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Capitalism's Recurrent Self-Criticism: An Evaluation of Bob Brenner's Global Economics

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A joyless irony of our time is that, just as Marxism as political doctrine has been declared dead, Marxist economics has never been better argued and empirically defended. Bob Brenner's *The Economics of Global Turbulence* is a good example. As an overview of the global economy from World War Two to the present it is unequalled.¹ Here is the historian at work, leaving few stones unturned and the exhaustive treatment makes for daunting reading. But an exploration of fifty years of global economy is not a stroll through the daisies and the serious reader comes prepared for a long hike.

In the same grand sweep, Brenner offers up a sophisticated treatment of the causes of economic growth and depression. Brenner's own explanation deploys a version of the classical theory of the falling rate of profit. For him, the fatal flaw of capitalism is still the anarchy of competition and the relentless drive to accumulate. This leads to a systematic over-accumulation of fixed capital that weighs down profits and triggers the quarter-century of poor performance in global capitalism he calls 'the long downturn'. His position is not based on logic alone, but on which explanation best fits the facts, with an historian's close attention to the timing of events and a geographer's eye for uneven and combined development.

The history of the long downturn

The historic divide between the post-war 'Golden Age' and the subsequent 'Long Downturn' is the crux of the story and the facts are not in dispute. The performance of global capitalism was much better between 1950 and 1973 than it was from 1973 to the end of the century.² All the indicators show this in striking terms: growth, productivity, wages, investment and profit all drop roughly by half from one epoch to the next (in terms of annual rates of change). The key to the drop-off in performance is the transition from high to low profits in the years around 1970. Meanwhile, global instability

¹ Its closest rivals are Armstrong et al. 1991 and Webber and Rigby 1996.
² Though it was not always so great during the Golden Age, see Webber and Rigby 1996.

increased, with sharp recessions in 1973-5, 1980-2, 1989-92 and 1997-8. Furthermore, the upswings were successively weaker, though the story varies from country to country.

Temporal contours of the global economy

The Golden Age of post-war capitalism is the subject of Brenner's Chapter 2. During this era, growth was robust and there was only a single, mild recession in the late 1950s. The United States was on top of the world with an overwhelming share of global industrial production, trade and financial assets. Germany and Japan came out of the Second World War in ruins and international trade and capital flows were at a low ebb. But both Western Europe and Japan underwent dramatic renewal, were rebuilt in the 1950s and were in full forward motion by the 1960s. Both grew through a vast expansion of manufacturing, relying on high levels of investment and export; Germany pushed ahead because of its stronger pre-war base and European location.

The Golden Age came down to earth between 1965 and 1973, as detailed in Brenner's Chapter 3. The United States was the first to stumble. Under pressure by lower-price goods from overseas competitors, US manufacturers saw their profitability fall by more than 40 per cent. German and Japanese costs per unit output were falling rapidly with technical improvements (due to rapid investment, borrowing and re-engineering), while wage levels had been severely checked by post-war conditions (labour gluts, repression of unions and general poverty). No one dreamed of the US losing its leadership in such core industries as autos, steel or computers and yet the early warning signs were there in American corporate complacency, low rates of investment and penetration of imports into the domestic market.

The almighty dollar, cornerstone of the post-war economy, got caught in the speeding wheels of commerce. As the competitive pinch threw US trade and payments balances into arrears, the dollar's high fixed exchange rate became a threat to US national interest (it made US goods more expensive than competitors'). Meanwhile, the eurodollar market was creating new money by means of unregulated bank-credit and the US government was overspending on the Vietnam War, adding to the global oversupply of dollars.

So Nixon cut the dollar loose and then abandoned fixed exchange rates altogether between 1971 and 1973. The dollar fell; the yen and mark rose. This helped the US bounce back in international trade by cheapening its exports and shifted the brunt of the profit-rate fall onto Germany and Japan. The latter was particularly hard hit, being the

worst exposed to rising world oil prices after the OPEC embargo. The world economy fell into deep recession from 1973 to 1975. The Long Downturn had begun and would persist over the next three decades.

Brenner's Chapter 4 details the travails of the 1970s, 1980s and 1990s. In the cyclical recovery of 1975-9, the United States appeared to clamber back atop the heap; but it had merely put off the day of reckoning. Profits were pushed up in nominal terms by price hikes and real wages sagged. Nevertheless, American business failed to undertake the hard work of reconstruction of its production methods and capital base. Inflation took flight, driven by oligopolistic pricing and loose money policies and real interest rates slid toward zero. Meanwhile, Japan and Germany restructured and retooled, coming back stronger than before with lower costs and higher quality goods. By the end of the decade, the squeeze on the US was worse than ever.

In the late 1970s, the US industrial core began to hollow out under the flood of imports and Americans discovered 'globalisation' with a vengeance. On one side, the new Japanese colossus stood astride the Pacific basin; on the other the Germans grabbed the top spot among international exporters. The Carter Presidency foundered in the middle. But, despite the recovery, profit rates continued to languish throughout the capitalist world, including German and Japan, and overall growth rates were sluggish.

Enter Margaret Thatcher, Paul Volcker, Ronald Reagan and the full assault of the capitalist class on the workers of Britain and America - and eventually around the world. Starting in 1979, the UK and US instituted austerity packages: tightening credit and interest rates, slashing social spending and cleaning out the capitalist stables through enforced depression. The downturn of 1979-82 rid the industrial base of excess capacity, drove out the weakest companies and disciplined the working class. Bankruptcies and plant closures cut like a scythe through the heartland of American industry. As unemployment reached levels not seen since the 1930s, unions were decimated, worker protections gutted and the bottom fell out of the wage structure. This cleansing laid the basis for the Reagan recovery of 1983-6, along with unprecedented government deficit spending and financial deregulation.

But Reagan and Volcker's policies, by combining tight credit and massive government borrowing, drove up interest rates and thus the dollar. With the dollar completely out of line with declining American competitive position, exports fell and imports rose even further, leaving mammoth trade deficits and widespread devastation of US manufactures. Something had to give, so the tripartite powers quietly negotiated the Plaza Accord of 1985. This devalued the dollar against the yen and the mark and staunched the bleeding US foreign trade accounts.

Both Japan and Germany got through the recession of 1980–2 with only a few bruises; the damage was mostly exported to the United States. But the Plaza Accord turned the odds against them. With its export machine running down and its asset values ballooning under the pressure of a strong yen, Japanese capitalists searched desperately for outlets for their surpluses. One was mass purchase of US treasury bills, another building scores of new overseas factories and the third was speculation on domestic financial and real estate markets. The Japanese bubble economy collapsed in 1991 and the country has been digging out from under the rubble ever since. A weak recovery in the mid-90s was brought to a shattering halt by the financial crisis that struck East Asia in 1997, leaving Japan with roughly \$1 trillion in bad bank loans (about 25 per cent of GNP).

Germany avoided financial excess by a firm austerity policy of high interest rates and budget balancing, which it imposed on the whole of Europe. This forced Europe to grow slowly, trailing in the wake of its international rivals throughout the 1990s. The Kohl government indulged in a brief burst of spending to seal German reunification after 1989, but quickly pulled back to squat on the 1992 Maastricht Agreement for a single European currency. The result was generalised austerity and high unemployment.

Reagan left his successor presiding over a new recession, 1989–92, which cost George Bush re-election. The new Democratic President faithfully continued his predecessors' policies, however: the Kohl formula for balancing the budget, the Volcker method of cranking down on credit and the Reagan approach to disciplining the working class (whose wages had enjoyed a slight uplift in the late 1980s). This, the third round of the 'employers' offensive', insured that the recovery of the 1990s would generate jobs without wage gains, inflation, or social spending. Austerity also meant that the United States would no longer serve as consumer of last resort for the export-bound nations of East Asia and Europe, leaving them to fight for shares of a reduced global market.

All this aided the recuperation of American corporate profits, which climbed back to respectable levels as the 1990s went along. Brenner's Chapter 5 therefore ends on a question: does the rise in profit rates signal a new phase of expansion, or will the economic typhoon blowing out of East Asia force the shaky structure of the global economy to its knees again?

Geographic dimensions of the global system

In one sense, as Brenner shows, the world economy is a single unit that moves in synchrony. It became increasingly unified over the

course of the last half-century as international trade and investment rebuilt global capitalism. But, as it did, competition diminished industrial profit margins, thanks to the widening and deepening of global production. But the global economy develops unevenly.

The story unfolds in sequence. In the first wave of post-war growth in the 1950s and 1960s, Japan and Germany outpaced the rest, overtaking the United States by the 1970s. The second wave brought rapid catch-up by the other large states of Europe (France and Italy) and the small states of East Asia (Korea, Taiwan, Hong Kong and Singapore), which hit stride in the 1980s. The third wave of China and Southeast Asia, along with a revived Mexico and Brazil, came on like gangbusters in the 1990s.

Japan and Germany, leaders of the first wave, began to feel the backwash of global expansion by the 1980s – much of it propelled by their own outward investment. Southeast Asian exports, dominated in post-Plaza dollars, cut into Japan's share of the American market. European integration promised greater markets for Germany, but the promise foundered in continental stagnation. For all their ability to generate capital, target investments, innovate and raise wages, Japan and Germany have not been able to shake their dependency on exports.

Brenner's strategy to simplify an immensely complex history is to let three countries, the US, Germany and Japan, stand for the whole (statistically these three dominate worldwide production and trade). With this simplification, it is easier to show how the different parts of the global economy bump and grind against each other. This has led some to think that he gives short shrift to the East Asian 'miracle'; but he gives it a quite extensive treatment in Chapters 4 and 5. Southeast Asia is crucial to the story of the long downturn because the rapid entry of new capital and competitors there makes it that much harder to solve the over-accumulation problem in the global system.

A striking deviation from the normal left treatment of globalisation is the secondary role assigned to transnational corporations. For Brenner the key units of the capitalist economy remain nation-states, even though their borders are increasingly transgressed by trade, competition, investment and production networks. As he notes, the ratio of overseas to domestic manufacturing investment by American corporations peaks in 1973 and then declines – not the usual perception of massive US 'offshoring' in recent years.

Working with national units also allows Brenner to foreground the role of currencies and their fluctuations. This runs against the common tendency to treat money as a secondary phenomenon that can be neglected until the 'real' economic picture has been drawn. It

also makes it easier to discuss the role of Keynesian and monetarist policy moves by national governments and to show how they have both fallen afoul of the turmoil in the global economy created by the long downturn.

The search for systemic causes

Chapter 2 of *The Economics of Global Turbulence* lays out the contending theoretical positions that might explain the record of capitalist stagnation. Brenner's main target is the wage-squeeze theory of falling profitability, but, along the way, he confronts the Keynesian account of insufficient overall demand, monetarism's orthodoxy of financial rectitude and Schumpeterian notions of technological change as the engine of growth. He also begs to differ from certain orthodox versions of Marx's theory of falling profits.

The falling rate of profit

Brenner's essay offers a sustained analysis of the long downturn based on Marx's theory of the falling rate of profit. It is not Marx's own version, in which the organic composition of capital and the diminishing total quantity of labour play the key role, but it is very much in tune with Marx's approach in that the primary force pushing capitalism into crisis is its *own dynamism*.

As we know from Brenner's work on the transition from feudalism to capitalism, the great achievement of capitalism is its drive for relative surplus-value, or revolutionising of the forces of production. Behind that lies capitalist ownership and the extraction of surplus-value from wage-labour, i.e. property and class relations, but, equally, the force of competition, market exchange and the thirst for riches (Marx's 'anarchy of capitals').

Accumulation takes the driver's seat in this model. The opening phase of the circuit of industrial capital is investment in new means of production. The closing of the circuit is the return of investment with profit accrued or accumulation of capital. Investment fuels growth by enlarging capacity and bringing new technologies on board. Profit rewards the capitalist and provides the key signal for further investment. If profit rates fall, capital is withheld from production and growth slows down.

Why would profit rates fall? By definition, the numerator in the profit equation, surplus-value, is outrun by the denominator, capital stock (measured in annual terms), i.e., $\pi = S/K$ decreases if $\partial S < \partial K$. In Brenner's account, the denominator is the culprit: capital stock is

bloated by the unco-ordinated attempts of capitalists to extend their markets. Individually, each one rationally invests in new plant and equipment, introducing cost-cutting techniques to outflank competitors; but the aggregate result is too great a build-up of capital stock in production.

This pits companies in an ever-fiercer competitive brawl. If output is not to exceed demand at prevailing prices (glutting markets), either prices must drop to sell excess goods (cutting into mark-ups over cost) or production slackens and capacity utilisation rates fall (raising unit costs). Either way, profit margins decline. This occurs regardless of the size of the market, propensity to consume, or rate of technical change. Such was the scenario, argues Brenner, as the Golden Age wore on in the developed countries and it only became worse with the addition of the newly industrialising nations in the midst of the long downturn.

Why doesn't the market reduce the quantity of capital and restore profits? The kicker is a collective 'failure of adjustment'. Old stocks of fixed capital are not junked fast enough to make way for new, more advanced equipment. Individual capitalists who see their profits fall do not act quickly to close factories and discard old machinery. Indeed, subpar companies have an incentive to remain in business because their obsolete fixed capital represents sunk costs (not current costs) and because they possess 'proprietary assets' (technology, customer base and supplier networks) acquired over long periods that keep competitors at bay.

Over-investment creates the profit undertow, failure to remove excess capital perpetuates low profit rates. It is this deadly combination of entry and exit that characterises the long downturn.

There are three main ways in which the rate of profit can recover. One is to reduce capital stocks through depressions that bankrupt firms and shutter factories (lowering K). Another is to cut wages with the help of high unemployment, offensives against unions and attacks on workers' rights (increase S). A third is to raise the rate of surplus-value by means of technical innovation and work intensification (increase S).

All three have played a part in the profit rebound of the 1990s. The depressions of the early 1980s and 1990s reduced capital stock. Job loss and labour surpluses, coupled with diminished union strength, drove down the wage rate. And US industry learned the lessons of 'lean production' from the Japanese, while introducing further innovations of the computer age. American manufacturing has come roaring back. But the *global* problem of over-accumulation still ensnares Japan and its Asian offshoots, Europe and ultimately the United States.

Beyond the wage-land
 Brenner's principal theoretical target is the wage-squeeze model of falling profits, as argued in Bowles, Gordon and Weiskopf's *Beyond the Wasteland*. Brenner calls this 'the contradictions of Keynesianism', but most readers will recognise it as 'Fordism', after the French regulation school. In this model, the balance wheel of post-war growth was the consumption of the working class, which allowed capitalists to sell what they produced. Mass consumption was made possible by wages that tracked labour productivity (the 'productivity wage'). But the balance wheels came off as tight labour markets and political mobilisation in the 1960s generated excessive wage demands that cut into corporate profits. The 'class accord' which had propped up the Golden Age fell apart.

Alas, this picture does not fit the facts of post-war growth and crisis, as Brenner shows at length in Chapters 2 and 3. First, the US class accord lasted only about a decade before corporations began attacking the gains of the working class and can hardly be granted to German and Japanese workers, who had suffered historic defeats in the 1930s and early 1950s. Second, falling profit rates arrived around 1965, well *before* the strike wave of the late 1960s. The latter were chiefly an effect of the employers' offensive to restore profits.

Third, the rate of profit fell across the advanced capitalist world despite marked differences among countries in the relative strength of capital and labour. Fourth, wages stagnated everywhere after 1970, but this did not trigger recovery from the long downturn. Something else was dragging down the system as a whole and that something was excess fixed capital. The case against wage-squeeze is summarised at the outset of Chapter 4.

We were all Keynesians then

Brenner next turns his guns on the financial and fiscal developments unleashed by the long downturn, also in Chapter 4. By the end of the 1960s, most states started running budget deficits while trade imbalances were growing, eurodollar credits ballooning and currency tensions exploding. In 1970 President Nixon declared that, 'We are all Keynesians now' (meaning deficit spenders) even as he undid Keynes's legacy in international finance, the Bretton Woods accord. Tensions were released by the freeing of exchange rates and subsequent recession, but re-emerged after 1975.

To jump-start the recovery, all the advanced capitalist countries let government deficits widen and eased up on credit controls. It worked for a time, but soon inflation got out of hand and profits refused to budge. Keynesian stimulation failed because the underlying conditions

were wrong. It was not a situation that called for mobilising unemployed resources but one of too many workers and too many capitals employed in extant lines of production. Soon, the capitalist leadership, led by Paul Volcker, Chair of the Federal Reserve Board, realised the dilemma and forced deflation and contraction. The world economy plunged into depression from 1979 until 1982.

The last gasp of Keynesian stimulation took place in the 1980s. The Reagan administration re-ignited growth by means of defence build-up, a sort of 'military Keynesianism', and loosened up on credit. A US boom ensued and helped pull the rest of the world along, as the United States absorbed a growing share of global exports.

But deficits in the US federal budget and international commodity trade reached record levels, the latter made worse by the strong dollar of the early Reagan years. The dollar devaluation of the Plaza Accord saved the United States but hit hard at Japan's export industries, so the Liberal Democratic government turned to loose credit as a means of stepping up domestic investment. The result was not the expected stimulus, but a plague of speculation, corruption and bad loans.

A spectre haunting the globe

After 1980, Keynesianism, the last resort of liberals and social democrats, gave way to monetarism, the panacea of bankers and reactionaries. Liberalism morphed into neoliberalism, the spectre that has stalked the globe for the last 20 years. It began in Britain and the US, but was quickly adopted by Germany and Japan and enforced on France, Mexico and a whole series of southern countries thereafter.

Ironically, the United States had to abandon strict monetarism in 1982 to avoid a general implosion of finance and to salvage dying industrial companies such as Chrysler. Reagan's deficit spending and financial deregulation set loose a paroxysm of borrowing and lending, however, which ended with the US as the world's largest debtor, the Savings & Loan debacle and the New York stock market crash of 1987. The appointment of Volcker-disciple Alan Greenspan to the Fed and the subsequent election of Clinton restored monetarist rectitude in the 1990s, with balanced federal budgets and interest rates high enough to maintain robust unemployment and low inflation.

Paradoxically, the regime of austerity went hand in hand with the rule of bankers and financiers and henceforth money was crowned King of Capitalism and set loose to conquer the earth. The gradual expansion of world trade and investment that had marked the steady return to globalism was overwhelmed by new torrents of finance capital in search of quick returns. Global turbulence became all the more visible as money rushed hither and yon, laying waste to one country after another: Mexico, Britain, Poland, Thailand, Korea, etc.

Behind the froth of finance, however, the wheels of over-investment kept grinding down the rate of profit on manufacturing and monetarism did not solve the problem. Yes, it washed out a great deal of excess capital, many low-profit companies and quite a few second-rate national economies in a global *tsunami* of austerity, but the profit rate did not bounce back as hoped.

Whenever the financial structure threatened to crumble, monetarist stringency had to be softened. But finance-led reflations came a cropper, as well. The world economy ended up in 1990 pretty much back where it had been a decade before and Japan and Europe barely crawled forward after that. The United States got back on its feet, but the only part of the world really running was Southeast Asia – until falling flat on its face in 1997.

The white frost of technology

Former Labour Party leader Harold Wilson has been ridiculed for his slogan 'the white heat of technology', yet the whole of bourgeois opinion is today in the thrall of high technology, seeing in it the answer to the problem of global growth. Nonetheless, the computer revolution has not delivered on the promise of general prosperity. Indeed, a central fact of the long downturn is its low average rates of increase in productivity, particularly the sharp drop of the 1970s and the general stagnation in the service sectors. The United States has never before suffered such a long drought of productivity gains.

This has led many economists to argue that the cause of the long downturn is the lower 'secular trend' in productivity growth. Many view the productivity slowdown as the exhaustion of Fordist mass production. The difficulty with this explanation is that there is no evidence for a secular slowdown in *manufacturing* productivity, which has been advancing at a smart pace since the mid-1980s. Instead, non-manufacturing activities have performed horribly. (A fallback theory, that services are inherently difficult to mechanise, cannot account for why manufacturing and services ran neck-and-neck in productivity gains throughout the Golden Age.)

What accounts for the pattern of productivity? The pattern of accumulation, says Brenner. The sharp drop in profit rates in the late 1960s and early 1970s triggered an equivalent slump in investment in plant and equipment, and hence reduced productivity gains. A recovery in manufacturing profits and investment and hence productivity, followed but at a lower average rate than in the Golden Age and over a smaller industrial base. The US generated jobs once more, but not in manufacturing and with little new machinery. Germany also raised productivity without expanding capital stock or

jobs and German unemployment stayed near 10 per cent. Japan increased manufacturing productivity and employment, but remain mired in recession all the same.

Orthodox objections

Some on the Left will not like Brenner's account of the contradictions of capitalism, nor my general endorsement of it. It goes against deeply held views as to what Marxism and radical politics should emphasise. Three criticisms are being made from the orthodox camp, as I read it, which turn on class struggle, underconsumption and value theory. I use the term 'orthodox' not to deride but to denote certain classic themes in Marxist economics. Nonetheless, I side with Brenner on these disputes.

Class struggle as the motor of history

Brenner displaces class struggle from the centre of post-war history, putting in its stead the contradictions of capital accumulation (profits, competition and investment). There are three good reasons for this: political, empirical and theoretical.

Politically, foregrounding the heroic struggle of the working class can end up as a misguided bit of victim-blaming which lets capital off scot-free.³ Indeed, Brenner sees the era of the long downturn as a world historical defeat of labour. That's class struggle, all right, but of capitalist revanchism, not the mighty working class squeezing profits.

Empirically, the objection to making accumulation pivot on class struggle is that five years of militancy are supposed to have ruined profit rates, but twenty years of wage stagnation could not raise them. In fact, lower wages are insufficient for a profit recovery without mass destruction of fixed capital and productivity gains.

Theoretically, wage-squeeze theory is a crabbed version of Marx's idea of class struggle as the motor of history. Class struggle may forge the property relations of capitalism, check the unbridled exploitation of labour, or overthrow the capitalist class, but it need not determine the ups and downs of the business cycle. Capital accumulation has dynamics that run their course independently of class conflicts over income distribution, labour process and the state. This accords with Marx's formulation of the falling rate of profit, in Volume 3 of *Capital*, which rests on the internal contradictions of accumulation – with hardly a mention of class, as well as his famous

³ For my views on this, see Walker 1999.

assertion in Volume 1 that accumulation is the independent variable, wage growth the dependent variable.

The apparent economism of the 'New Brenner' does not go against the 'Old Brenner' who wrote on the transition from feudalism to capitalism.⁴ In the latter, he accords primacy to class struggles in getting capitalism off the ground, but argues that the emergence of capitalism was decisive precisely because the 'rules of the game' in an established capitalist economy drive the owners of the means of production to revolutionise production – systematically. In the same way, it drives them to over-invest and sink the rate of profit – systematically. Brenner is well aware of the role of class struggles in setting the stage for rapid accumulation in post-war Japan or Germany or, more recently, in Southeast Asia. But unless there is a major class disruption, capital accumulation, competition and profit movements continue to operate in a relatively automatic way within broad social parameters.

With a little help from our Keynes

Brenner sharply discounts the Keynesian theory that the cause of underperformance and slow growth under capitalism is a lack of 'effective demand' rather than poor profit rates. Potential demand might absorb surplus capacity, but it will not be taken advantage of because further investment will not realise adequate profits.

This stands in opposition to the regulation school and social structure of accumulation school, which hold that high wages create the effective consumer demand for the output of mass production. This, they say, is what post-war Fordism achieved. Without such a mass market, Fordist industry would have overshot demand, creating the kind of underconsumption crisis seen in the late 1920s (which, in their view, triggered the Great Depression).⁵

There are three objections to such left Keynesian theory. First, investment is an important part of aggregate demand (purchases of capital goods), as Keynes recognised. But if investment slackens because of poor profits, then lack of worker demand is only part of the problem. Second, a lack of consumer demand has never been in evidence in the US, either in the 1920s or the long downturn. If wages fall and the rich get richer, as in the last generation, the upper

⁴ Brenner 1976.

⁵ Although this argument is not the main one followed by Marx in *Capital* Volume 3, he does make reference to worker consumption in a way that anticipates Keynes and lends support to such Marx-Keynes hybrid theories. Almost every Marxist thinker is influenced by this idea.

classes are quite capable of taking up the slack in consumption; all that happens is that the product mix shifts from Chevrolets to Mercedes, from Spam to filet mignon.

Third, greater demand can only raise profits marginally. Higher consumption rates allow for higher output levels and better capacity utilisation, which means lower unit costs. But as everyone's factories geared up, they would glut the market again and attract new competitors, driving prices and profits down. The key variable for Brenner is not capacity utilisation but the rate of entry and exit of capital.

Again, the evidence is on Brenner's side. Governments that tried Keynesian stimulation in the face of low rates of profit hit a wall of inflation and had to abandon the effort. Keynesianism is fine for giving a jolt to an otherwise healthy economy in a short-run slump, but cannot revive a weak one from the long-term doldrums. It's like coffee: a nice stimulant to get through a lecture on a regular day, but a failure where the body is too tired (or overdosed) to respond.

Devalued Marxism

From the Marxist camp, there are cries that in rejecting Marx's 'rising organic composition of capital' argument for the falling rate of profit, Brenner is jettisoning value theory. This is not the case. Brenner's theory is founded on Marx's basic thesis about surplus-value as the origin of profit, the distribution of surplus-value among sectors according to capital invested and on the regulation of sectoral prices by the market and flows of capital. I take Alan Freeman's critique of Brenner's use of value most seriously, since his efforts to recuperate Marxian value theory from the misplaced attacks of critics has been impressive.⁶

In fact, Freeman and Brenner agree on several fundamental principles. They are both 'orthodox' advocates of a Marxist theory of capitalism, by any reasonable standard, but they are both 'unorthodox' in trying to capture the spirit of Marx's critique of capitalism, not the letter of the text. Both are committed to a spirit of scientific inquiry in which a viable theory should explain the facts before us. Neither thinks the basic facts of the matter are in dispute: capitalist growth is manifestly cyclical and ran into a major post-war profit crisis from the mid-1960s through the 1970s.

As for the theory of crisis, Brenner and Freeman are in accord on fundamentals, as well. The first is that capitalism is undone by its own dynamism, not by stagnation of the forces of production or by the working class grasping a bigger cut of the pie. The second is that the central dynamic is capital accumulation – which means the

⁶ Eg. Freeman 1995.

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investment of profits in pursuit of further profits. The third is that accumulation outruns the ability of the economy to generate surplus-value and therefore the rate of profit falls, putting the brakes on further investment; that is, the denominator of $\pi = S/K$, increases faster than the numerator. The fourth point of accord is that the key variable driving the rate of profit up and down is the capital-output ratio, or the build-up of capital relative to total production.

Freeman and Brenner diverge at this point, with the former hewing closer to Marx on the limitation of total surplus-value by total labour-time. This has two effects on the theory of the falling rate of profit: on the quantity of surplus-value available to capital and on the measurement of capital and surplus.

On the first, the Freeman model insists on separating the effects of technology on physical production from value-production. The amount of total value available is set by the amount of labour-time in the system (number of workers x hours worked). By definition, this is not a terribly elastic quantity, even with work intensification and longer hours. It is not surprising, therefore, that one can show, as Freeman does,⁷ that the mass of capital quickly outruns the mass of surplus-value, forcing down the profit rate. (However, if we allow total labour-time to increase at some given rate, say 5 per cent, a reinvestment rate of 5 per cent will allow for balanced growth and no fall in the rate of profit.)

The difficulty with Freeman's view is that it does not allow for technical progress to expand the amount of surplus-value available. In Marx's idea of relative surplus-value, the falling value of labour-power leaves more of the total value left over as surplus. Allowing for rising productivity of labour, the race is between the rate of capital accumulation and the rate of increase of surplus-value. This modifies but does not necessarily reverse the tendency of the rate of profit to fall, even if it leaves everyone in algebraic knots.⁸

Brenner, on the other hand, takes the surplus to be the difference between total revenues (value of output) and total wages (value of labour-power), measured in prices. Technical change expands both total value and the rate of surplus-value. If wages keep pace with revenues, surplus remains a constant proportion of total product; if they do not, the rate of surplus-value increases. All the same, the key variable is how fast capital stock mounts up. One does not have to

⁷ Freeman in this journal, 'Crisis and the Poverty of Nations'.

⁸ Oddly, Freeman does not take this route: he says that technical progress affects long-term growth, but doesn't indicate how.

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assume a limited quantity of total labour, as Freeman does, in order to make the model work.

Capital accumulation will outrun surplus-value as long as the rate of reinvestment is higher than the rate of growth of output, revenues and surplus-value. That is, if capitalists earn 20 per cent profits and reinvest 10 per cent (consuming the other 10 per cent), then capital stock grows at 10 per cent per year. Unless output grows at a 10 per cent rate, the profit rate must fall. Because of competition and greed, individual capitalists cannot restrain themselves and will invest faster than an equilibrium rate of accumulation in pursuit of individual advantage, driving down the collective profit rate.

A corollary that Brenner attends to, but Freeman does not, is the disappearance (depreciation) of capital stock. This is a continual process as well. Capital equipment and factories are devalued and then retired as they grow old and become technically obsolete. If market adjustment were perfect, this would happen at a rate that destroys old capital as fast as new capital comes on board. But fixed capital is *not* retired quickly enough because individual capitalists find it profitable to keep it in production (its variable cost is virtually zero).

So far, the difference between Freeman and Brenner is not all that great. The falling rate of profit comes about because the rate of accumulation is faster than the rate of surplus expansion. The difference lies chiefly in how one handles technical change and whether one starts from the presumption that total value is limited by total labour-time. The latter is not incidental, however, because it alters the measures used for all the relevant quantities in the economy. Measuring capital and output in terms of labour-time is *not* the same as measuring them in market prices, as Freeman shows. Market prices deviate from values because of the effects of technology (capital intensity in different lines of production) and of money (which changes value over time and between countries).

The difference in measures is revealed in Freeman's charts. Movements of the capital-output ratio drive the rate of profit, but Freeman shows that the relationship is clearer in value terms than in price-terms (and clearer in current prices than in constant prices). This is a powerful argument for value-theory's performance in explaining empirical outcomes. Value-theory sheds some of the 'noise' of price movements to reveal the underlying trends. All the same, Brenner and Freeman's views of the post-war economy and the long downturn are not that different and settling their differences may improve our understanding of economic history but not fundamentally alter it.

Unorthodox projections

I now want to raise a series of questions about the world economy and its mechanics that lie outside the domain of Brenner's history and most of the criticism levelled at it. These are not questions for which I necessarily have answers, but they are things to which political economy needs to pay more attention. I claim them as unorthodox because Marxist economists have traditionally given short shrift to geography, technology, money and industrialisation.

The question of geography

Brenner takes his geography *lite*. Treating the global economy as made up of national economies can serve as a bracing antidote to hype about the waning away of the nation-state, but it also steers close to the line of Ricardian trade theory.⁹ The inter-national approach tries to unlock the secrets of global geography by means of a reduced set of spatial tools. This is not to say that a more complex model is easy to specify or to verify by means of readily available data (since most data are collected by nation-states), but one must recognise dimensions of the problem that go beyond the states-and-nations formula.

For example, cities and sub-national regions play a vital role as engines of economic growth and are a significant source of uneven development. Such leading areas hog the generative powers of industrialism, trade and capital accumulation while laggard regions suffer bucolic neglect and exploitation.

One reason for this is the multiplying and complementary forces of production inside 'industrial districts', urban regions and territorial complexes, as shown repeatedly by economic geographers.¹⁰ This is why any discussion of global competition and uneven growth must refer to Silicon Valley and Hsinshu Science Park (outside Taipei) in electronics, to Detroit and Nagoya in automobiles, or Tuscany and Baden-Württemberg in machinery. Furthermore, these nodes of production and innovation are often tied together by multiple linkages into transnational networks, such as the US-Mexico automobile complex, the Taiwan-South China shoe subcontracting

⁹ Contrast Ohmae 1995, whose neoliberal agenda is to get rid of the nation state and all its encumbrances on global capital, with Krugman 1996, whose liberal agenda is to argue that all is for the best with free trade.

¹⁰ See especially Scott 1988, 1998, Storper and Walker 1989, Storper 1997, Storper & Salais 1997.

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system, or the trans-Pacific network of personal computer production.¹¹

Another cause of such uneven development is that capital tends to accumulate in, circulate between and be managed from the leading cities of the world – chiefly London, New York and Tokyo and a few other places high up the urban hierarchy. It is no surprise that massive flows of finance today zip quickly between major cities, from San Francisco to Bombay, while hardly touching the mass of people and places. Or that Singapore and Hong Kong play such a disproportionate role in the development of East Asia as investment, control and business service nodes for the much larger transnational region of the Chinese business diaspora.¹²

Continental blocs are another crucial level of global geography, over which a great deal of ink has been spilt. Brenner hints at this, but never articulates a theory of continental integration or the uneven development of blocs as a whole.

It is hard to be satisfied with Brenner's use of Germany to stand for the whole of Europe. There is little mention of the very large economies of France, Britain and Italy and no sense of the spread of post-war industry and prosperity from north to south. European integration means that German exports mostly go to the rest of the continent and that European nations traded more with the outside world in 1960 than they do today. Nor is there any discussion of European production outlyers in North Africa, Turkey or Eastern Europe (let alone their migrating labour-forces).

The United States dominates North America, yet the integration of this continent also belies a simple model of national and global economies. Canada has long been the USA's biggest trading partner and Mexico is climbing fast, so US external trade and investment is by no means all 'global'. NAFTA was created as a way of locking in this continental bloc in response to European and Japanese challenges.

Brenner handles the intra-continental relations of Japan and East Asia better. Japan moved into large-scale offshore investment and production in the 1980s after a long hiatus of national autonomy and export to the United States. Brenner delineates the oscillation of Japanese investment and competition due to shifting exchange rates between the dollar and the yen. He seems unaware, however, of research on the development of intra-Asian production networks of Japanese companies, and he makes too little of internal savings and capital circulation *within* East Asian countries.¹³

¹¹ Hsing 1998 and Dietrich and Kraemer 1998.

¹² Sassen 1991, Leyshon and Thrift 1997; Strange 1998, Martin 1999.

¹³ Wade and Veneroso 1998.

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Another shortcoming of Brenner's geography is the absence of multinational corporations. This is sure to annoy those who view the MNC as the principal vehicle of capitalist expansion.¹⁴ Surely, multinationals complicate spatial patterns because they weave together many different national companies, create internal divisions of labour that transcend national boundaries and report flows of commodities and money on the basis of internal shadow prices rather than market prices? They can also create joint ventures and alliances across borders that have no singular nationality.

A third puzzle to which Brenner offers no solution is how the capitalist system expands geographically. While he is adept at bringing national economies into relation as competitors, investors and traders, the ascension of new countries to the inner circle of global capitalism is hardly explicated. How much is due to an outflow of surplus capital (David Harvey) and how much to internal saving and investment at the periphery (Robert Wade)? How much is a runaway search for cheaper labour (William Greider) and how much a normal accretion of new workers into the global proletariat (Paul Krugman)?¹⁵ How much is export-driven and how much is based on home markets of late-industrialisers?

Finally, the global economy is a *political* economy held up by the exercise of class and state power. Brenner refers to the Korean War of the 1950s, dollar devaluation in the 1970s and US trade pressure on Japan in the 1980s. But what about the imperial might of the United States over the whole international state system? No doubt the recovery of the US economy in the 1980s and 1990s is not unrelated to its ability to project revanchist politics on the world, both as a neoliberal program of forced openness, privatisation and deregulation and as a reassertion of military and diplomatic pressure. Europe may have pretensions to a balance of power, but the US has no qualms about brushing it aside to take action, as it did in Serbia. Japan is even more helpless before American might, getting the back of the hand from a US eager to court China in recent years. And the death-knell of the Soviet Union brought a new morning to America as the confident centre of unchallenged capitalism.

Finance and real-world economics

There is always a danger in Marxist economics of falling into the orthodox trap of dealing only in 'real' variables and treating money and finance as epiphenomena. After Keynes, certainly, this is no

¹⁴ Eg. Dicken 1998.

¹⁵ Harvey 1982, Wade and Veneroso 1998, Greider 1996, Krugman 1996.

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longer acceptable. We need to keep in mind Marx's dialectic of capital circulating between productive and monetary forms. Finance should be seen as both outcome of production (flow of profits) and as input to production (and the creation of future profit). The rate of profit is thus to be read as both a real indicator of performance and a financial sign of the times.

In Brenner's essay, national currencies and exchange rates are key mediators of international trade and competition, with shifts in relative values triggering reversals of fortune between nations. This follows Alan Freeman's principle that the elasticity or flexibility provided by money holds the system of exchanges together despite ever-changing disparities in conditions of production.¹⁶ But where is a serious treatment of the global development of finance in Brenner's history? By 'finance' I mean the banking, credit and securities markets. Key markers such as eurodollars of the 1960s, global banking in the 1970s, securitisation in the 1980s and the stock market run-up of the 1990s get only passing mention.

To Brenner, the bloating of the financial sphere over the long downturn results from the transfer of surplus-value from the working class to the rich, who turn around and gamble it on the global casino.¹⁷ While this is certainly true as far as it goes, the evolution of financial operations from the 1960s to the 1990s also marks a stepwise progression to a new level of capitalist development. The financial innovations of each decade have laid the foundations for the financial dealings of the next (eg. without eurobonds, fewer free-wheeling petrodollars; without petrodollars, less global lending and no banking crisis; without a bank crisis, less securitisation of debt; and so forth). Regardless of what we may think of the shift to securitised capital markets, it will be almost impossible to go back (and the bank-centred systems of Asia and Europe continue to be undermined as we speak).

The 'real' effects of this transformed and expanded financial system are of five kinds: distributional; productive; integrative; political; and disastrous. They complicate and alter the picture of global capitalism drawn by Brenner.

First of all, finance is a *means* of extracting surplus-value from the rest of society. Finance capitalists may take their cut in any number of ways: from industrial capitalists as investment bankers' fees; from governments as interest on treasury bills; from workers as rents on properties held as financial assets; and so on. There is no

¹⁶ Freeman 1995 is referring to mediations over time but the same applies over space, in my view.

¹⁷ See also Henwood 1997; Strange 1986, 1998.

predetermined division of national income among these warring factions and, in times like these, the shark fin of the financial jaws shows high in the water. The financiers of the long downturn have successfully picked the pockets of almost everyone outside the top 10 per cent of asset holders, making the upward redistribution of wealth worse. Even the banks, which suffered low profits through the 1970s and 1980s and were pinched by financial 'disintermediation' (the shift toward securities markets), have recovered mostly on the backs of ordinary people, through mass lay-offs of clericals, higher fees for everything and abandoning the poor to cheque-cashing storefronts.¹⁸

The second function of finance is to lever future production through credit-creation and capital mobilisation. This lubricates new investment and opens up new avenues of value-production.¹⁹ The clearest case of this is venture capital, which has assisted the high-tech sectors in the US in unleashing their technical potential, but it is a more general phenomenon of external financing of smaller and newer companies (big corporations depend more on internal profits). The floodtide of finance has also helped promote the restructuring of older industries through mergers and buy-outs. While we may condemn these for excesses of speculation and lay-offs, they have also helped the United States raise its profit rate by washing out surplus capital and excess competition.

Is speculation always a productive loss? In fact, no. Think of the Savings and Loan debacle of the 1980s, which washed away as much as \$500 billion in bad loans and cost the US government (in a major redistributive move) some \$200 billion in bail-out funds. At the end of the day, it left thousands of empty buildings standing (making downtown Houston and Denver see-through cities for the next decade). Those buildings have been eagerly snapped up during the present boom. Their capital value was discounted by foreclosure and fire sale, but their physical use-value was still there waiting to be taken advantage of. In this sense, speculative capitalists have redistributed some of their capital back to others.

This points to a third function of finance, integration or 'intermediation'. Money and finance grease the wheels of commerce and the circulation of capital. I take Alan Freeman's point seriously: money is the elastic tissue that binds the hard bits of production, consumption and circulation together in time and space. It does not just flow, like oil, so much as it binds, like water in a colloidal solution or ice in a moving glacier. And the principles of that bonding are

¹⁸ Dymnsky & Veitch 1996, Leyshon & Thrift 1997.

¹⁹ This is best stated in Harvey 1982.

significant to the behaviour of the system as a whole. Like the mediations of currency exchange, finance more broadly has mediated price movements, profit rates and capital flows between sectors and nations. That is, financial manoeuvres have helped usher flagging industries off the stage of history and usher in new ones, running down steel or ships and elevating electronics or biotechnology. Financial markets have transferred masses of capital from one place to another, helping to open up new industrial territories and shuttering old ones. We may not like the speed and harshness with which this is done (all in the name of modernisation and endless growth), but it can right the listing ship of capitalism in heavy seas. A good example is the way Japanese surpluses flowed to the United States in the 1980s, thanks to the ability of US bond markets to swallow gargantuan quantities of capital without a hiccup.²⁰

What happens through financial dealing is often more subtle than the more visible sloshing of portfolio funds across international boundaries, amounting to continual revaluations of assets that, in turn, lead to revaluations of profit and investment prospects from one sector to another, one company to another, one region to another. This is not the idealised equilibration depicted by neoclassical theorists, but it *does* work to a significant degree. The functioning of capital markets, like currency markets, helped global capitalism mark down obsolete assets, squeeze out poor competitors and arbitrage investments into new arenas in a way that cushioned the global economy against even worse performance in the face of falling profit rates. It has also mediated the risk inherent in the more unstable global economy of the long downturn for those trying to operate sensibly in a slightly unreal 'real world'.²¹ Brenner's thesis about the rate of profit is chiefly about rates of adjustment, in which the writing-off of fixed capital does not take place fast enough to compensate for new capital investments. In this, the difference between a financially mediated production system and a simple commodity-and-capital-flow model (which is the image most implanted in our minds) is like the difference between a manual and an automatic transmission.

A fourth function of finance is political: the financiers have been crucial to the formulation and enforcement of the neoliberal agenda. The globalisation of finance, bulking up of capital markets, currency speculations and investment strikes have all contributed to the heightened power of capital to call the shots with governments. We

²⁰ David Harvey was the first, to my knowledge, to point out this global 'balance-wheel' function of finance capital. Harvey 1982.

²¹ On risk and finance, see Henwood 1997.

should not reduce such politically driven renovations of the global economy to purely economic causes – as if a falling rate of profit and class struggle were sufficient conditions for the world-historic defeat of labour we have just witnessed.

The fifth and most dramatic effect of the financial apparatus is when financial markets fail precipitously. Financial debacles are traumatic for the productive base, at best, and devastating, at worst. Virtually every major downturn in the history of capitalism has been triggered by a financial crisis. The stock market decline of 1987 and the financial disaster in East Asia in 1997 were ‘crashes’ in the same sense as Black October 1929. Both had the world’s capitalists jittery for months and might have pushed the global economy over the edge were it not for deft financial interventions by the central bankers (though the IMF made the Asian crisis worse). The spectre hanging over Brenner’s discussion of the long downturn is whether the stock market run-up of the 1990s marks a true recovery or presages a final blow-out of the century.

Technology and innovation

The care and feeding of technical innovation is the new darling of mainstream economics and the business class, but technology theory does not cut a very broad swathe on the Left. Most Marxists are a species of social constructionist who put politics and social relations in the driver’s seat but forget the car underneath (the intellectual equivalent of the NRA’s slogan, ‘Guns don’t kill, only people do’).

Brenner is ambivalent about technology. On the one hand, he foregrounds Marx’s proposition that the drive to raise relative surplus-value makes capitalism technologically revolutionary. Productivity growth figures as a key variable throughout the essay. Moreover, Brenner sees that the principle contradiction of capitalist expansion has to be that the rush to develop the forces of production creates a falling rate of profit. He rejects stagnationist views that depend on a slowdown in productivity growth to explain the long downturn. This rejection forms a crucial part of his case against wage-squeeze theory, which holds that the strength of labour prevents capitalists from introducing labour-saving technology fast enough to keep profits from falling. Similarly, he opposes the regulation school view that the end of the Golden Age was triggered, in part, by the exhaustion of Fordism’s long run-up of productivity in mass production.

On the other hand, Brenner’s focused treatment of arguments over productivity comes as something of an afterthought near the end of the essay, granted much less prominence than either Keynesianism or monetarism. Indeed, Joseph Schumpeter and his

followers, such as Christopher Freeman, the central figures in contemporary economic discussions of technical change, get nary a mention (Marxists love to use Schumpeter’s phrase ‘creative destruction’, but rarely take the rest of his writing seriously). Schumpeter had two important things to offer Marxist economics: the interplay of capital investment and technical change; and the importance of product innovation as well as process improvement.

In Brenner’s account, investment is the principal moving force behind technical change. Without investment one cannot purchase the necessary equipment, skilled labour and materials to put new technologies into place; indeed, he implies an almost one-to-one ratio between investment and productivity gain. Yet, a given dose of capital often yields strikingly different results in different sectors and conditions, as illustrated by Brenner’s discussion of the lousy pay-off from computers. Brenner is caught in a contradiction, unless he accepts a degree of independence between the rate of technical progress and the rate of investment. How can this be?

The first reason is the nature of the things themselves: there may be enormous gains from fecund technology, as in Moore’s law about the increase of microcircuitry on semiconductors, or paltry gains from enormous investments, as in the case of nuclear power – which is why the latter industry has virtually disappeared while the former barrels onward and upward. Yes, a car won’t go far if it hasn’t enough investment fuel, but the capabilities of the car determine how fast and far it can go on a tank of gas. The second reason is the labour of innovation, or the act of creation of new things through scientific discovery, engineering know-how and learning-by-doing.²² Not just the machine, but the machine-makers – the designers, engineers, managers and workers – determine how well a company can respond to technical challenges and opportunities, as the US auto giants discovered to their regret when the Japanese pounded them in the 1980s. The third is that technological practices that work well in one context may sputter in another. For example, Japanese mass production overtook the US by 1980 in consumer

²² On innovation, see Rosenberg 1976, Freeman 1982, Nelson 1993, von Hippel 1988, Mowery & Rosenberg 1998. I should add that Brenner’s explanation of low innovation in services includes labour glut and low wages as a key cause. This is a strictly neoclassical price-induced theory of technical change, which leaves much to be desired; and it is the double of the wage-squeeze theorists’ view that the working class (either by wage push or workplace struggle) is the pivotal actor in technical change. Ah, were it so! That would mean a revolutionary displacement of capitalist power over production which, as of this writing, has not occurred. Tweak production decisions, yes, but determine them? Not a chance.

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electronics and automobiles, but Japan has not been able to translate this into equivalent success in computing and biotechnology.²³

All this means that the yield of productivity gains from a given amount of investment will depend on where the money is put, how innovation is organised and the transferability of methods from one success to another. Because recovery from the productivity slump of the 1970s was by no means automatic, there was a frantic search for new technologies and new ways of spurring innovation by American capitalists over the last 20 years (as there had been by Japanese business after the Second World War). Indeed, the search for the magic key to unlock new technologies has become a central obsession of the capitalist class and its consultants.²⁴

We also need to take up the dialectic of process and product change in technological advance. Brenner, like most Marxists, has a very classical view of technical progress as cost-cutting, with the adoption of the machine as the principle means to this end. Productivity gains come from 'process improvements'. Yet the biggest emphasis of business in recent years has been on the product side, and one hears of little else from management consultants except 'niche marketing', 'quality control', 'mass customisation' and the like. There is a long-standing tendency on the Left to regard product innovation as a kind of consumerist frippery and therefore unworthy of serious consideration. More recently, many in cultural studies have written on consumer society, but these works do not inquire into the economic logic of product proliferation.²⁵

Capitalism has not only raised productivity dramatically over the last two hundred years, it has introduced millions of new commodities. Why should capitalists bring out new products in such profusion? For Brenner, as for Marx, the answer is 'temporary monopoly', or the surplus profit that goes with being the first out with a new good. This is correct but insufficient. It speaks only to partial analytics of the firm, not to the aggregate logic of capital. To capture this, we have to attend to three kinds of products: luxury goods; wage goods; and capital (intermediate) goods.²⁶

²³ Dietrich and Kraemer, 1998.

²⁴ Eg. Porter 1986, Davidow and Malone 1992, Chandler et al, 1998, Zander 1999.

²⁵ See eg. Forty 1986, Miller 1986, Walton 1992, Fine and Leopold 1993.

²⁶ I speak interchangeably of goods and products, for convenience, but could just as well say 'goods and services'. See Sayer and Walker 1992, chapter 2, on the distinction.

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Luxury products colonise the expanding economic space of the rich. Keynesians and Marxists treat the consumption of the rich as minor and the consumption of the working class as the heart of mass consumption, but the upper classes (bourgeois and petty bourgeois of all types) constitute a huge market in their own right; in countries such as Brazil they tower over the national market. The recent upward shift in class distribution undoubtedly explains a good part of the growth of niche markets, custom markets and high-quality product demands over which retail consultants wax ecstatic.

How does the multiplication of luxury goods affect growth? If we assume a zero-sum game, new products and the new industries they spawn simply replace older products and sectors: Nike and sports shoes knock out Buster Brown and kids leather shoes and the net effect is nil. But capitalist growth is not a zero-sum game. New products may open up new fields of industry such as computers or plastics. A value theorist would say that product innovation adds value to aggregate output as new product lines cause capitalists to hire workers and expand total social labour. This effect is exaggerated because new product sectors almost always come on-line with more labour-intensive process technologies than existing lines, which have been rationalised and mechanised for a longer time.²⁷ On the other hand, those new sectors lower the average productivity of labour in the whole economy. Could this be a contributing factor to the productivity slowdown?

What about wage goods? Consider the effects of product improvement in mass products for mass working-class markets.²⁸ Normally we think of a better product, like a more durable automobile, as delivering more use-value to the final consumer, but having no effect on production. But product quality can have a positive productivity effect, indirectly. If higher quality delivers better results so that the consumer needs less of the product, it amounts to the same thing as a productivity increase that lowers the unit price of a good. Either way, the new technology cheapens the cost of reproducing labour, which yields more surplus-value for the whole of capital. In that sense, improved products can increase relative surplus-value (depending on the course of the wage struggle).

²⁷ This is not always so, of course; DDT or nylon came into being through high-throughput, capital intensive systems of chemical and petrochemical production.

²⁸ There is certainly more room for niche marketing here than was once thought, by targeting subcultures of hobbyists, youth, immigrant communities and the like. Capitalists have become quite brilliant at seeking out the little worlds of monopoly through such strategies.

A third group of products re-enter the realm of production as intermediate or capital goods. This is actually the largest of the three groups, well over half of all output. Most discussion of 'products' looks only to final goods and consumer society – despite Marx's remarks in Volume 1 of *Capital* about 'productive consumption'. (One occasionally sees a two-sector or three-sector model deployed along the lines of Marx's Volume 2 schemas around Department I and Department II, but mostly in connection with aggregate balance and imbalance in the economy.) Technical change and intermediate goods are tightly intertwined, because one company's capital goods go into another company's production process.²⁹ This applies to machines, of course, like robots to paint car bodies, but also to new materials, like metal-plastic laminates in car bodies, or to the forklifts used in every warehouse or the gas for the forklift. It can get quite far from the immediate assembly of a product, as when better computers are incorporated into better design methods or into stock control.

This observation raises the larger issue of the expanding division of labour in all modern production. Machines and mechanisation are not the sole source of productivity enhancements. The division of labour still plays a big part. This does not mean only shop-floor specialisation, but the way all production is broken into many sub-segments, including design, testing, components, machine-building and repair, assembly, finishing, packaging and so forth. Business theorists now appreciate that complexly divided and externalised production systems can outperform unified, linear and internalised 'Fordist' systems. Hence Silicon Valley, Hollywood and Toyota's subcontracting *keiretsu*. The days of One Big Factory, One Big Firm are over in most industries.³⁰

In short, a serious treatment of technical progress and its origins is required in any aggregate analysis of the world economy today and it turns out to be more complicated than Brenner portrays, involving a serious consideration of the sources of innovation, the technical problems of productivity gains and the role of product development in the whole advancing front of modern technologies. If steam power gives us the machine mill, what do electronics, biotechnology and 'imagineering' give us?

The birth of the new

Like the Hegelian 'angel of history', Brenner provides a marvellous analysis of the past seen from the present. We are invited to view a

²⁹ As Rosenberg pointed out some time ago (1976).

³⁰ Sayer and Walker 1992; Storper 1997; Scott 1998.

long trail of wreckage strewn behind the expansion of global capitalism. But there is not much to point to in the way of present and future dynamism. This seems to contradict Brenner's own view of capitalism's revolutionary and tragic dynamics.

Brenner is not, therefore, arguing for any one of three common left views of the post-war economy. One is the Golden Age syndrome, in which the post-war era was uniquely brilliant and cannot be duplicated (normal capitalism will necessarily grow more slowly); this view creeps into various Keynesian, regulationist and other narratives. Another is the long wave model of fifty-year cycles, on the lines of Kondratieff and Schumpeter, in which a long upswing is necessarily followed by a long downturn, followed by a new recovery – rather like the ebb and flow of the tides, but presenting no pressing difficulties for contemporary capital. The third is the stagnationist thesis (permanent monopoly surplus) of writers of the *Monthly Review* school.³¹

Brenner's explanation for the long-running troubles of global accumulation – the undertow of over-capacity – is argued from possible every angle. But the recovery of US profits (and eventually the world economy, one must believe) is not equally well accounted for. The US rate of profit is up in the late 1980s and late 1990s. Why? Because of three things: capital stock written off, wages held down and new techniques introduced. But what does he have to say about the latter? What Brenner fails to do is give us any substantial tools to grasp the emergence of a different future out of a stumbling past.

Brenner's principal line of inquiry into 'new techniques' is an exposition on whether computers have revolutionised productivity. But much more has gone on over the last twenty years than computerisation. This is a very narrow view of the 'new industrial revolution' we have been living through. He may be forgiven since almost no one has tried to pull the scatter of insights together about the broad front of advances in the forces of production. Most treatments are fantasies of the New Information Age.³² Nonetheless, there has been a qualitative shift brought on by a new industrial revolution. Some of its key elements are as follows:³³

³¹ On the Golden Age, see Marglin and Schor 1990. Concerning the Schumpeterians, see Schumpeter 1939, Freeman et al 1973, Walker 1995. For the *Monthly Review* school, see Baran and Sweezy 1966, Steindl 1952.

³² Eg. Castells 1996.

³³ These have been gleaned from a wide literature including Schonberger 1982; Adler 1985; Forester 1989; Dosi et al. 1988; Wood 1989; Lazouck 1990; Best 1990; Debrsson and Walker 1991; Sayer and Walker 1992; Davidow and Malone 1992; Saxonian 1994; Gomes-Casseres 1996; Castells 1996; and Sturgeon 1999.

I. Better use of human labour

- more efficient use of labour, better labour-time monitoring
- more creative application of labour
- more attention to 'learning by doing' on the job
- more educated and technically-literate labour

II. Improved machinery and machine handling

- more sophisticated machinery, capturing higher capabilities of human labour
- faster and more precise machinery
- more adaptable machinery
- better machine monitoring and reduced wastage, repair and damage
- increased automation of machine design

III. Improved product design and quality

- better product design for use
- higher product capabilities
- tighter quality control in production
- better design of products for easy manufacture

IV. Better understanding, preparation and use of materials

- deeper understanding of and control over the properties of natural forces within materials
- finer material quality and preparation
- innovative combinations and uses of materials
- better adaptation of materials to product design
- more efficient handling of materials and reduction of stocks
- improved quality control of materials and components

V. New divisions of labour

- new product lines and industrial sectors
- new process divisions of labour and working groups
- more flexible job assignments
- closer attention to economies of scope and extensive putting-out of work
- expansion of design, R&D and engineering capabilities

VI. New forms of industrial organisation

- computerised tracking of product, machine and materials flow
- just-in-time systems of inter-workplace integration
- inter-firm alliances for R&D, production and marketing projects

- better co-ordination of subcontracting and networking
- more sophisticated outsourcing and turnkey production systems
- internal decentralisation of control and decision-making within large firms
- better monitoring of investment and return by project, within large firms and across sectors.
- closer attention to demand and closer linking of production to demand

This indicative list should suffice to make the point. The new industrial revolution moves across a wide scientific-technical-organisational front, which includes radically new materials and faster communications, better administrative techniques and machine capacities. Need I also say that these changes go hand in hand with several forms of labour intensification, flexibilisation and externalisation (shifting burdens of risk onto workers)? But greater labour exploitation should not blind us to the very real improvements installed by fin-de-millennium capitalism.

In short, capitalism keeps growing and changing. While the long downturn is a fundamental problem for the system, to which Brenner rightly calls our attention, we have to be careful not to miss the smiling face of the capitalist Janus – and the ways in which capitalist change undermines pre-existing ways of working and ideas about the nature of the beast.

Conclusion

None of these observations overthrows Brenner's history of the global economy. I am still in substantial agreement with his portrayal and I realise that one cannot do everything in a single essay or book. We are all in debt to Brenner for the work he has done. And we can do more than fight over old ground; historical materialism must take in every dimension of economic development and continue to deepen its theoretical grasp of capitalism.

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Surfing the Troubled Waters of 'Global Turbulence': A Comment

John Weeks

Introduction

Those familiar with the contributions of Robert Brenner to understanding of the historical development of capitalism, and his devastating critique of the 'regulation school'¹ must, like myself, have felt a sense of anticipation as they began his recent volume on global capitalism since the end of World War Two.² While the editor's introduction was pretentious to the point of embarrassment,³ this unfortunate excursion into naive idolatry should not be attributed to the author himself. However, even those most supportive of Brenner's previous work (again, such as myself), could not help but be disappointed by the contents of 'Global Turbulence'.

While Brenner shows his usual thoroughness and attention to detail in his review of empirical trends, the volume suffers from two serious failings. First, on an empirical level, it refers only in passing to the role of finance capital, whose growing importance in the 1980s and 1990s has been integral to the 'turbulence' that the author seeks to explain.⁴ If this is not *Hamlet* without the Prince, it is at the least *Othello* without Iago. Second, and the subject of this comment, the theoretical framework that provides the central organising theme of the volume is analytically confused.⁵ The theoretical argument linking competition to crises suffers from a number of basic conceptual mistakes, as well as purely technical errors. As a result, the subsequent empirical discussion is based upon a vague hypothesis, rather than theoretically grounded. A dissection of the argument is instructive, in that it demonstrates, on the one hand, the eclecticism that results from a confused theoretical framework; and, on the other, the explanatory power that can be achieved from a consistent application of the materialist ('Marxist') theory of value.

¹ Brenner and Glick 1991.

² Brenner 1998.

³ The last line of the introduction reads: 'But Marx's enterprise has certainly found its successor' (p. v).

⁴ Across the spectrum of commentators, the massive movements of financial capital in global markets are identified as the *sine qua non* of the last 20 years. Particularly important has been their impact on exchange rate instability. For a discussion, see Weeks 1998.

⁵ The theoretical framework is presented in Brenner 1998, pp. 24-38.