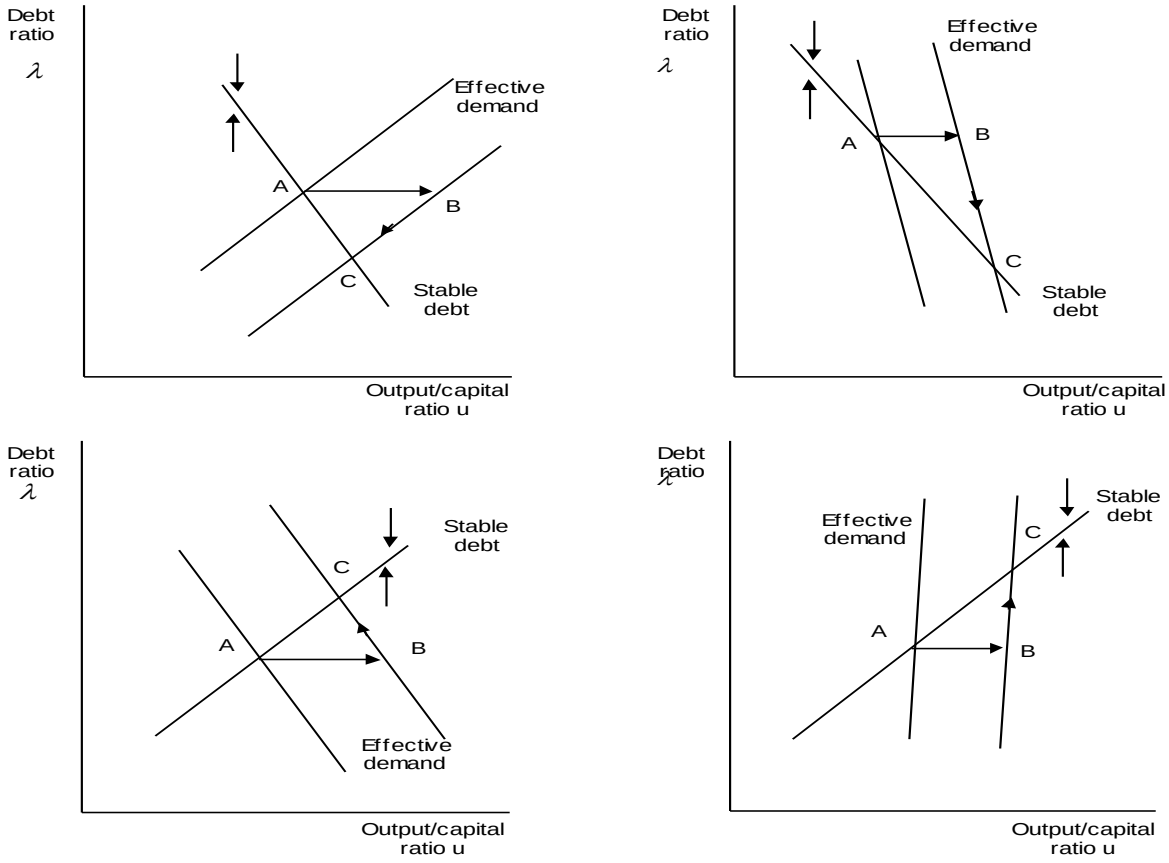

Figure 8.4: Long-run adjustment in a Post-Keynesian (Lavoie-Godley) growth model. Normal and Minskyan diagrams (upper and lower); effective demand is debt-led in the NW and SE; debt-burdened in SW and NE

Policy Conclusion

RBFL tending macroeconmies have evolved from Neo-Liberal policies that stress “individual choice” and the “rights” of “private” concentrated financial capital. Reversing these unbalanced, inequitable, and unsustainable, macroeconomic regimes will require “social choice” policies that address the public needs of people, especially workers and citizens. These policies will require large scale regulation of individual choice based market outcomes, especially with regards to financial instruments that represent abstract claims on, and control of, production.

The RBFL regime appears to be the latest and perhaps most destructive form of global capitalism, as it seems unstable and unsustainable in its most basic features. It appears to be, at least trending toward, a global capitalist “ponzi scheme” that may collapse without a radical rebalancing of real wages and trade and capital flows on a global scale. This trend is clearly linked to the concentrated political power of private finance and capital. Efforts to moderate or reverse RBFL trending economies are closely tied to efforts to reduce or eliminate private financial power, and by implication the power and control of capital over the means of production and claims on its output.

Bibliography

Bezemer, Dirk J. 2009. "No One Saw This Coming: Understanding Financial Crisis Through Accounting Models," Groningen, Faculty of Economics, University of Groningen, Netherlands.

Boyer, Robert. 2000. "Is a finance-led growth regime a viable alternative to Fordism? A preliminary analysis," *Economy and Society* 29(1) February 111-115.

Duminel, Gerard, and Dominique Levy. 2004. *Capital Resurgent: Roots of the Neoliberal Revolution*. Harvard University Press.

Eatwell, John and Lance Taylor. 2000. Global *Finance at Risk: The Case for International Regulation*. NY: Polity Press.

Harvey, David. 2003. *The New Imperialism*. Oxford University Press.

Keen, Steve. 2011. *Debunking Economics.* New York: Zed Books.

Lavoie, Marc and Wynn Godley. 2000. "Kaleckian Models of Growth in a Stock-Flow Monetary Framework: A Neo-Kaldorian Model," Working Paper 302, Jerome Levy Economics Institute, NY: Bard College.

Palley, Tom. 2004. “Class Conflict and the Cambridge Theory of Distribution,” in B. Gibson (ed.), *The Economics of Joan Robinson: A Centennial Celebration*, Cheltenham: E. Elgar Publishers.

Nell, Edward. 1998. *The General Theory of Transformational Growth: Keynes after Sraffa*. NY: Cambridge University Press.

Taylor, Lance. 2004. *Reconstructing Macroeconomics: Sturcturalist Proposals and Critiques of the Mainstream.* Harvard University Press.