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Real Economy Causes of the Great Deprivation of Early 21st Century

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Abstract

The American economy has undergone a dramatic structural change in the first decade of the 21st Century. The real-economy causes of this transformation, and their expression via the real estate market and its financial derivatives' market, and their final manifestation in world financial markets, is explained using traditional economic theory. A three-sector Walrasian general equilibrium model, and a non-Walrasian temporary equilibrium model with fixed prices and quantity constraints, are both utilized to explain the real-economy causes of the observed stylized facts. Some remedies that will likely work, and ones that will not, are also identified. (95 words)

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1. Introduction

Without doubt, the world is currently facing a staggering financial crisis. Hyperboles such as the ‘financial crisis of the century’ or ‘credit tsunami’ have recently been employed to highlight the scope of the event.¹ However, the fact that it may be merely the financial repercussion of significant real-economy events appears to have been utterly disregarded. It would seem that, out of nowhere in particular, a financial debacle, arising from an immaculately conceived real estate market bubble, if you would, grew, and then suddenly burst, to wreck havoc on the world. This has led to innumerable attempts to develop intricate theories of the causes of such a bubble formation, obviating thereby the need for paying attention to why the bubble burst – after all, it was a bubble to begin with – unsustainable by definition.

There was a real estate market bubble that formed in the U.S., we are told, that burst around 2006. It started because too many people bought houses, of whom many were not credit worthy, still they were able to buy houses because they were aided by mortgage loan originators who did not engage in adequate due diligence required by law to determine these borrowers’ credit worthiness. Why did mortgage lenders behave in such an irresponsible manner? Because they could originate a mortgage loan, and turn around and sell it to mortgage consolidators who, in turn, bundled mortgages from different states in America, and sold such a mortgage derivative, called mortgage backed security or MBS, to other investors such as investment banks, hedge funds, institutional endowments, retirement funds, domestic and foreign private banks, and central banks and treasury departments of various countries. Since mortgage-default risk was borne by these final holders of MBSs, and not by the original mortgage lenders, the latter had little incentive to diligently assess the credit worthiness of additional buyers of houses. That is how more demand for houses got created, house prices rose, and the bubble grew bigger. This is a clean and clear story, but as I argue, it is misleading because of its inadequacy.

Like all bubbles, this bubble also burst suddenly, and those who had been holding once-prized MBSs in their portfolios suffered capital losses when the prices of their MBSs fell, eventually to zero, in turn because those who could ill afford houses they had bought defaulted on their mortgage loans. Since the institutions that were holding such ‘toxic’ assets could not convince anybody to buy these MBSs, they became cash strapped. What is more, when their customers decided to withdraw their investments, these institutions could not comply, and thus became insolvent. Solution: governments should buy these currently worthless assets, and thus remove them from the balance sheets of these institutions, by injecting large enough doses of cash, so that such these banks, funds and institutions return to healthy balance sheets. Such measures have been adopted, in exchange for governments acquiring ownership claims on these institutions, but they have failed.² This part of the story is also clean and clear, but as I

¹ An example is Washington Mutual, which is the biggest – \$300 billion – bank failure in American history, because its customers withdrew \$16.9 billion in the ten-day period between September 15 and September 25, 2008. Moreover, to take just one measure, the S&P500 Index was on September 1, 2000, and again on June 8, 2007 above the 1,500 mark. At the end of October 2008, it is hovering around 950. It would have to rise by more than 50% of its present value to recover all the losses in equity values. In fact, taken together, the loss of total equity value in the U.S. since January 1, 2008 is over \$5 trillion to date. Similar phenomena have been observed in a number of countries including Japan, Germany, France, the U.K., South Korea, Australia, China, India, Thailand, Iceland and Brazil, among many others.

² The U.S. Treasury Department spent \$85 billion in September 2008 to purchase 79.9% interest in the world’s largest insurance company, American International Group (AIG), \$200 billion to buy Fannie Mae and Freddie Mac, both mortgage guarantors, another couple of hundred billion dollars to bailout a few other financial institutions such as Northern Rock from going bankrupt, and \$700 has been approved by the U.S. Congress as a ‘Bail-out Package’. There is another ‘Stimulus Plan’ worth \$250 billion still under consideration. Moreover, South Korea has injected \$107 billion, Austria has approved \$114 billion, Sweden has guaranteed new medium-term liabilities of banks up to \$205 billion France has approved \$491

argue, it is still misleading because of its inadequacy.

Such attempts to explain economic phenomena are thoroughly misleading, if not outright flawed, for four distinct though inter-related reasons. First, how do we know that these real estate and financial markets have not performed as well as markets typically perform? That is, how do we know that these markets have not merely played out some prior real-economy root cause of a consequent financial problem via the real estate and MBS markets? Do we have sufficient grounds for an indictment of these markets? The alleged malfunctioning of the real estate market and of the related mortgage-derivatives market in the U.S. may not, in fact, be the fault of markets at all.

Second, identifying unscrupulous practices of mortgage originators, unrealistic expectations of vast numbers of home buyers and unbridled greed of institutions that acquired once high-yielding MBSs as the culprits relies on the presumption that large numbers of human beings do not bring reason to bear on their choice of actions and thus do not take responsibility for the consequences of their actions, and in this very general sense, such explanations rely on personal irrationality.³ But, irrationality can hardly be considered the foundation of any reasonable theory; absolutely anything can be blamed on irrational behavior.

Third, explanations of phenomena of recessions, depressions or of 'crises of over-production and under-consumption' have a long history in the hands of the likes of Karl Marx and Lord Keynes. These explanations have been given more sophisticated foundations by economists, but such theories receive short shrift and summary dismissal, without any explanation of why they should be ignored.⁴ An interesting point to note is that while almost all economies of the world, including the American economy, are experiencing more rapid than usual business failures, rising unemployment, fall in consumer confidence and a contraction in private consumer spending, a debate is still raging as to whether the U.S. economy is in a recession. This is because in the U.S., the authority to declare a recession has been given solely to the National Bureau of Economic Research (NBER), which has quite arbitrarily decided that the definition of a recession is 'two consecutive quarters of negative GDP growth', which has yet to happen since 2002.⁵ On this definition, the American economy is not in a

billion and Germany \$681 billion, all with a view to providing security to all account holders in financial institutions in their respective countries. All major central banks in the world have reduced their interest rates, with the Bank of Japan's rate down to 0.3%, and the U.S. rate at 1%. China undertook three interest rate cuts of 0.27% each in a six-week period, and the European Central Bank rate stands at 3.75%, among others. In addition, the International Monetary Fund has stepped in to provide \$25 billion to Hungary, \$17 billion to Ukraine, and the process is still underway. Since bank lending has come to a grinding halt, on October 30, the Federal Reserve agreed to provide \$30 billion each to the central banks of Brazil, Mexico, South Korea and Singapore, effective until April 30, 2009, to mitigate the spread of problems in accessing U.S. dollars. All this had happened by the end of October 2008.

³ See Sen (2000).

⁴ These theories include those of Michael Kalecki, and Luigi Passenetti, based on increasing income inequality, Costas Azariadis, Martin Bailey and Robert Gordon, based on implicit contracts, Peter Neary, based on temporary equilibrium with fixed prices and quantity constraints, Assar Lindbeck and Dennis Snower, based on the insider-outsider phenomenon, Robert Solow, based on the efficiency wage hypothesis, George Akerlof and Janet Yellen, based on near rationality, among others.

⁵ Thus, in spite of a doubling of foreclosures between August 2007 and August 2008, home price decreases by a country-wide average of more than 20% since the beginning of 2006, the inventory of existing homes for sale at an all time high since the great Depression of 1929-36, unemployment rate at a seven-year high, the highest annualized rate of bankruptcy filings in 2008, and the consumer confidence at the lowest it has been since records were kept in 1967, the American economy is technically *not* in a recession because, in the third quarter of 2008 that ended on September 30, while consumer spending declined by 0.3%, GDP actually grew at a positive rate of 0.5%. There is something pathological about such a denial. Besides, who gave NBER the authority to decide on such a patently absurd and thoroughly narrow, single-criterion-based definition of a recession? No self-respecting economist should ignore such a plethora of evidence of the ill health of

recession, and it cannot be for at least another six months. If this is not government-sanctioned official denial, I don't know what is!

Fourth, the practice of looking for the actions of a person, or of a group of persons, or of laws and regulations, to place blame for something gone awry, well intentioned as such an excise may be, serves the unfortunate purpose of distracting attention away from seeking politico-economic historical explanations, and constitutes an obstruction to a clear view of primary driving forces that are otherwise plain for one to see.

A lot of soul searching is going on these days to examine the financial and banking systems and their regulatory mechanisms to find the financial-sector causes of the problems that have certainly expressed themselves in a financial form. The question remains open, however, as to why the current financial crisis could actually not have been a faithful market expression of financial symptoms of a set of real-sector events that underlie mortgage-associated problems, which, in turn, have precipitated the current financial troubles. In other words, have we got the question right? It is precisely to this issue that I address this examination. Indeed, I identify the fundamental underlying real economy causes, distinguished from financial or mortgage-instrument-related causes, to explain the consequent extensive deprivation suffered by large numbers of people in the early part of the 21st Century. The explanation of the financial mishaps comes out in the wash.

I argue here that the causes of the current problems facing the American economy and indeed the world economy are actually real, politico-economic events, and the remedy is also politico-economic in nature. It is not that financial solutions are completely irrelevant. Indeed they are necessary, but simply not sufficient. My explanation, therefore, is rightly seen as complementary to the analyses offered thus far, not as a substitute for them. My approach does, however, render the implications for effective policy prescription radically different from the suggestions proposed thus far. For, it is patently absurd to identify effective solutions *exclusively* with financial injections and amendments to regulations of financial institutions. Financial rescue plans, solely by themselves, can hardly be expected to withstand the burden of rescuing the American economy from its current woes. It is precisely because of an inadequate appreciation of the real economy causes of the current financial problems that solely financial rescue measures have been entertained thus far, and despite their enormous magnitude, they have failed to achieve their declared objectives.

It is essential that we comprehend the basic, fundamental real-sector causes. Otherwise, we will merely engage in the treatment of symptoms, only to find them reappear subsequently. It does not, as it were, help to do plastic surgery on a person's face that has turned pale because he is having a heart attack, while choosing to avoid bypass surgery that could save his life. We must get the question right, to get at the solution to the problem. This is the principal purpose of this paper.

Widespread deprivation was actually well underway in the U.S. by 2004. This was noticed and

an economy and still wonder if it is in a recession! Denial certainly has its value, for example in psychological self preservation, but official denial for an entire society can, and has been, the cause of much human suffering and widespread panic, in large measure, perhaps, due to considerably delayed public action against fairly visible signs of overall ill health of the American economy. In addition, because this economy is the largest in the world, with a projected GDP of \$14.25 trillion in 2008, that is more than three times the size of the next largest economy, that of Japan, its poor performance drags down the performance of virtually all other economies of the world, simply because America is the biggest buyer of almost all commodities except petroleum, in which China leads the world. The only fortunate consequence (fortunate for the petroleum importing countries) has been the fall in the price of crude oil from a high of over \$140 per barrel to around \$70 a barrel, because the demand for crude oil, while fairly price inelastic, is actually income elastic.

articulated by, among others, Congressman Frank Wolf of Virginia, who must be credited with a deep and early appreciation of this phenomenon.⁶ Before proceeding to find another explanation, it should be explained why Congressman Wolf's explanation is unfounded. My purpose here is to subject claims such as those of Congressman Wolf's to a careful scrutiny, and to ascertain the real causes of the financial crisis of the early 21st Century. I argue that not only are his claims well-founded, but that a more widespread deprivation of early 21st Century is bound to occur and will to be quite protracted.

2. What is the Root Cause of the Great Deprivation of Early 21st Century?

It was a long-standing political stance of the U.S. to engage China, at least since the *Ping-Pong Diplomacy* of President Nixon and Secretary Kissinger, which led up to the U.S. granting to China in 2000 a *permanent* Most Favored Nation Status. Subsequently, in 2001, China was inducted in to the World Trade Organization. The consequence was that while in 1990, one year after the Tiananmen Square massacre in Beijing, the U.S. trade deficit with China was \$6 billion, in 2007 it stood at a whopping \$251 billion, higher by far than with any other country in the world. The U.S. imports from China in 2007 were worth \$321 billion, and European imports from China stood at \$300 billion. This is because the Chinese manufacturing workers earn \$6/day, contrasted with the American minimum wage that is above \$6/hour (for an eight-hour day).⁷

Moreover, again as a matter of political policy, in late September 2001, President Bush lifted trade sanctions imposed under the terms of the 1994 Nuclear Proliferation Prevention Act following India's nuclear tests in May 1998.⁸ From virtually no economic ties between the two countries for over three decades, in 2007 the U.S. exports to India were more than \$17 billion, and the U.S. imports from India were \$24 billion. The United States is now India's largest trading partner.

As has been the case with China, India has also been the recipient of significant Foreign Direct Investment. From 1991 to 2004, the stock of FDI inflow to India increased from USD \$11 million to \$344 million, totaling \$4.13 billion, which constitutes a compound rate of growth of over 57% annually. Further, the United States is one of India's largest direct investors. American direct investment in India in 2007 stood at \$9 billion, accounting for 9% of total foreign investment into India, with a concomitant outsourcing of skilled American jobs to India. This is because Indian skilled workers earn less than \$20,000/year, with comparable workers in the U.S. earning anywhere between 60 and 150 thousand dollars annually.⁹

Starting in 1998, right up to 2005, there was a real estate boom in the U.S., fed in part by the injection of Chinese trade-surplus-generated foreign exchange earnings into the U.S. financial markets, and in

⁶ In fact, On March 24, 2004, Virginia Congressman Frank Wolf asserted, "As the fast-rising trade deficit with China documents, many of those jobs have gone to China as U.S. firms have moved their factories there. ...these deficits are composed of goods America recently produced for itself with U.S. workers in U.S.-based factories. ... That deficit is a major reason the U.S. is losing its manufacturing base. ... Commerce Department data show that since December 1997, over 3 million U.S. manufacturing jobs have been eliminated as imports replace domestic production."

⁷ As noted by Congressman Frank Wolf, American capital moved to China in huge doses, causing plant closings in the U.S., and opening up American-capital financed manufacturing units in China.

⁸ This was related to India agreeing to monitor sea lanes for terrorist activity from Singapore to the Suez Canal.

⁹ Since India was a British colony, just as was America, a great many Indians are English speaking. Add to that the fact that the population of India is over one billion, and the fact that despite a literacy rate of only 61%, since the Indian government since independence in 1947 has made education free from primary level to PhD, there is a sizable army of educated, English speaking workers, a good many of whom belonged to a category known as 'Educated Unemployed'. It is not surprising, therefore, that it is now possible for an X-ray radiograph taken in the U.S. to be digitalized, sent as an attachment to an email to a radiologist in New Delhi, it is read by a well-trained Indian radiologist, and the report sent back to the U.S. by email, all for \$20,000/year, instead of paying an American radiologist \$120,000/year.

part by the recycling of foreign exchange earnings of petroleum exporting countries. America also has the lowest down-payment requirements for house purchases in the world, so that when the former Federal Reserve chairman Alan Greenspan cut the FED funds rate more than a dozen times in a row, these actions reduced the cost of borrowing, including the cost of mortgage financing, which in turn greatly increased demand for housing.

There was also a dramatic improvement in the American terms of trade when in 1997-98 the currencies of S. Korea, Thailand, Malaysia and Hong Kong depreciated by fifty percent, and that of Indonesia depreciated by 80% in a mere 10-month period. As we know, an improvement of a country's terms of trade raises its real income. American's became richer in terms of real purchasing power with respect to purchases of imports from these East Asian countries, following the so-called East Asian Currency Crisis. This increase in American real income, in addition to injections of foreign countries' net export earnings into the American financial markets, in combination with low-down payment requirements and successive interest rate cuts during Greenspan's tenure as the Federal Reserve chairman, together led to such a real estate boom that more than two-thirds of American households 'owned' their homes by 2005.

However, as more Chinese manufactures were imported, manufacturing production started to decline in the U.S.; more American workers were laid off. In addition, as more American corporations moved operations in the Information Technology and Pharmaceutical sectors to India, outsourcing of jobs to India mounted, and more American skilled workers lost jobs. In fact, by the end of October 2008, the unemployment rate in the U.S. was at a seven-year high. Unemployed people cannot make mortgage payments. Mortgage defaults thus rose sharply. In fact, in the twelve-month period ending August 2008, foreclosures in the U.S. had increased 105%.

In the heydays of the real estate boom, a collection of a couple of thousand mortgage loans from different states in America, known as a Mortgage Backed Security, or MBS, became the asset of choice for American banks, foreign banks, investment banks and retirement funds. There were sufficient real causes, distinguished from speculative causes, for real estate and MBS booms in the U.S., and there were, subsequently, sufficient real causes of a real estate bust, arising from increasing unemployment, due to outsourcing of skilled jobs to India and imports of significantly cheaper manufactured imports from China, among other countries. As a consequence, some 20% or so loans in the MBSs became non-performing by October 2008.

There was nothing 'sub-prime' about the MBSs in the heady days of the real estate boom. But, with increasing job losses, and the consequent increases in mortgage defaults in the U.S., the real estate boom came to an end, leading to one of the sharpest falls in the market prices of MBSs. For example, the investment banking firm Merrill Lynch sold \$31 billion worth of MBSs in July 2008 for 22 cents on the dollar. The pre-conditions of *The Great Deprivation of Early 21st Century* in the U.S. were fully in place by the end of 2001, and by 2004 its effects were being felt, as noted by Congressman Wolf. Its financial manifestations, however, only became sufficiently visible to some in 2007 and to others in 2008.

Now the prices of MBSs with 75-80% well-performing mortgage loans have a market price of zero. Why? Simply because there is virtually no demand for these assets. Why? First, the supply of \$6/day manufacturing workers in China has not been exhausted. Nor has the supply of \$20,000/year educated, skilled English-speaking workers in India been exhausted. So, more job losses and thus foreclosures will occur. Potential buyers of these MBSs are naturally wary of acquiring such assets that contain

loans more of which will become non-performing. They consider these assets 'toxic'.

Thus the process of increases in unemployment across a wide array of skill categories has not ended in America. Nor indeed is the process of the consequent increases in bankruptcy filings and house foreclosures over yet. With more bankruptcies and foreclosures in the offing in the months and years to come, it is no surprise that Ben Bernanke, the chairman of the Federal Reserve Bank, is urging the U.S. Congress to take such action that, "With the economy likely to be weak for several quarters and with some risk of a protracted slowdown, consideration of a fiscal package by Congress at this juncture seems appropriate."¹⁰

Second, since a larger proportion of loans in the MBSs will necessarily become non-performing, if buyers of MBSs are risk averse, there is also a risk-bearing costs (equal to the risk premium associated with the risky asset) that could be high enough to snuff out all demand, and send the market price of MBSs tumbling down to zero.

Third, since the mortgage loan originators knew that the loans would be bundled into MBSs and sold, their incentive for doing due diligence, as required by law, was considerably diminished. This produced some MBSs that were 'lemons'. Adverse selection therefore is yet another cause of the vanishing demand for MBSs, despite the bulk of the loans contained in them being well-performing, simply because a potential buyer does not know, with regard to future loan defaults, which MBS is a lemon and which is not .

Fourth, at present, out of every four high school graduates in America, only one finishes college. Therefore there are not enough American workers who are employable in the category of jobs in innovation, R&D, and the like, that are the comparative advantage of the U.S., or there are enough Indians, East Europeans and other foreigners willing to do this work for substantially lower wage rates. In the foreseeable years, there cannot be a sudden increase in the number of skilled, educated, employable college graduates – simply because this process, even if started right away, take an average of four years to convert a high school graduate into a college graduate. This is precisely the reason why the deprivation episode of the early 21st Century is likely to be quite protracted. To expect the American economy to recover from its stagnant state by 2010 is highly unrealistic. In fact, it would be overly optimistic to expect the 'recovery' to even begin before 2011. The U.S. unemployment rate should be expected to increase.

There is one additional significant fact that deserves notice. Income inequality has increased in the U.S. to the highest level since the start of the Great Depression in 1929. With some American capital having moved to China and India, American capital owners have incurred lower labor costs, thereby experiencing higher profit incomes. Simultaneously, American manufacturing and skilled workers who lost jobs to the Chinese and the Indians have experienced a fall in their incomes. Thus some have become richer in America, and others have become poorer. Actually, the top 1% of income earners in the U.S. garnered 8% of national income in 1980, but now they earn over 20%. This is depicted in Figures 9 and 10 below. This considerably higher income inequality implies that the increase in spending by richer, capital-owning Americans is more than offset by a decline in spending by poorer non-capital owners, because the richer persons have a higher marginal rate of saving (and therefore a lower marginal propensity to spend on consumption). This is a crucial point that must also be taken into account in evaluating the remedies to what ails the economy, especially in light of the fact that by

¹⁰ October 20, 2008.

during 2008 alone, job losses in America are in excess of three-quarters of a million persons, with the attendant hardship suffered by their families. Indeed, even if an expansionary fiscal policy like the New Deal is adopted, that would definitely serve to generate additional demand for labor in public-works programs such as infrastructure development, but these new jobs would be low-wage jobs, and while somewhat beneficial, will still keep large numbers of Americans at lower standards of living than was earlier the case.

The lesson to be learned from all this is that the adoption of policies merely for cleaning up the balance sheets of banks, investment banks, retirement funds and insurance companies is, by itself, doomed to fail. Such policies only treat the symptoms, not the disease, so that the symptoms will reappear subsequently. A much more comprehensive policy mix would appear to be necessary to pull Americans out of the deprivation from which they are already suffering, one which is likely to be quite protracted.

In the following I develop a simple, formal, general equilibrium model of the American economy in two steps. First the model of the economy in its pre-2000 phase is developed in Section 3. In Section 4, I describe the solution of the model. A non-Walrasian temporary general equilibrium model of the American economy with fixed prices and quantity constraints, intended to capture the salient features of the economy after it experienced a social earthquake-like structural shock due to a sudden exposure to 2.3 billion people of China and India, is presented in Section 5. This immediately leads to a comparison of the equilibria the two structurally different economies, which reveals the real causes of the financial crisis of early 21st Century. In Section 6, I offer some concluding remarks, and allude to some potential remedies for *The Great Deprivation of Early 21st Century*. Whereas these models are real in nature, I present in Appendix I a fully monetized model of the economy that exhibits commodity trade, factor (capital) flows and financial flows. Appendix II deals with some issues of interpersonal income distribution and changes therein.

3. A Miniature Model of the American Economy

Let all economic activity in the American economy be divided into three broad sectors, the export sector, with a domestic output of X , the import-competing-good sector with domestic output M , and an internationally non-traded good sector with an output of N . We can, if it helps, think of X as the output of skilled services (IT, R&D, etc.), M as industrial output (of TVs, computers, refrigerators, cars, etc.), and N as the output of home goods (such as roofing services, health-care services, and so on), which require contact between a provider and the customer.

Let the production function in the export sector be,

$$\hat{X} = F(\hat{S}_X, \hat{K}_X), \quad (1)$$

where S_X and K_X are the employment of skilled labor and capital, respectively, and $F(\)$ is a concave and linearly homogeneous production function with indispensable inputs and positive and diminishing marginal products.¹¹ Similarly we can specify,

$$\hat{M} = G(\hat{L}_M, \hat{K}_M), \quad (2)$$

¹¹ For a two-input production function, concavity, constant returns to scale and diminishing marginal products together imply that inputs are cooperative, insofar as a larger employment of one factor induces an increase the marginal productivity of the other. That is, $F_{SK} = F_{KS} > 0$.

A ‘hat’ over a variable denotes its endogenously determined general equilibrium value in the initial, pre-structural-shock state of the economy.

where L_M and K_M are the employment of unskilled labor and capital in the domestic production of manufactured goods, and $G(\cdot)$ is a similar production function.¹² In the non-traded sector, the production function is

$$\hat{N} = H(\hat{L}_N, \hat{S}_N), \quad (3)$$

Where L_N and S_N , are the employment of unskilled labor (as roofers, for example) and skilled labor (as medical doctors, for example), respectively, and $H(\cdot)$ is again the usual production.

In (1), (2) and (3), capital is internationally mobile, as well as intersectorally mobile across export and import-competing production sectors. Unskilled labor is only mobile between the import-competing and the non-traded sectors of the economy, and its supply is exogenously fixed. While skilled labor is intersectorally mobile between the export and non-traded sectors, it is internationally immobile, and its supply is perfectly inelastic.¹³

I assume that all markets are perfectly competitive. That is, all three sectors are populated by many, though finite, firms that act as price takers in both commodity and factor markets. Further, all firms in each sector are cost-minimizing profit maximizers, and there is free entry and exit of firms in long-run Walrasian general equilibrium. Then, international mobility of capital implies that, in general equilibrium,

$$p_X F_K(\hat{S}_X, \hat{K}_X) = r^*, \quad (4)$$

where p_X is the exogenously specified world price of the country's export commodity, which one might recall is IT services, F_K is the marginal product of capital, and r^* is the exogenously determined world rental rate of capital.¹⁴

Similarly for the import-competing sector, international capital mobility implies that the value of marginal product there must also equal the same rental rate of capital that prevails in the world economy. Thus,

$$p_M G_K(\hat{L}_M, \hat{K}_M) = r^*, \quad (5)$$

where again, p_M is the world price of the manufactured good that this economy's import-competing sector takes as parametrically fixed, and G_K is the marginal product of capital in manufacturing.

In the pre-shock state of the economy, the values of marginal product of unskilled labor in

¹² Throughout, I treat manufacturing workers as unskilled workers, not because they are completely unskilled, but because they are less so.

¹³ Agriculture contributes barely 2% to GDP and employs less than 1% of the labor force. This stylized fact is utilized in making some bold assumptions in the formulation of the model of the American economy, with the linkages to India and China to be specified presently.

¹⁴ Notice that this r^* is the effective world rental rate of capital that American entrepreneurs can avail of in general equilibrium, *before* they have access to much lower manufacturing and IT wage rates in China and India, respectively, and *inter alia* before they can avail of the consequent higher returns to capital investment in these countries (due to lower labor costs).

manufacturing and non-traded sectors must to be equal in general equilibrium, as is the case with the values of marginal products of skilled labor in the export and non-traded sectors. Thus, we have

$$p_M G_L(\hat{L}_M, \hat{K}_M) = \hat{p}_N H_L(\hat{L}_N, \hat{S}_N) = \hat{w}_L, \quad (6)$$

and

$$p_X F_S(\hat{S}_X, \hat{K}_X) = \hat{p}_N H_S(\hat{L}_N, \hat{S}_N) = \hat{w}_S \quad (7)$$

where w_L and w_S are the economy-wide unskilled and skilled wage rates determined endogenously in general equilibrium.

In (6) and (7), it is important to make a distinction between the pre-shock real-sector conditions that obtained, and the state of affairs post-shock. Thus we also have,

$$\hat{L}_M + \hat{L}_N = L, \quad (8)$$

where L was the fixed supply of unskilled labor, and (8) is its sectoral allocation before 2001, and

$$\hat{S}_X + \hat{S}_N = S, \quad (9)$$

where S was the fixed supply of skilled labor, with (9) as its sectoral allocation before 2002.

Domestic demand and supply of the non-traded good sector determines the domestic price of the non-traded good in equilibrium, so that,

$$\hat{C}_N(p_X, p_M, \hat{p}_N, \hat{Y}) = \hat{N}(\hat{p}_N, r^*, \hat{w}_L, \hat{w}_S), \quad (10)$$

where Y is national income (or the GNP of the country), that is an argument of the domestic aggregate demand function for the non-traded good in (10),

$$\hat{Y} = p_X \hat{X} + p_M \hat{M} + \hat{p}_N \hat{N} = \hat{w}_L(\hat{L}_M + \hat{L}_N) + \hat{w}_S(\hat{S}_X + \hat{S}_N) + r^*(\hat{K}_X + \hat{K}_M) \quad (11)$$

on the presumption that all human and physical capital employed in the country in the initial general equilibrium are domestically owned.¹⁵

This completes the specification of the model, except for an explicit treatment of the currencies and foreign exchange rates, on which I comment in the Appendix I, and issues of interpersonal income distribution that I take up in Appendix II.

4. Initial General Equilibrium

To see how the equilibrium values of the endogenous variables are determined by the relationships of the model of the American economy, before the tsunami of 2.3 billion people hit the U.S., some

¹⁵ There are some issues related to the interpersonal distribution of endowments, and *inter alia* the distribution of income in the economy, with serious implications for both the interpersonal aggregation of commodity demands and for the assumption of interpersonal comparability of these personal demands, in the empirically significant case when the incomes are unequally distributed. This pertains to both descriptive and prescriptive matters. I take these up in Appendix II.

pictures might help. These are presented in Figures 1 through 4 below.

Notice that in the model, the exogenous variables, are p_X , p_M , r^* and L and S , the world prices of the export good, the import-competing good (equal to the world price of imports), the world rental rate, and the inelastic supply of unskilled and skilled labor, respectively. To obtain the reduced form of the model, substitute for L_N from the unskilled labor supply constraint (8) in (6), for S_N from the skilled labor supply constraint (9) in (7), and substitute for Y from (11) in (10). With these substitutions, taken together with (4) and (5), (6), (7) and (10) are five equations in five endogenous variables: K_X , K_M , L_M , S_X and p_N . These five relations uniquely determine the general equilibrium values of these five endogenous variables, and then the rest are obtained by appropriate substitutions.¹⁶

Of course, in addition to the assumptions made about the structure of production, it is important to note that some additional assumptions have to be employed to guarantee the existence and stability of equilibrium. These are (I) the skilled and unskilled wage rates and the price of the non-traded good are perfectly flexible; (II) personal preferences are defined on the set of ordered triples of the quantities of the three commodities consumed by a person, and these preferences are represented by a binary of relation of weak preference that completely orders a finite set of alternatives. This relation satisfies the properties of strong monotonicity and convexity and continuity.

These assumptions not only guarantee the existence of general equilibrium, but they also produce downward-sloping excess demand curves for all commodities and factors of production, so that under the a wide array of adjustment mechanisms, this general equilibrium is, in fact, stable. Of course, because Walras law for markets holds, only relative prices are determined in general equilibrium. This solves the model completely, and a graphical solution is presented in Figures 1 – 4.

5. Adjustment to Structural Shocks

The stage is now set to subject this economy to a sudden exposure to 2.3 billion people, starting 2000-2001, with vast numbers of low-cost unskilled, manufacturing workers in China (willing to work for $w_{China} < \widehat{w}_L$) and low-cost skilled workers in India (willing to work for $w_{India} < \widehat{w}_S$), thereby offering to the American capital owners greater profit-income opportunities, if only they would move their capital to these countries to avail of significantly lower labor costs.

Given lower labor costs, the rate of return on American-owned capital becomes higher, so that (4) and (5) change to (4a) and (5a), respectively, insofar as the values of marginal products in the Chinese manufacturing and Indian IT-related activities now equal $r^{**} > r^*$ in China and India. Moreover, in the post-structural shock state, (6) changes to (6a) and (6b), and (7) changes to (7a) and (7b) below. All four of these changes constitute structural shocks, not infinitesimal changes. More on that presently, in Section 6.

The new, post-2001 structural model consists of (1) – (3), (10) – (11), and

$$p_X F_K(\tilde{S}_X, \tilde{K}_X) = r^{**} > r^*, \quad (4a)$$

¹⁶ From (8) and (9) the values of \hat{L}_N and \hat{S}_N can be obtained. Substituting the value of all of these endogenously determined values in (1), (2) and (3) gives the general equilibrium values of the outputs of the three sectors, and from (6) and (7) we obtain the two wage rates.

$$p_M G_K(\tilde{L}_M, \tilde{K}_M) = r^{**} > r^* , \quad (5a)$$

$$p_M G_L(\tilde{L}_M, \tilde{K}_M) = w_{China} < \hat{w}_L , \quad (6a)$$

$$\tilde{p}_N H_L(\bar{\bar{L}}_N, \bar{\bar{L}}_N) = \hat{w}_L , \quad (6b)$$

$$p_X F_S(\tilde{S}_X, \tilde{K}_X) = w_{India} < \hat{w}_S , \quad (7a)$$

and

$$\tilde{p}_N H_S(\bar{\bar{L}}_N, \bar{\bar{S}}_N) = \hat{w}_S . \quad (7b)$$

Equations (8) and (9) no longer hold in the new, non-Walrasian temporary general equilibrium with *fixed domestic unskilled and skilled wage* rates that are pegged at the pre-shock values, due to which quantity constraints emerge, as in Neary (1980) and DeLorme, Naqvi and Wemhöner (1995), among others.

The solution of this second structural model is presented in Figures 5 – 8 below. Here $U^{Unskilled}$ and $U^{Skilled}$ are the unemployment of American manufacturing and skilled workers, respectively. These are the persons who lost jobs as a consequence of the sudden and abrupt exposure of the American economy to the economies of China and India between 2000 and 2002.

To see how the endogenous variable values are determined in the post-structural shock of the economy in general equilibrium of a very different nature, notice that from (4a), (5a), (6a) and (7a) the values of the four variables $\tilde{K}_X, \tilde{K}_M, \tilde{L}_M$ and \tilde{S}_X are uniquely determined.

A heuristic explanation is that, once the politically imposed barriers to American capital investment in China and India were dropped in 2000 and 2001 respectively, a higher rate of return on capital r^{**} could be earned, because of a lower unskilled wage rate in China w_{China} , and a lower skilled wage rate in India w_{India} , some American capital started to flow to these two countries. This led to both some manufacturing and some IT businesses closing in the U.S., which, in turn, was associated with employment of smaller quantities of capital in the two sectors at home, in the amounts $\bar{\bar{K}}_X$ and $\bar{\bar{K}}_M$, as indicated in Figure 5 and Figure 6.

With less productive capital employed in these two sectors, there occurs a fall in the marginal products, and therefore the values of marginal products, of unskilled labor in the manufacturing (import-competing) sector, as well as of skilled labor in the IT services (export) sector of the American economy, simply because the two sets of inputs in these sectors are cooperative (positive cross partials of the production functions). From Figure 7 and Figure 8, we see leftward shifts of these values of marginal products curves for unskilled labor in the import-competing sector and of skilled labor in the export sector.

Reduced employment of labor in these two sectors to \tilde{L}_M and \tilde{S}_X leads, in the next round, as it were, to inward shifts of the values of marginal product curves for capital in Figure 5 and Figure 6, again because inputs are cooperative. Thus the final general equilibrium employment of productive capital in the two sectors falls to $\tilde{\bar{K}}_X$ and $\tilde{\bar{K}}_M$, as indicated in these two figures and in Equations (4a) and (5a). The

amount of productive capital that flows to China is simply $\tilde{K}^{China} = \hat{K}_M - \tilde{K}_M$, and the capital flow to India can be seen to be $\tilde{K}^{India} = \hat{K}_X - \tilde{K}_X$, so that $\tilde{k}_f = \tilde{K}^{China} + \tilde{K}^{India}$ is the aggregate productive capital flow from the U.S. to these two countries. It is also useful to define $k_d + k_f = k$ as the total amount of American-owned productive capital, of which k_d is the amount employed at home, which is less than k . There is capital flight from the U.S. to China and India as long as $r^{**} > r^*$.

Since $\hat{L}_M - \tilde{L}_M$ unskilled workers and $\hat{S}_X - \tilde{S}_X$ skilled workers lose jobs in the import-competing and the export sectors, respectively, in (11), the GNP of the country changes from \hat{Y} to

$$\tilde{Y} = p_X \tilde{X} + p_M \tilde{M} + \tilde{p}_N \bar{N} + r^{**} k = (w_{China} \tilde{L}_M + \hat{w}_L \bar{L}_N) + (w_{India} \tilde{S}_X + \hat{w}_S \bar{S}_N) + r^{**} k . \quad (11a)$$

This is a subtle point that deserves explanation. In (11a), we have $\tilde{X} = F(\tilde{S}_X, \tilde{K}_X) < \hat{X}$ from (1) because of lower employment of both skilled labor and capital in the new temporary equilibrium. Similarly, from (2) we obtain $\tilde{M} = F(\tilde{L}_M, \tilde{K}_M) < \hat{M}$ for similar reasons. Since American capital owners have a choice of employing Chinese unskilled workers in China or American unskilled workers in the U.S., in the import-competing sector the wage rate will have a tendency to converge to the Chinese unskilled wage rate. Similarly, Indian skilled workers in the IT services sector are substitutes for American skilled workers in the export sector as far as American capital owners are concerned, because of which this wage rate in the U.S. will also have a tendency to converge to the Indian skilled wage rate.

Such is not the case, however, with the unskilled workers or the skilled workers in the non-traded sector in America. Therefore, in a *temporary* equilibrium with fixed prices and quantity constraints, there need not be such a strong tendency for convergence of these wage rates to the corresponding rates abroad, so that unemployment will have a tendency to emerge as a temporary equilibrium phenomenon at the pre-shock wage rates, thereby leading to the employment of $\bar{L}_N < \hat{L}_N$ unskilled workers in the U.S., with $\tilde{U}^{Unskilled} = \bar{L}_N - \tilde{L}_M$ of these workers becoming unemployed, because the short side of the market always prevails in a temporary equilibrium with fixed prices and quantity constraints. This is displayed in Figure 7. Since this process is still underway, and has not reached completion yet, one should expect the unskilled unemployment rate to rise in the months and years to come. Of course, in a long-run Walrasian general equilibrium, the flood of unemployed workers – both skilled and unskilled – both wage rates will have to fall in the U.S., since the exposure to china and India is now a reality for Americans.

By a similar argument, $\tilde{U}^{Skilled} = \bar{S}_N - \tilde{S}_X$ skilled workers will become unemployed in the U.S., as indicated in Figure 8, again as a temporary equilibrium with fixed prices and quantity constraints. This process is also not complete yet. However, the numbers of skilled Indian substitute workers are far fewer in number, so that this process should be expected to be completed earlier.

There is, however, another problem that the U.S. faces in the case of skilled workers. First, there is no actual shortage of demand for unskilled workers; if there were, why would skilled jobs be outsourced to India. It is merely that the American skilled workers have to get accustomed, in the long term, to working for lower salaries than they were used to in the pre-shock state of the economy. Second, as already noted, since only one out of every four high school graduates in the U.S. finishes college, getting educated takes years, and since the kind of new jobs that are created in America are of a skilled nature, in turn due to the American comparative advantage in innovation and R&D, the phenomenon of there being far too many unemployable American workers should also be expected to persist for a few

years. This phenomenon will exhibit itself alongside the unemployment of that category of skilled workers for whom there are substitutes available in India.

In any event, $\tilde{Y} \neq \hat{Y}, \bar{L}_N \neq \hat{L}_N, \bar{S}_N \neq \hat{S}_N$. Therefore, this, and the fact that with quantity constraints the price of the non-traded good, \tilde{p}_N , in the new non-Walrasian general temporary equilibrium is simply not, in general, the same as this price, \hat{p}_N , in the initial, pre-structural-shock general equilibrium. To see this, note that (10) changes to

$$\tilde{C}_N(p_X, p_M, \tilde{p}_N, \tilde{Y}) = \bar{N}(\tilde{p}_N, r^*, \hat{w}_L, \hat{w}_S, \bar{L}_N, \bar{S}_N). \quad (10a)$$

There is still the issue of an increase in interpersonal income inequality concomitantly with a positive rate of growth of real national income until 2008, and a contraction of this aggregate that is expected 2009 onwards. The model presented so far is not capable of handling this issue. However, an extension is proposed in Appendix II that does indeed address this matter and the issues of aggregation and interpersonal comparability, both in the context of description (positive analysis) and in the context of developing policy prescription (inevitably a normative analysis).

To compare the collective human wellbeing actually realized by the American people in the two general equilibria, all we have to now do is to specify a collective human well-being evaluation measure. Then we would be ready to solve for the value of this index in the pre- and post-structural-shock situations.¹⁷

6. Concluding Remarks

The problem, however, is more intricate. It is as if the American economy is now caught in the classic Liquidity Trap of Lord Keynes: consecutive interest rate cuts are simply not spurring up productive investment spending, in terms of creating new businesses or expanding existing ones. This also is not all. An increase in aggregate government spending in terms of expansionary macroeconomic fiscal policy will also fail. This is because while the unemployed may get temporary relief, these will be jobs in the public works programs, which are low-wage jobs, and not the ones that provide a high standard of living in the intermediate to long term.

Insufficiency of demand for skilled labor in the U.S. is, in general, the not problem. The decline in such demand is only for those specific types of skilled workers for whom easy substitution is possible from amongst Indians in India, so that only such skilled jobs get outsourced to India? Moreover, in the private sector, the kinds of jobs typically created in America are in the range of innovation, R&D, and at the upper end of the skilled spectrum. There is still demand for a wide array of such other type of skilled workers, for whom substitutes in India cannot be found, but a very large fraction of American workers are, for the first time, *not employable*., because they lack these skills. So, what is required is

¹⁷That is, for the phases both before and after the American economy was suddenly exposed to 2.3 billion people we can then ascertain the impact on the extent of realization of well-being of the American people, or lack thereof. The collective human well-being evaluation index I would adopt is $W = y^\alpha (1 - G)^\beta$, where y is per capita income, G is the Gini coefficient of the interpersonal income distribution in the US, and α and β are non-negative parameters that embody the value judgment regarding how much weight in social evaluation should be given to distributive considerations and how much to the scale of average achievements. For an axiomatic derivation and for a persuasive justification of the use of this measure of collective human well-being, see Sen (1976) and Naqvi (2008). Suffice it to say that this Collective Human Well-being Evaluation Measure is ordinally measurable. This measure incorporates the distributive value judgment of inverse interpersonal-income rank-order weights. Also, for $\beta = 0$, this index coincides with GDP, for a fixed population size, and thus GDP is a special case of this social evaluation index.

micro-targeted specific human resource development, to provide resources – outright grants for higher education, skill-acquisition and on-the-job training, and loans to support such activities and to provide additional incentives specifically aimed at developing a diverse and highly skilled labor force that is both in demand in the U.S. and is employable. But it takes time for a person to become educated, which is precisely the reason why the Great Deprivation of early 21st Century is bound to be protracted.

In addition, management of unemployment compensation is also a significant issue. If a person loses her job, she gets unemployment compensation from unemployment insurance, but the amount is quite meager, certainly in comparison with countries such as Germany, which has a considerably lower per capita income. In addition, the laws pertaining to unemployment benefits are such that she would get paid for six month, and in the following six month, she must earn at least twenty per cent of what she received in the first six, otherwise she is not even eligible to apply for unemployment benefits. This pushes large numbers of unemployed people in American into both not being counted as unemployed, and into a state of poverty.

Reduction of broadly construed economic inequality by use of such a policy mix as provision of resources and incentives for education and acquisition of skills as part of a coherent human-capital development plan is a long term solution. Along with this, however, is required adoption of poverty reduction measures in the short term, including taking public action against hunger and homelessness in America, particularly for those workers who have been displaced as a consequence of direct or indirect external-sector shocks taking the form of productive capital out flight and cheaper manufactured imports. There has to be a shift away from management of monetary policy, which has already proven ineffective in recovering equity value losses of over five trillion dollars in 2008 alone, despite more than a one trillion dollar injection into the financial system. There also has to be a shift away from macroeconomic fiscal policy, except as a measure of temporary relief. The policy shift would have to be towards microeconomic policy formulation and implementation, especially with regard to a specific human resource structural development programs.

Just calling the \$700 billion bank-cleaning spending-package a ‘Bail-out Package’ or a ‘Rescue Plan’ does not make it so. It takes more than words and labels. More Americans in 2008 have filed for bankruptcy or have faced foreclosure than in any year in the history of the country in the past 80 years, and there appears to be no end in sight. It is not helpful at all to reduce income or capital gains tax rates, certainly not for those who are unemployed or do not own businesses. Interest rate cuts do reduce the cost of borrowing, and in this manner serve to increase profit income (as would be the case with a reduction of capital gains or income tax rates), but we have seen that such policy changes have completely failed to stem the tide of business bankruptcies. As it happens, the ‘trickle down’ that worked during the Regan presidency of the 1980s will fail to be effective across-the-board in America today, because more profitable business conditions for entrepreneurs will cause the trickle to reach China and India, not down to ‘Main Street’ America, because labor costs are much lower abroad.

This argument implies that the problem is not only much deeper than one that merely requires cleaning up the balance sheets of financial organization, but it is also more complex than one that just requires restructuring of mortgage loans to keep people in their houses.

This too is not all. When the U.S. government took 79.9% interest in AIG as part of the bail-out, it bought a controlling interest in a number of insurance activities. The U.S. government is now in the insurance business. AIG, for example, provided insurance against business credit risk, so that, if Air India, for example, were to order 20 aircraft from Boeing, AIG would guarantee the contract, so that if

the manufacturer produced the planes, and if the buyer defaulted, then AIG would cover their losses. At the present time, the U.S. government is engaged in such business as well.

Moreover, as the most evolved free-enterprise economy in the world, U.S. administrations used to routinely criticize countries that nationalized banks, and yet the U.S. government now owns controlling interests in a number of major banks and has thus effectively nationalized banks, and thus now own houses and cars that are now bank owned, as a consequence of foreclosures and repossessions. The American economy has changed, at least for now. The system, the social formation, has undergone internal transformation, and is undergoing further transformation, as part of a process that actually began around 1998.

Just as from the ashes of the Great Depression of 1929-36 emerged a new World Economic Order, with the U.K. losing its economic leadership position to the U.S.A., a new social formation has begun to emerge on the World landscape. It is unlike any system that has come before. But, this should not come as a surprise. It is a fact that economic systems have evolved from one form to another distinct one in social history. As social anthropologists have informed us, there was once *Primitive Communism* as the dominant social formation, about five thousand years ago, but that is gone forever. It was replaced in most societies by the *Slave-owning system*, which lasted a few thousand years. Then came *Feudalism*, which lasted for several hundred years, and in some countries such as Afghanistan and Pakistan it is still alive. In some other parts, as in the United States, there was direct transition from Slavery to *Capitalism*. But, Capitalism has only been around for less than 300 years. Why should one think that this social formation will not undergo transformation – radical transformation – to become a qualitatively different social formation? It would be patently absurd to suggest that new economic systems will cease to appear on the social landscape. Aside from death and taxes, if there is one thing we one count on, it is change. A new social formation has emerged. What we are witnessing is the emergence of a new world economic system, one I like to think of as *World Market Capitalism*, or simply WMC.

It is important to appreciate that an economy is a living, breathing animal. That it has a life of its own. It is not an inanimate object. We are part of it, our beliefs are components of it, as are the institutions, the laws and political structures we create. As we change, as our beliefs get altered, the laws we live by are changed, and the political, economic and social institutions undergo transformation. When sufficient modification occurs in the components of an economy, it becomes a qualitatively different social organism. It is then time to give it a new name, otherwise there is a very real fear of confounding two distinct social formations, and thereby incorrectly seeing them as conceptually identical. That, we must avoid, for clarity of thought and precision of analysis. The partition between the two social formations must be recognized. What is WMC, and what is it not? What are the distinguishing features of early 21st Century capitalism?

First, WMC is not the characteristic of a nation state. What WMC refers to is an entity that simply does not respect national boundaries. It is thus *not* a social formation that is usefully investigated in terms of *units taken to be countries*, as has been the practice in contemporary economics. Unlike some previous conceptions of a capitalist economy, WMC is not trapped within the political boundaries of a nation state. For example, it is pointless to discuss with any coherence the American economy without including its connections with the economies of China and India (or Canada, Mexico, Japan and the OPEC).

Second, it is not *Imperialism, the Highest State of Capitalism*, as prophesied by Vladimir Lenin in

1916, who saw the merging of banks and corporations as the root cause of emergence of *finance capital*, and predicted that *export of capital*, rather than of commodities, would be the norm and the identifying characteristic of the system. On the contrary, in WMC, commodities flow in ever larger volume and value from one region of the World to another, and embodied in these commodities are the lowest-cost labor and the lowest-cost capital, regardless of who owns these resources.

Third, unlike Karl Marx, who saw Capitalism as a mode of production that constituted a stage of transition from feudalism to socialism, WMC is certainly a distinct social formation, but it is *not socialism*, because the means of production do not have social ownership. They continue to be privately owned predominantly, though some erstwhile privately conducted economic activities have shifted to the public domain.

Fourth, in WMC, *capital* whether in terms of human-made tools and implements of production, or in terms of finance capital, *ceases to be a binding constraint*; it flows fast and furious to wherever, in whichever country, developed or not, a safe and high rate of profit can be earned.¹⁸ Effectively, then, it is safe to assume that there is an unlimited supply of capital in the world, or, what is the same thing, those businesses that demand capital face a perfectly elastic supply curve of capital at a parametrically given supply price. This is an essential feature of WMC. The governments of the U.S., the EU and Japan, among others, have lost quite a bit of the control they once had over capital flight into or out of their economies.

Fifth, *unskilled labor* in WMC also *does not constitute a binding constraint*, and thus has a perfectly elastic supply curve, because in the world trading system, manufactured goods can be produced in the lowest-cost regions of the world, and they can then be exported to wherever they are demanded, to supplant any shortage of unskilled labor in that localized region of the world, where the prices of manufactured goods may have been higher. Thus, for all intents and purposes, from the point of view of anyone in the world who wants to buy a manufactured (unskilled labor-intensive) product at the lowest price (equal, in long-run equilibrium, to average cost), it is safe to assume there is an unlimited supply of unskilled labor. This too is an essential characteristic of WMC.

Sixth, skilled labor *would* also have ceased to be a binding constraint, because a much wider array of skilled tasks can now be done far away from the location where final output is demanded, in turn because of the now available information super highway that is firmly in place. In addition, reliable and fast modes of personal transport available at relatively low costs also permits greater contact among parties striking business deals. However, in spite of these facilitating recent developments, *the only binding constraint* in WMC is a resource that is sometimes described as *Human Capital*, or really the size of the educated and skilled labor force.¹⁹

Seven, during the process of emergence of WMC, expansionary monetary policy ceases to be effective in pulling the peoples of the various countries out of the protracted deprivation from which they suffer during the transformation. Instead, expansionary fiscal policies, not merely aggregative in the sense of

¹⁸ It follows that a shortage of capital for workers to work with, a phenomenon induced by it called *Marxian Unemployment*, cannot arise in WMC, because only a foreign-investment-hostile climate can keep foreign capital away, and thus be the cause of a capital shortage.

¹⁹ The reason that energy ceases to be a constraint that bites as hard as the skilled-labor constraint is that while substitution possibilities exist among crude oil, natural gas, bio-fuels, solar energy, wind energy, hydroelectric energy, and nuclear energy, among others, it is difficult to find an economist or a physicist as a substitute for a cardiac surgeon to do angioplasty. Thus easy substitutability among skilled workers of different types is not really an option.

being macroeconomic, but a set of specifically targeted fiscal policies intended to remedy particular economic imbalances in a country, become the only public policies that are effective in alleviating extensive human deprivation.²⁰

In this context, there is much to be learned from the so-called East Asian Currency crisis that began in 1997-98. Between June 1997 and February 1998, the currencies depreciated by 50% in Thailand, S. Korea and Malaysia, and by 80% in Indonesia. This caused a massive deprivation episode from which these countries have yet to recover. To get an idea of this, consider, for example, the world market for rice, which is consumed as a staple in these countries. Since the world price of rice is dollar denominated, marginal-income families could buy only half as much rice with their incomes after their currencies had depreciated. As a consequence of such impoverishment (measured in terms of an internationally traded good such as rice), in Malaysia, there were communal riots in which the businesses of many Malaysians of Chinese ethnicity were burnt. In Indonesia, the regime of Suharto, a dictator who had ruled with an iron hand, was overthrown. In South Korea some women who gave birth left their newborns at the steps of different churches around the country because they knew that they would simply not be able to feed them – these children came to be known as IMF Orphans, because the IMF gave a one-time or two-time injection of money in an attempt to prop up the values of these currencies.

This of course failed, because the cause of this currency depreciation was a decline in U.S. demand for the currencies of these countries, in turn due to a fall in the rate of growth of U.S. import demand for East Asian commodities (because China was getting its most favored nation status *temporarily* renewed annually, as a prelude to receiving this status on a permanent basis in 2000). A decline in import demand growth is an annual *flow* phenomenon. Since this fact was not appreciated, a couple of stock injections that were given by the IMF could not possibly fix this problem, because a flow is one that recurs year after year.

It is crucial to remember that if something is called a ‘currency crisis’ as in the case of East Asia starting 1997-98, or a ‘Financial Crisis’ as starting in 2007-08 in the U.S. and then in the world, it only serves to shift attention away from the real (non-monetary) causes and thus consequences. The usage of such nomenclature has the unfortunate consequence of diverting attention away from the human suffering, and thereby leading even seasoned economists to focus far too much effort on relatively less significant matters such as the ‘contagion effect’, to the complete exclusion of seeking effective remedies for extreme human anguish associated with these phenomena. If this lesson regarding deprivation suffered by human beings is not learned from the so-called ‘East Asian Currency Crisis’, which was only the apparent symptom of a radical real-sector shock, it would be a grave error, with calamitous consequences in the form of human torment, not unlike the agony of mothers giving up newborns, increases in the numbers of orphans, higher incidence of child labor, and greater prevalence of hunger, among other such things. We must not forget that real lives of people are involved, and it is imperative that such policies be adopted that will alleviate human misery that is typical of such Great Deprivation episodes.²¹ For, when people lose jobs, they suffer, their children experience distress,

²⁰ Henrik Egbert’s interpretation points to a shift to a microeconomic management of the economy by the state.

²¹ In addition, there occurs gross misallocation of resources. A phenomenon on the rise in the U.S. is that as more people lose jobs, they lose their medical insurance, so that the emergency rooms of hospitals become their primary care facilities. This creates a situation in which doctors end up attending more to treatment of, for example, cases of influenza-induced fever, and other such medical problems, and they have less time to devote to life-threatening problems that require urgent attention. Many more patients also get shunted from one hospital to another because the emergency rooms of hospital get clogged with relatively less exigent cases. An increase in the incidence of such phenomena affects life expectancy of disadvantaged groups rather adversely.

relationships break up, people get depressed, divorces occur, and families are abandoned. Misery spreads.

If the distinction between the real-sector causes and the financial-sector consequences is not appreciated sufficiently, there is a very high likelihood that the deprivation that has been suffered already by people in the U.S., which is bound to become quite severe in the months and years to come, and which will spread to other countries to cause enormous hardship in other parts of the world, will be ignored once again, because the phenomenon will be seen as a mere 'financial crisis', and the remedies that will be adopted will only constitute a treatment of the symptoms, not a cure for the inherent problem at the core. Ideology is not the issue here, but one of averting needless pervasive human torment.

FIGURES I

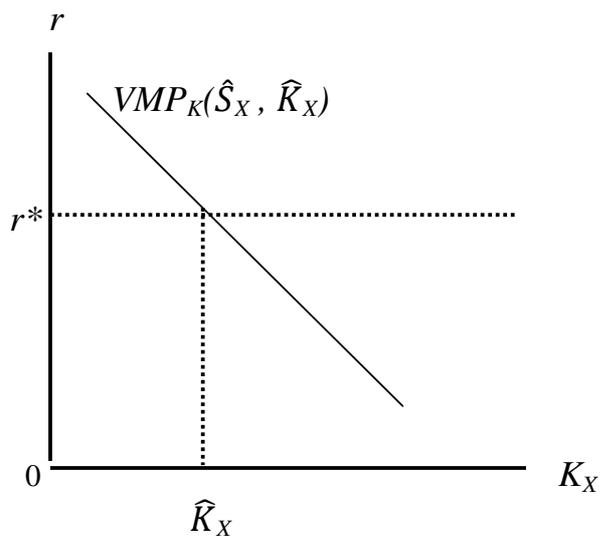


Figure 1 (Graph of (4))

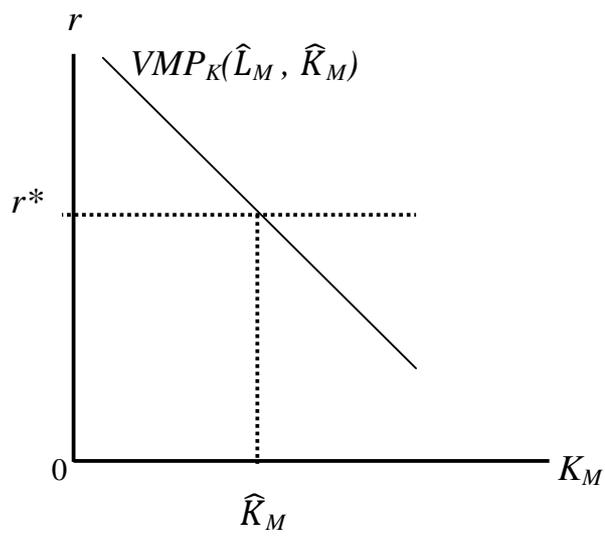


Figure 2 (Graph of (5))

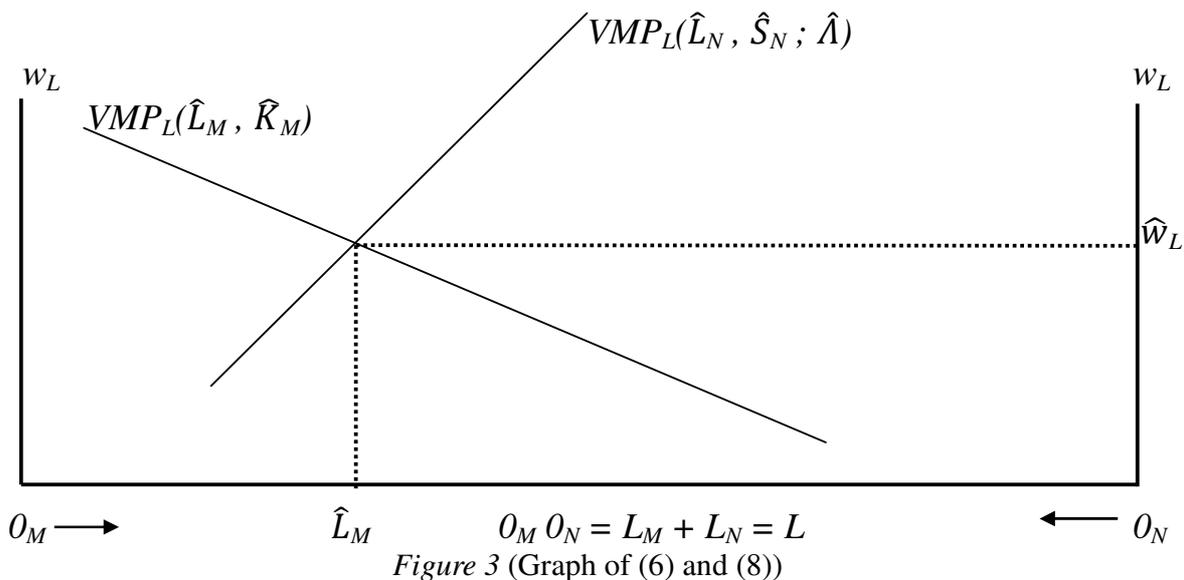


Figure 3 (Graph of (6) and (8))

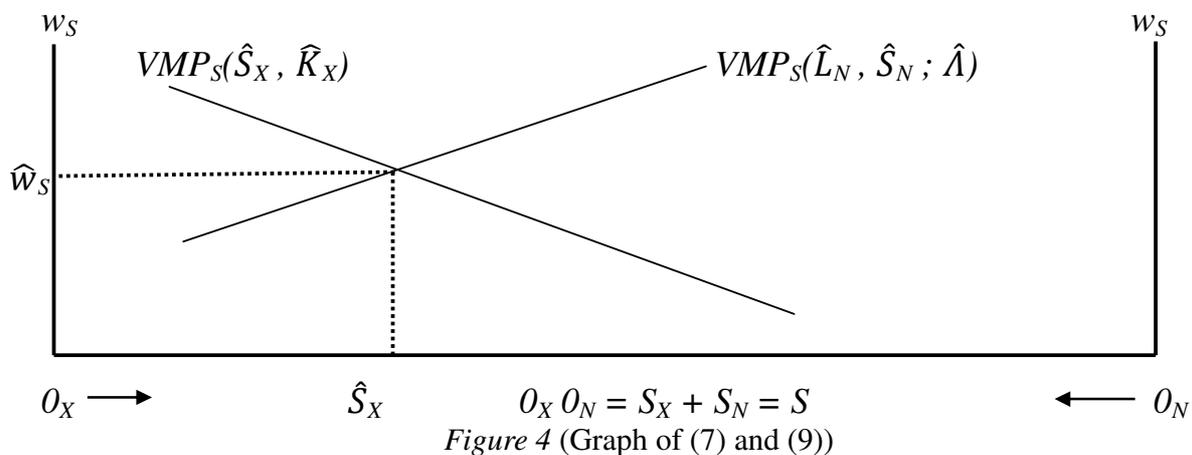


Figure 4 (Graph of (7) and (9))

FIGURES II

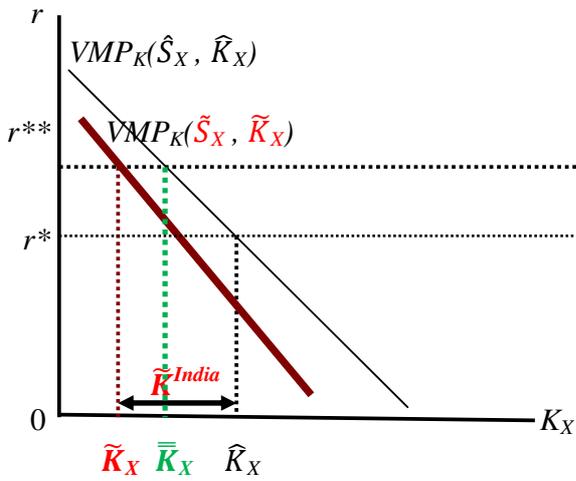


Figure 5 (Graph of (4a))

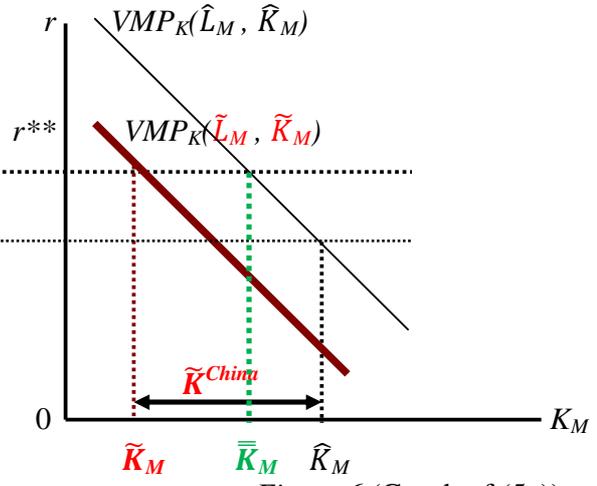


Figure 6 (Graph of (5a))

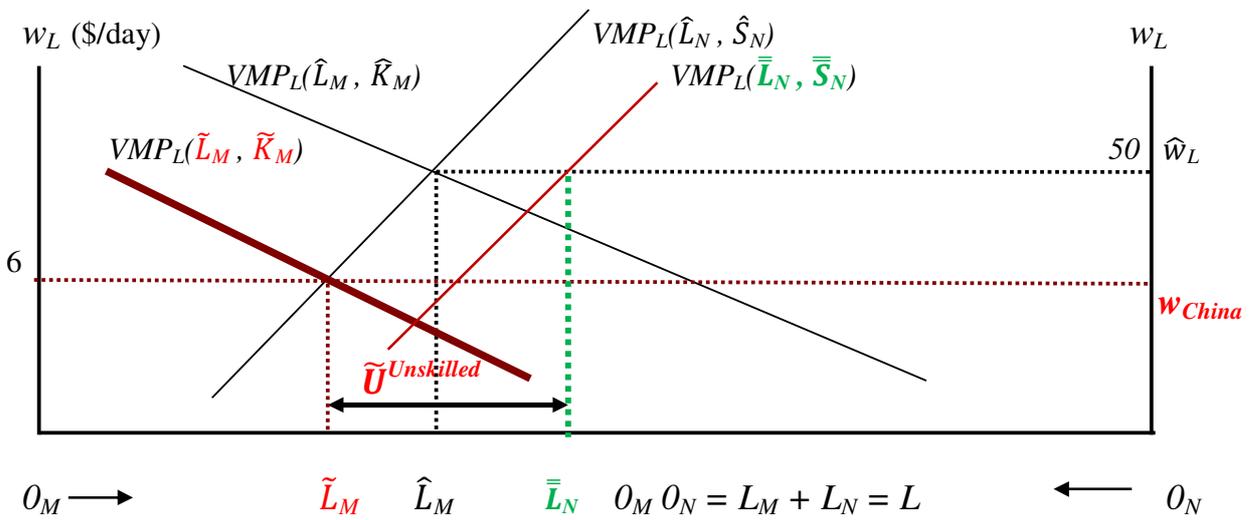


Figure 7 (Graph of (6a) and (6b))

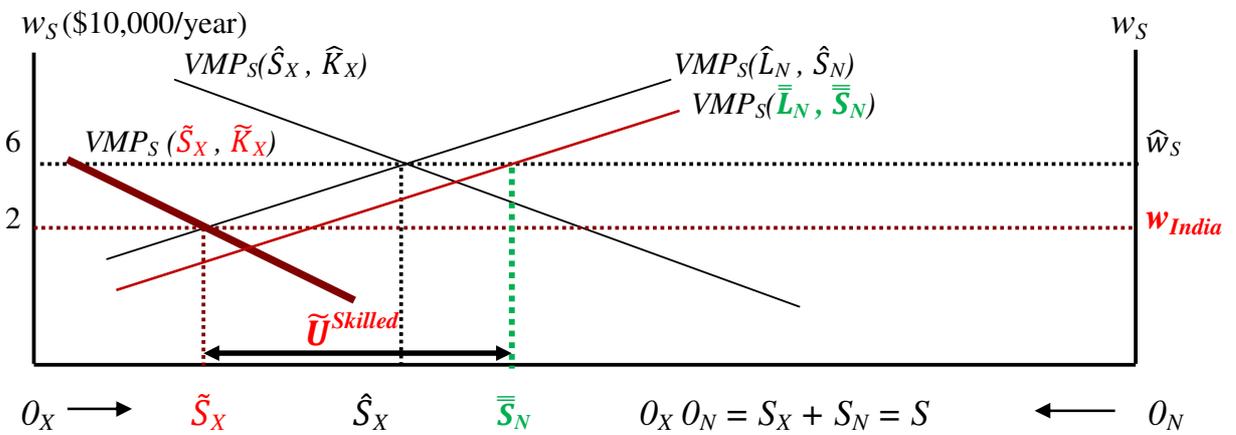
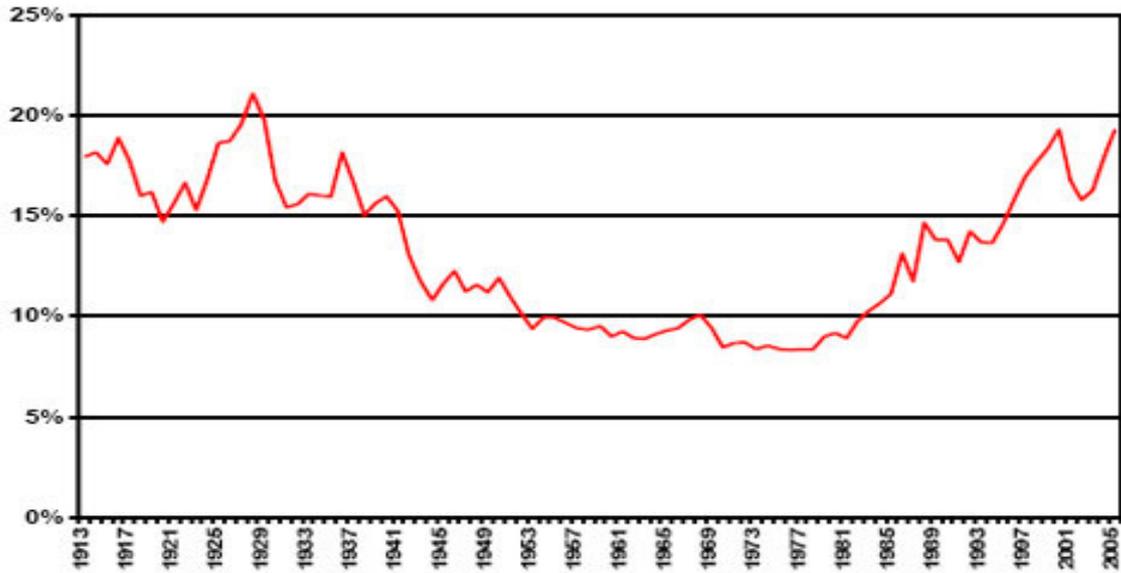


Figure 8 (Graph of (7a) and (7b))

FIGURE 1

Income Share of Highest Income Households Returned to Its Post-Depression High in 2005

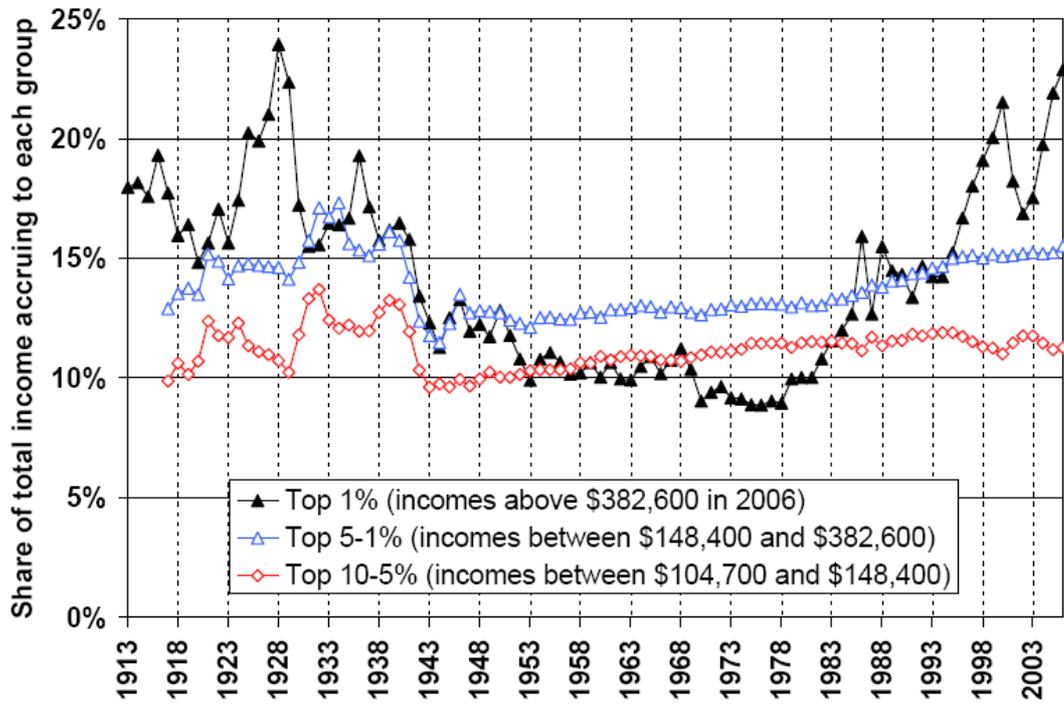
Share of Total Pre-Tax Income Held by Highest Income 1 Percent



Source: Thomas Piketty and Emmanuel Saez, based on IRS data

Computations based on family market income including realized capital gains (before individual taxes).
Incomes are deflated using the official Consumer Price Index.
Source: Piketty and Saez (2003), series updated to 2006

Figure 9



Computations based on family market income including realized capital gains (before individual taxes).
 Incomes are deflated using the official Consumer Price Index.
 Source: Piketty and Saez (2003), series updated to 2006

Figure 10

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Appendix I

Feenstra (1986) demonstrates the equivalence between the model with money in the utility function and a broad class of transaction cost models of money, including inventory-theoretic, liquidity cost models, and the Clower (1967) cash-in-advance formulation. This equivalence offers important guidance for modeling consumer behavior in monetary economies.

Let q_X, q_M, q_N and q be the prices of goods X, M, N and nominal money, measured in a standard unit of account. Define relative prices, $p_X = q_X/q, p_M = q_M/q, p_N = q_N/q$ and $p = q/q = 1$, as the prices of goods X, M, N and money in terms of money. Money is now the *numeraire*, and p_i is the relative price of i .²² We distinguish p_i , which is the *home* (or U.S. dollar) price of good i in terms of money, from p_i^* , which is the *world* price of good i . The units of measurement of p_i^* may be foreign currency units. However, if e is the exchange rate, then ep_i^* is the world price of good i measured in home currency units.²³

Assuming that the economy in question is a small, open economy, it takes p_i^* as exogenously as given on world markets, for $i = X, M$. Further, we can define $P = \phi(p_X, p_M, p_N)$ as an index of home commodity prices, so that $\phi(p_X, p_M, p_N)$ is a positive valued, monotonic increasing, $\phi_i > 0$, and linearly homogeneous function. In this framework, m/P would be the demand for real balances, as in Samuelson and Sato (1984), and Dusansky (1989), among others. To capture the real purchasing power of nominal balances $\phi(q_X, q_M, q_N)$ is to be interpreted as the true cost-of-living index.

The budget constraint of this monetized economy in terms of home prices, or the balance of trade constraint of the economy, is

$$p_X C_X + p_M C_M + p_N C_N + m = p_X X + p_M M + p_N N + r^{**}(k - k_d) + m_0. \quad (A1)$$

In (A1), C_i is domestic consumption demand for good i , and m_0 is supply of money, and $r^{**}(k - k_d)$ is the net American factor income earned from foreign direct investment abroad, in this case from investment in China and India, with k being American-owned productive capital, and k_d the amount of this capital employed at home. By definition, $k_f = k - k_d = K^{China} + K^{India}$, is American FDI abroad.²⁴

To tie up the demand side of the model with the supply side as in (1) – (10) in the body of the paper, all we have to do is to specify that the production possibilities surface is tangent to the commodity price plane, which implies that

$$p_X dX + p_M dM + p_N dN = 0. \quad (A2)$$

Noting that in the budget constraint (A1), since N is a non-traded good, so that $C_N = N$, and denoting American export supply by $E_X = X - C_X > 0$, and its import demand for manufactured goods by

²² Sometimes p_i is also referred to as nominal price.

²³ For example, if $e = 1.3 \text{ \$/€}$ and if $p_i^* = 200 \text{ €/bottle}$, then $p_i = 360 \text{ \$/bottle}$ (of a certain single-malt scotch whisky).

²⁴ Gerald Pech suggests that to include the phenomenon of rising housing prices, as in the real estate market boom, which did occur, even though it was not the sole root cause of the problems facing the American economy today, can be included in (A1) as $p_H(C_h - h) + p_X C_X + p_M C_M + p_N C_N + m = p_X X + p_M M + p_N N + r^{**}(k - k_d) + (m_0 - m)$, so that with $\dot{m} = (m_0 - m) > 0$, an increase in housing prices can be explained, where h is the supply of houses, C_h the demand for houses and p_h the price of a house.

$I_M = C_M - M > 0$, an alternative expression of the budget constraint of this monetary economy is

$$m - m_0 = (p_X E_X - p_M I_M) + r^{**}(k - k_d) .$$

In this version of the economy's budget constraint, if the value of American exports $p_X E_X$ exceeds the value of imports $p_M I_M$, that is, if the U.S. runs a balance of trade surplus, then it undertakes additional hoarding of the foreign currency, which, valued in terms of the home currency, is simply $(p_X E_X - p_M I_M) > 0$.²⁵ In addition, if American net factor earnings from abroad (China and India) are $r^{**}(k - k_d) > 0$, then net annual financial hoarding in the U.S. is increased by this amount, totaling $m - m_0 > 0$ of additional financial claims Americans develop on foreigners annually.

To tie up the demand side of the model with the supply side as in (1) – (10) in the body of the paper, all we have to do is to specify that the production possibilities surface is tangent to the commodity price plane, which implies that

$$p_X dX + p_M dM + p_N dN = 0 .$$

Reality has, however, been quite different. The U.S. has been running a merchandise trade deficit for four decades now, first the largest with the OPEC, then the largest with Japan, and for more than five years now, the largest with China, followed by Japan, Canada and Mexico. Moreover, while net factor income earned by Americans from abroad has been clearly positive, and increasing in the last decade due to growing American FDI in China and India, concomitantly with declining American productive capital investment at home, in size this net earned income from abroad remains dwarfed by the American merchandise trade deficit. Thus China, India, the OPEC, and other countries have been accumulating financial claims annually, in the amount $m_0 - m > 0$, in the form of U.S. dollar reserves.

Quite a substantial portion of these accumulated financial reserves of foreign countries happened to have been held by the Bank of Japan, Deutsche Bank, and Central and private banks of France, South Korea, Britain, and Treasuries of the OPEC countries, among others, in the form of American Mortgage Backed Securities. When these MBSs started to lose value rapidly, because some Americans who became unemployed because of (a) outflow of American-owned productive capital to china and India, and (b) greater imports from china that led to shutting down of plants that had been producing import-competing products, not only did the value of the capital of these institutions decline substantially, but some of them were unable to convert their accounts payables into cash when they matured and became due for delivery to their customers. Still others, especially investment banks, could not come up with cash because seeing the insolvency of so many financial institutions, some customers decided to convert their equity and securities holdings into cash. This also required such institutions and hedge funds to sell the MBSs, creating a glut in the market. This has been the *intermediate* real cause of the financial crisis of the early 21st Century, although the initial, *root* cause was purely political insofar as there was a sudden removal of commodity trade and capital flow barriers between the U.S.A. on the

²⁵ If the petroleum import bill is also explicitly included in the model, this becomes $m - m_0 = (p_X E_X - p_M I_M - p_\lambda A)$, with p_λ as the world price of petroleum (denominated in US dollars) and A as American annual import demand. It can be argued that for the U.S., A is fairly price inelastic, but quite price elastic. If so, then an expected fall in American aggregate spending could easily explain a fall in the world demand for crude oil, and thus a fall in its world price, both because of a direct decrease in American demand, and because of a consequent fall in demand for oil in other countries due to a decline in the production and transport of commodities for which American demand has fallen. This would imply that OPEC modest cuts in oil supply (in the neighborhood of a couple of million barrels per day) will only serve to further reduce their petroleum export earnings, but will fail to raise the world price of oil.

one hand, and China starting around 1997, and on a permanent basis in 2000, and India starting 2002.

Appendix II

Simplification in theorizing per se is valuable. To include details in a model that are not material to the issue of interest goes against the minimalist approach, and is thus analytically uneconomical. Indeed, an argument can be made that even if theory and reality are quite different, as long as the theory predicts well, we ought not to make a fuss about the disparity between the two, no matter how different they are. This argument does have some merit, but only for the purpose of predicting or explaining market behavior, which deals with descriptive analysis. But this argument is completely irrelevant to conducting policy evaluation, which must be based on a yardstick, which, in turn, must inescapably embody a value judgment about the content of the concept of greater economy-wide human wellbeing, for the explicit purpose of making policy pronouncements. It is impossible to simplify a value judgment without altering it because social evaluation is, in fact, specific to the particular social reality itself.

In particular, the assumptions that (1) all persons in an economy have identical preferences, and (2) this common binary preference ordering is homothetic, are sometimes invoked to render differences in personal incomes irrelevant in economic analysis of policy evaluation. In fact, in an economy, the homotheticity of identical personal preferences is sufficient for portraying market behavior and outcome by that of a single, representative (or aggregate) person. However, this homotheticity fails to provide any ground whatever for an equally-weighted aggregation of distinct interpersonal incomes, which is involved in the typical use of a country's real national income for the purpose of policy evaluation in economics. The property of homotheticity of preferences merely says that if a person is indifferent between two personal commodity bundles a and b , then this person is also indifferent between proportionately smaller or larger bundles αa and αb , $\forall \alpha > 0$. Since *ought* cannot be inferred from *is*, it immediately follows that homotheticity of personal preferences does not imply that an equally-weighted sum of distinct interpersonal incomes, also known as real national income, should be taken as a measure of realized public wellbeing. If any particular weighting scheme of distinct persons' incomes is adopted, including an equally-weighted one, for making policy evaluation judgments, it constitutes an exogenously imposed value judgment, not one entailed by homotheticity. Judging by the confusion in the policy evaluation literature, I cannot overemphasize this important distinction between the roles of homotheticity in description versus evaluation. The argument presented here paves the way to look for measures of collective human wellbeing such as the one in (12).

In calculating a country's real national income or per capita income, the incomes of all persons in a country are added. This constitutes an equally weighted sum of interpersonal incomes. It is impossible to take any type of interpersonal aggregation, without first assuming that interpersonal comparability is admissible. While ordinarily measurable personal characteristics can be assumed to be characterized by partial interpersonal comparability (Sen 1970, Chapters 7 and 7*), in obtaining the value of aggregate income, it is an implicit assumption that there is full unit interpersonal comparability, which is quite unnecessary. Indeed, the qualitative order of the problem of interpersonal comparability is the same regardless of whether it is the sum of the quantities of interpersonal consumption of a particular commodity, or it is an interpersonal aggregation of personal incomes, or it is interpersonal aggregation of wellbeing salient personal utilities that is involved. After all, just because a mango in the hands of the poorest person and a mango in the hands of the richest person have the same physical (and chemical) properties, it does not give us ground to deceive ourselves into thinking that they are the same commodity. From an economic standpoint, they are as distinct as apples from oranges, and the number of apples and the number of oranges are typically not added meaningfully. While in the calculation of real national income, poorer and richer persons' incomes are given equal weights in the aggregation procedure, in the calculation of the collective human wellbeing measure in (12), a poorer

person income is attached a higher weight. Each measure comes with its own inexorable ethical commitment, embodied here in the distinct weighting schemes. However, despite these differences in the calculation of real national income and of W in (12), there is no escape from the assumption of interpersonal comparability, regardless of whether or not this is made transparent explicitly.

Before Keynes's *General Theory* in 1936, Michael Kalecki had already developed a macroeconomic theory in an obscure article published in polish, and he used to tease the young Keynesians of the time such as Joan Robinson about some inadequately developed parts of Keynes. I sketch below a slightly modified version of a part of Kalecki's argument that underlies the problem of decline in aggregate demand arising from an increase in income inequality in an economy.

Consider an economy with finite n persons with $n \geq 3$, and to capture the stylized facts of the American economy, suppose there are four classes of persons, and that a representative of each is characterized by distinct endowments. A person's endowments can be captured by an ordered triple $\omega^j = (l^j, s^j, k^j)$, where l, s and k refer to unskilled labor, skilled labor and capital, respectively. One class is of *unskilled workers* with $l^j > 0, s^j = 0, k^j = 0$, denoted $j = L$. Second is of *small business owners* characterized by $l^j > 0, s^j = 0, k^j > 0$, $j = b$, third, *skilled workers* with $l^j = 0, s^j > 0, k^j = 0$, $j = S$, and *entrepreneurs* with $l^j = 0, s^j > 0, k^j > 0$, $j = e$.

Without loss of generality, assume that if $l^j \neq 0 \rightarrow l^j = 1, s^j \neq 0 \rightarrow s^j = 1, k^j \neq 0 \rightarrow k^j = 1$. Assume further that the earnings of these factors are $w_{China} < w_L < w_{India} < r^* < r^{**} < w_S$, all denominated in U.S. dollars.²⁶ Since my purpose is merely to demonstrate that there exist circumstances in which the observed stylized facts of the past decade in the U.S. economy can arise, restricting the structure by such assumptions is harmless. In the initial, full employment equilibrium, the incomes of the representative persons of each class are $w_L < w_L + r^* < w_S < r^* + w_S$, on the additional assumption that $w_L + r^* < w_S$, which is also a harmless assumption for an existence result. Thus, initially, unskilled workers earned the least, small business owners the next most, skilled workers earned more, and entrepreneurs earned the highest incomes.

Assume further that the marginal propensity to spend on consumption, σ was inversely related to personal incomes, though constant for each income class. Thus, $\sigma_L > \sigma_b > \sigma_S > \sigma_e$. With the number of persons in each class given by $n_L > n_b > n_S > n_e$, aggregate spending in the initial equilibrium turns out to be

$$\hat{Y}_d = \sigma_L \hat{n}_L \hat{w}_L + \sigma_b \hat{n}_b (\hat{w}_L + r^*) + \sigma_S \hat{n}_S \hat{w}_S + \sigma_e \hat{n}_e (r^* + \hat{w}_S). \quad (A4)$$

In the post Sino-American and Indo-American exposure temporary equilibrium, since some workers became unemployed, and some small business owners filed for bankruptcy, the number of employed unskilled and skilled workers and small businesses became fewer, $\tilde{n}_L < \hat{n}_L, \tilde{n}_S < \hat{n}_S, \tilde{n}_b < \hat{n}_b$, while the rate of return on capital invested in China and India, by assumption by entrepreneurs only, became higher, $r^{**} > r^*$. Thus, aggregate demand in the new equilibrium of a structurally different economy is

$$\tilde{Y}_d = \sigma_L \tilde{n}_L^N \hat{w}_L + \sigma_b \tilde{n}_b (\hat{w}_L + r^*) + \sigma_S \tilde{n}_S^N \hat{w}_S + \sigma_e \hat{n}_e (r^{**} + \hat{w}_S) + \sigma_L \tilde{n}_L^M w_{China} + \sigma_S \tilde{n}_S^X w_{India}. \quad (A5)$$

From a comparison of (A5) with (A4), it is easy to see that both income inequality and real national

²⁶ While harmless for my objective, the assumption about the rank order of r^{**} and w_S is not crucial to the argument, whether in the initial or the final equilibrium.

income can rise simultaneously, as actually happened in the U.S. in the past decade (actually longer), but that, after a point, increases in income inequality would necessarily be associated with a fall in aggregate demand and thus national income, in part because richer persons have a lower marginal propensity to spend on consumption.