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# Income inequality in the U.S. from 1950 to 2010 – the neglect of the political

Holger Apel [Erasmus University Rotterdam, The Netherlands]



**Abstract**
Based on the empirical observation of a global trend towards increasing income inequality across developing and developed economies, this article analyses the *causes* of increasing income inequality. Surprisingly, the role of institutions and policies with regards to rising income inequality have been under-researched. A case study of the U.S. from 1950 to 2010 reveals the substantial role of political institutions in increasing and perpetuating income inequality. Policies have a major impact on the distribution of income and thus influence income inequality. The case study reveals empirical evidence of two trends which are politically induced and reinforce income inequality. First, stagnating real wages for the majority of the population despite increasing productivity due to anti-labour policies which undermine collective bargaining. Second, increasing accumulation of wealth at the top of the income distribution through decreasing taxes for high incomes and corporations.

## Introduction[1]

This article analyses *causes* of high and persistent income inequality in the U.S.[2] The analysis provides an explanation of the interconnected factors behind rising income inequality and the upward redistribution of national income from labour to capital. Followed by a series of reports about rising inequalities from various International Organisations (IO) (ILO 2011; UNCTAD 2012; OECD 2011b), the interest peaked after the publication of the English translation of Piketty's (2014) *Capital in the Twenty-First Century*. The publication triggered a heated debate and brought widespread attention to the issue also from non-academic circles ever since. Not surprisingly, there is as much empirical evidence supporting as broad a variety of arguments as scholars working on the subject.

The interaction between *exogenous* and *endogenous* drivers of inequality is of particular interest. At first sight the global trend towards increasing inequality across developed and developing economies suggests that exogenous forces are the main driver of inequality. However, the impact of exogenous drivers can be counteracted or reinforced by national policies and are thus highly country-specific. For example the experience of most countries in Latin America which successfully reduced inequality while being subject to the same exogenous drivers as other countries, suggests that countries do have the means to reduce inequality. One major influence on inequality are the policies adopted (or not adopted) by the respective governments. Those vary considerably across regions and countries and alter the distribution of income significantly. It is argued that the *political dimension* as an endogenous driver of inequality has been neglected to the benefit of economic-based explanations. Some political scientists and sociologists have explored possible political explanations of increasing inequality (DiNardo, Fortin, and Lemieux 1995; Bartels 2010; DiPrete 2007; Rosenthal 2004), while economists have mostly neglected the role of the political.

[1] I would like to thank Howard Nicholas and Rolph van der Hoeven for their support and critical remarks.
[2] If not further specified inequality refers to income inequality and growth to economic growth as measured by the Gross Domestic Product (GDP) throughout the remainder of this article.

How and to what extent the *political dimension* has contributed to increasing inequality has been under-researched. In order to analyse the political causes of increasing inequality the U.S. has been chosen as a case study. The research question reads as follows: Which factors are the main drivers of income inequality in the U.S.? The U.S. is of particular interest because the country has experienced a sharp increase of inequality relative to other countries. In addition to that the U.S. is one of the few countries where continuous and reliable data is available. This enables the analysis and comparison of the changing patterns of income inequality from the early 1950s onwards.

Partly, as it is argued, inequality has been caused by politically induced decisions. Certain policies, such as the decreased support for unions and tax cuts favouring the relatively well-off and corporations, have benefitted a small minority of the population at the expense of the majority and have thus contributed to widening income inequality. It is argued that this particular type of *income* inequality leads to *representational* inequality. High and persisting inequality in the U.S. has contributed to the strengthening of an economic elite who have a vested interest and the means to influence policies accordingly which increases and perpetuates inequality. This in turn reduces the purchasing power of the majority of the U.S. population (and hence aggregate demand). Thus, growth stalls also due to decreasing means of purchasing goods and services for the majority, or, contributes to economic and financial instability because the stagnating real wages are compensated by increasing accumulation of debts (Onaran and Galanis 2013, 88).

The overall argument is that an influential driver of increasing inequality is the capability of the relatively well-off to capture large parts of the national income at the expense of the majority of the population through political influence. While the real wages of the economic elite increase, the majority of the population experiences stagnating real wages. In this regard, the changing shares of national income as measured by the functional income distribution (FID), which distinguishes between the factors labour and capital, have been neglected so far. The former measures the return to labour which is a major source of income for the majority of the population, whereas the latter measures the return to ownership which accrues mostly to a wealthy minority of the population. There is a gap in the empirical analysis which connects increasing inequality with changing factor shares of national income. The FID provides a different angle on how economic gains and losses are distributed in an economy.

**Main drivers of U.S. income inequality**

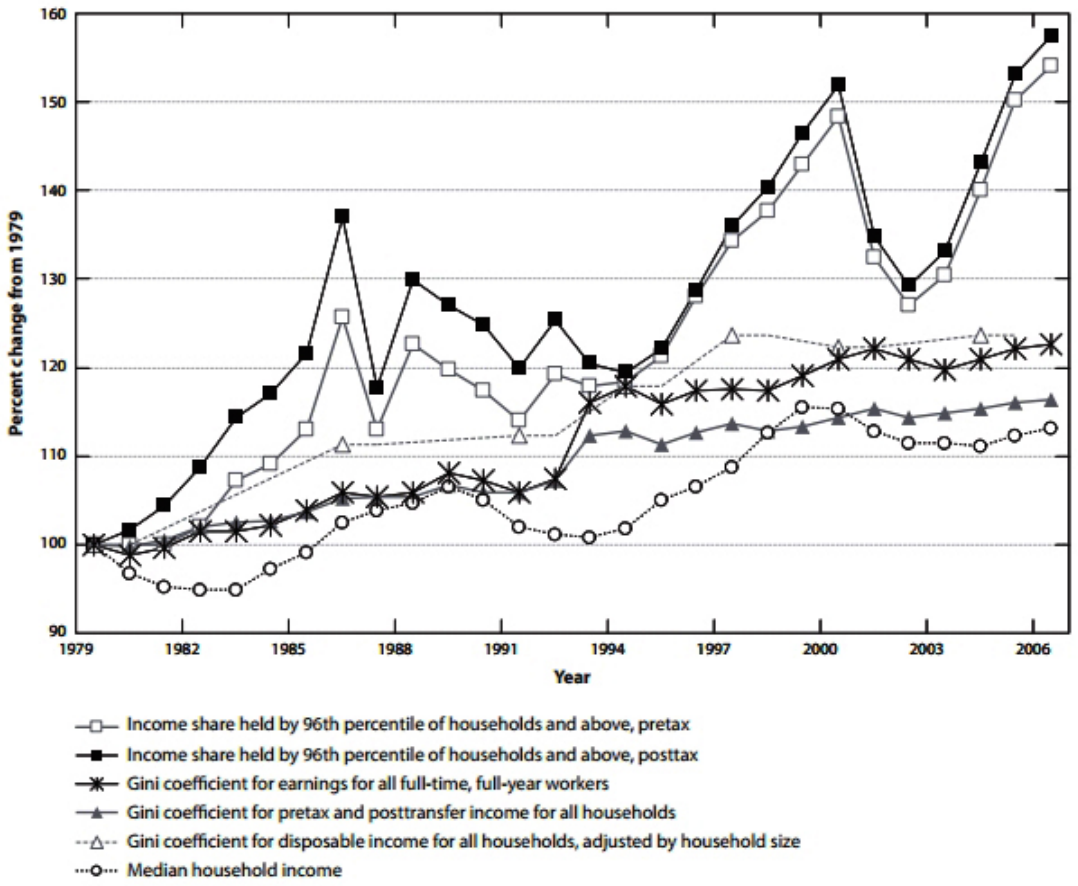
There is agreement among scholars about the trend towards higher income inequality in the U.S. The increase, “although present in many other wealthy democracies, has not been as substantial elsewhere” (Jacobs and Myers 2014, 752). While there is agreement regarding the trend, the causes or drivers of increasing income inequality are widely debated. Palma (2011) pointed out the importance to focus on the tails of the distribution when analysing inequality. This paper first analyses the consequences of inequality on growth in the U.S. and then how political measures, for example the introduction of decreasing corporate and high income tax, have contributed to an upward redistribution.

The trend commonly agreed by scholars is that “[i]nequality in wages, earnings, and total family incomes […] has increased markedly since 1980” and that the “level of inequality today, for both market income and disposable income, is greater than at any point in the past 40 years or longer” (McCall and Percheski 2010, 332). Taking 1979 as the baseline the

upward trend is reflected by a variety of inequality indicators (Figure 1). While in the intermediate post-World War period inequality decreased the trend was reversed. Trend reversals began in 1960s, gathered pace throughout the 1980s, to contemporarily remain at an all-time high. "[T]rends for all units of analysis, measures of inequality, and types of income show that inequality in the United States increased from 1970 through the present" (332).

One major driver of increasing inequality was the shift of the focus of macroeconomic policies in the late 1970s and early 1980s intended to combat high inflation and low output induced by the oil shocks in 1973 and 1979. "This period saw the launch of structural reforms to make OECD economies more efficient, flexible and competitive – although modestly at first and with the United States […] leading the way"(OECD, 2011b, 314). Whereas in the 1960s and 1970s macroeconomic policies were aiming at full employment, external balances and low inflation, the early 1980s witnessed a shift towards a focus on the medium-term. The focus shifted towards structural reforms to liberalise markets in order to make the economy more efficient (OECD 2011a, 310–311).

**Figure 1:** U.S. Trends in Economic Inequality, 1979-2006

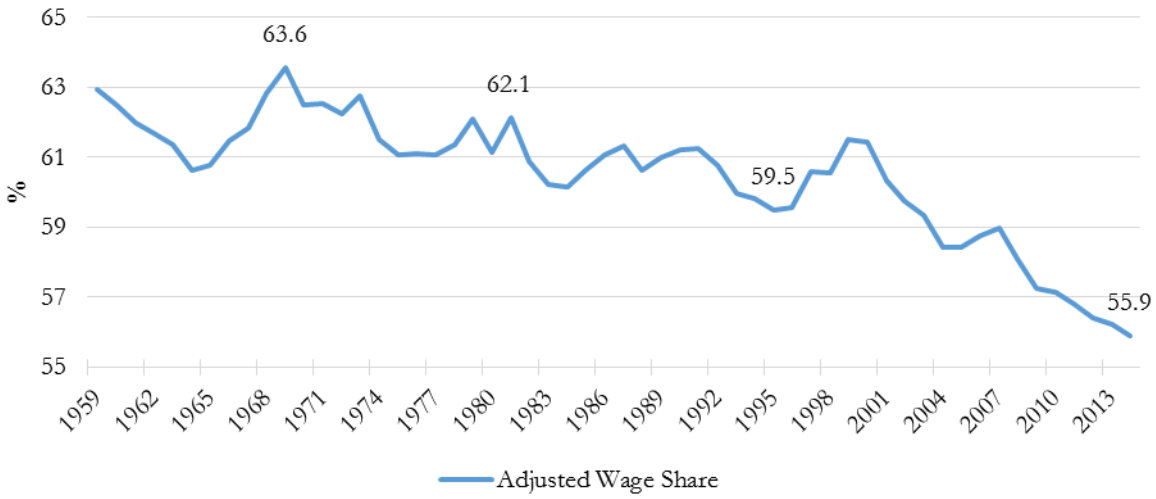



(Source: McCall and Percheski 2010, 334.)

However, the shift of macroeconomic policies in the late 1970s and early 1980s in most developed economies had a deeper structural impact which entailed a "more general redefinition of the role of the State in the economy, which favoured significantly reducing the extent of State intervention and public sector involvement in the economy" (UNCTAD, 2012b, 12). This change of macroeconomic focus also had redistributive consequences which resulted in an upward redistribution benefitting the already relatively rich parts of the U.S.

population mostly. "[R]ising inequality is the direct result of a range of policy choices that predictably boosted bargaining power for those at the top of the income and wage distributions" (Bivens 2013, 21). The upward redistribution is visible in the changing FID (Figure 2) where the income of labour decreases which implies an increase of the capital share of national income. The analysis of the FID is indispensable because the type of income inequality witnessed ever since the early 1980s lends itself a clear class feature where the relatively rich extensively gain at the expense of the broad parts of the population who experience decreasing shares of national income. The decline of the wage share in the FID does not seem be to "limited to any particular set of countries and appears to be a general phenomenon" (Rodriguez and Jayadev 2010, 3).

**Figure 2:** U.S. adjusted wage share, 1960-2013

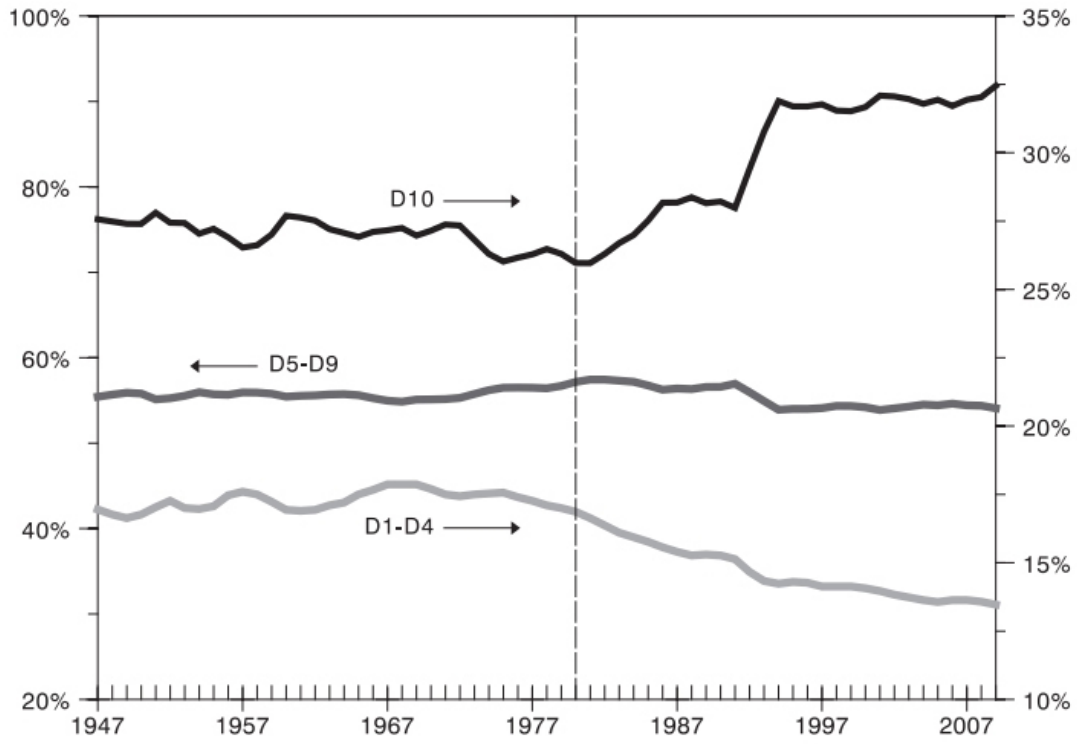



(Source: author's compilation, data retrieved from AMECO (2014).[3])

As Stockhammer (2013, 44) argues only recently the determinants of FID have attracted researchers' attention. Theoretical models, such as the Heckscher-Ohlin model and the Cobb-Douglas production function, assume the share of labour and capital to remain constant. However, the adjusted wage share of the total economy of the U.S. peaked in 1969 and then declined by 7.7 percentage points. The decline of the wage share has not been as pronounced as in other advanced economies but the increase of top incomes has been even higher. "In the Anglo-Saxon countries a sharp polarization of personal income distribution has occurred, combined with a modest decline in the wage share" (41). This is partly explained by the fact that high incomes partly offset the negative trend of the FID. They nevertheless, only occur to a small minority of the work force. What are the drivers of the skewed FID? Until the early 1970s productivity gains were passed onto labour in terms of real wage increases (Fleck, Glaser, and Sprague 2011, 59). From 1947 until the late 1960s real hourly compensation and productivity increased and followed a very similar trend. However, as of 1973 real hourly compensation and productivity started to diverge. A trend which has continued until today (ILO 2013, 46).

**Figure 3:** U.S. decile shares of national income, 1947-2007

[3] Refer to Appendix A for a more detailed description of the data.




*Note:* Income shares of D10 and D1–4 are shown on right-hand side scale; that of D5–9 on left-hand scale. Three-year moving averages.

(Source: Wade 2011, 66.)

Another reason identified by scholars as possible driver of inequality in the U.S. is the marked increase of salaries of top-income earners (Reardon and Bischoff 2011, 1095; Piketty and Saez 2003) which is also referred to as "upper-tail inequality". "Growing concentration at the top of the distribution is a striking departure from earlier patterns of inequality" (Neckerman and Torche 2007, 337). Another OECD report finds evidence for a stark increase of top incomes especially for the U.S. (OECD 2011b, 39). The top decile of income earners could expand their share of national income drastically reaching similar levels as before the Great Depression in the late 1920s (Atkinson, Piketty, and Saez 2011, 6). Wade (2011) presents a detailed analysis of the size of the distribution of national income which tracks the whole income distribution over time (Figure 3). The author divides the population into ten deciles. The first decile (D1) represents the first ten percent of U.S. population who are at the bottom of the income distribution. D2 represents the second most unequal ten percent of the population and so forth. His observation begins in 1947 and ends in 2007. Wade's (2011) findings show that until the late 1970s the distribution of national income among the deciles remained relatively constant although there were some minor fluctuations. From 1980 onwards D4 to D9 (which represent half of the population) continue to have a relatively constant share of slightly more than 50 percent of national income. However, at the same time the shares of the upper decile D10 diverges from D1 to D4. This means that those who were already at the top end of the income distribution could further gain at the expense of 40 percent of the people at the lower end of the distribution and of the middle class which saw their share of the national income stagnate (Palma 2011). Consequently, a small minority at the top of the income distribution captures most parts of national income, forcing the wages of the majority to stagnate or even decline.

Another trend that contributes to rising inequality is decreasing unionisation. Declining power of labour vis-à-vis capital can be one reason for the declining labour share of total national

income. In contrast to asymmetric income gains of top earners this pushes the lower-end of the income distribution downwards. In the case of the U.S. stagnating real and minimum wages contributed to growing inequality and amplified the trend towards diverging incomes.

> "[T]he weakening of U.S. labor market institutions is a source of income inequality. […] Weakening unions may also contribute to the stagnant minimum wage" (Park 2013, 18).

National policies in the U.S. have supported this trend. OECD (2014, 7) found a high correlation between top tax rates and pre-tax income inequality: The higher the top tax rate the lower the share of top percentile of national income. This goes hand in hand with another long-term trend of decreasing top income tax rate in OECD countries. The OECD average of top income tax rate fell from 66 percent in 1981 to 43 percent in 2013. A similar development happened in the U.S. where the top marginal income tax rate steadily decreased from slightly above 80 percent in 1950 to 35 percent in 2011 (Piketty 2014, 499). "[T]he evolution of top tax rates is a good predictor of changes in pre-tax income concentration" (Saez and Piketty 2013). The reduction of top tax rates either for business or for top income individuals is based on arguments that less taxes induce higher investments and thus translate into higher growth. However, expected higher investments through a reduction of top marginal income tax rates which translate into growth have not materialised (Piketty, Saez, and Stantcheva 2013, i).

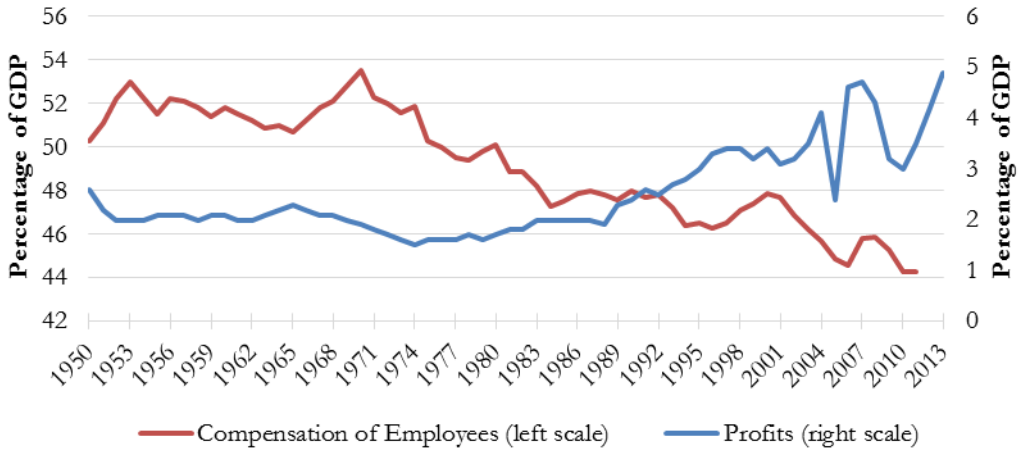
Another example of such policies next to the decrease of top income tax rates is the decrease in corporation income tax which has diminished constantly as a share of GDP. However, corporate profits as a share of GDP have been growing which benefited the upper-tail of the income distribution disproportionally and supported accumulation. Piketty & Saez (2006, 21) find that the "progressivity of the U.S. federal tax system at the top of the income distribution has declined dramatically since the 1960s" while the average tax rate for the middle class remained constant. "This dramatic drop in progressivity at the upper end of the income distribution is due primarily to a drop in corporate taxes" (Piketty and Saez 2006, 21). This leads to a situation where the "[c]orporate profits are at their highest level in at least 85 years. Employee compensation is at the lowest level in 65 years" (Norris 2014). As it is the case with the below analysed top income tax rate and the increasingly hostile behaviour towards unions the beginning of those favourable policies can be found during the Reagan administration.

> "These large reductions in tax progressivity since the 1960s took place primarily during two periods: the Reagan presidency in the 1980s and the Bush administration in the early 2000s" (Piketty and Saez 2006, 22).

These union-hostile and business-friendly policies had a major impact on the income distribution between factor shares and on which part of the population receives how much of national income. For example, these policies have contributed to a decreasing compensation of employees as a share of national income (Figure 4). Corporate profits as a share of national income remained fairly stable at around 2% with some minor fluctuations between 1950 and 1988. However, after 1988 the share of corporate profits experienced a steady increase to 4.9% of national income, only interrupted by two sharp drops in 2004 and in 2007. Profits bounced back to "pre-crisis levels" within one year and less than three years respectively. Besides, the long-term trends of sources of tax receipts as a percentage of GDP which distinguish between individual income taxes and taxes paid by corporations is also interesting (Figure 5). Taxes received from individual income tax payers increased slightly from 7.8% (1952) to 7.9% (2013). However, the taxes received from corporations experienced

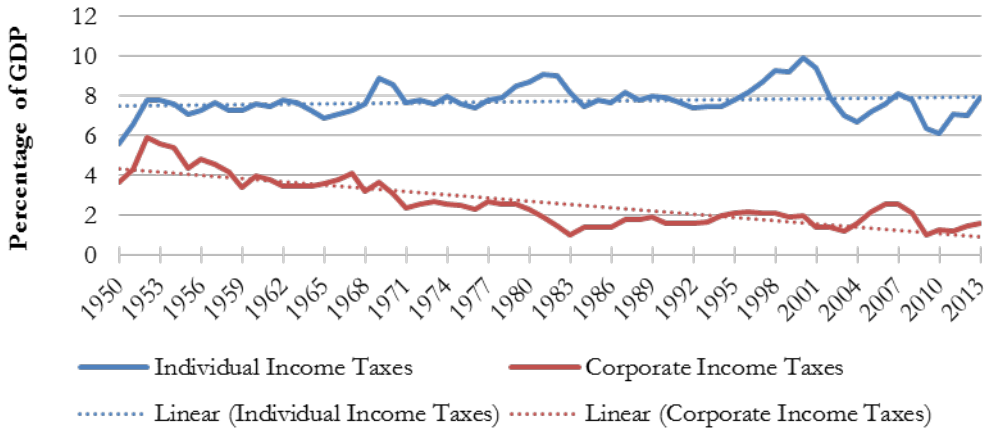
a steady decrease. They dropped from 5.9% (1952) to 1.6% (2013). Despite increasing profits the share of tax receipts as percentage of national income decreased constantly. Thus, the corporation's tax burden has decreased relative to the burden of the individuals.

**Figure 4:** U.S. Compensation of Employees and Profits, 1950-2012




(Source: author's compilation, date retrieved from FRED (2014).[4])

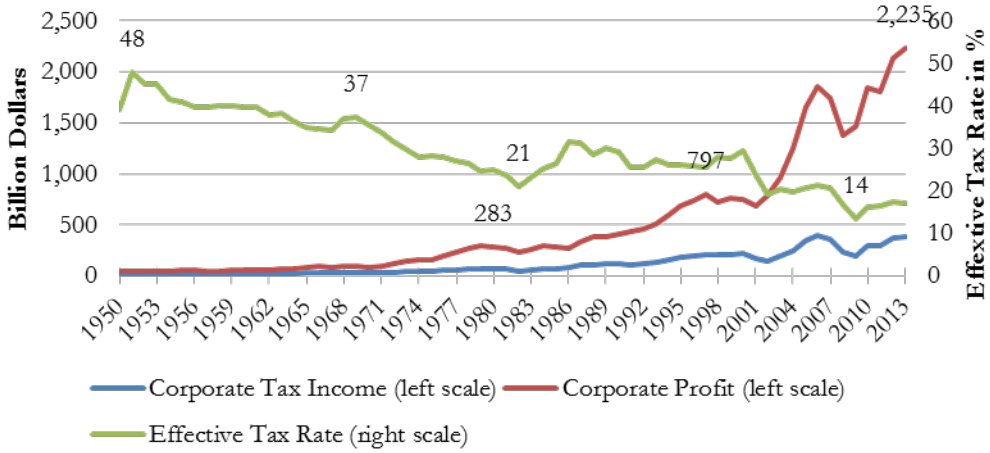
**Figure 5:** U.S. Tax Receipts by Source as Percentage of GDP, 1950-2013




(Source: author's compilation, data retrieved from Historical Tables (2014).)

[4] Refer to Appendix B for a more detailed description of the data.

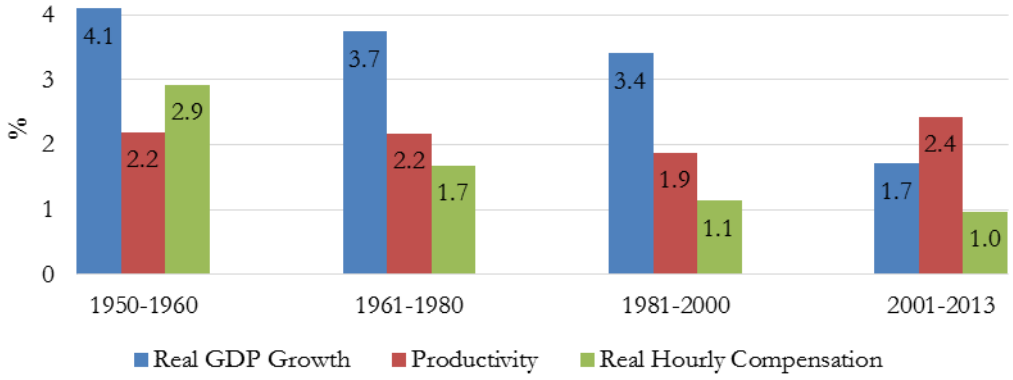
**Figure 6:** U.S. Effective Corporate Tax Rate, 1950-2013




(Source: author's own compilation, based on FRED (2014).[5])

Another consequence is the continuous reduction of the effective tax rate paid by corporations during the same time period (Figure 6) It peaked at 48% (1950) to drop to its lowest point at 14% (2009) and slightly increased to 17% (2013). The corporate profits steadily increased from 1950 to late 1960s, however, in the early 1970s they increased at a faster pace. The trend experienced another sharp increase from 1986 onwards. The shift of focus of macroeconomic policies in the early 1980s in general and the increase in top salaries, the decrease in union power, the decrease in top income tax rate and the decrease in corporation income tax in particular have contributed to the divergent factor shares of income. The explicit pro-capital and labour hostile nature of policies governing the unions put downward pressure on real wages. Productivity gains are not passed on to labour in terms of real wage increases anymore (Figure 7). It furthermore shows that stagnating real wages are not related to falling productivity of labour. On the contrary, gains from increasing productivity have not been passed on to labour.

**Figure 7:** U.S. Growth, Productivity Growth and Real-Hourly Compensation




(Source: author's own compilation, date retrieved from Fleck et al. (2011) and FRED (2014).[6])

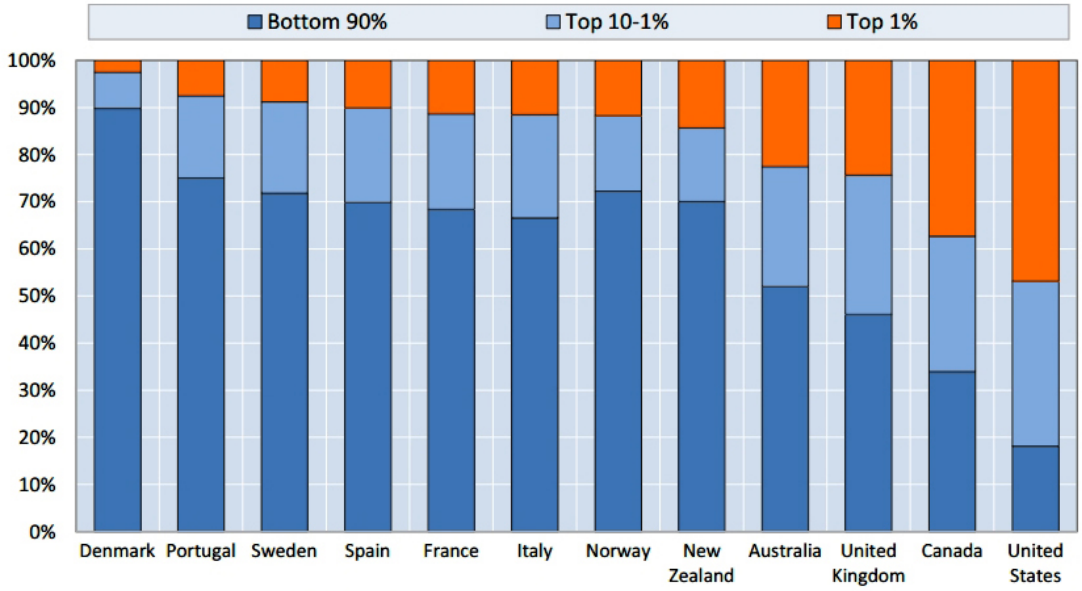
[5] Refer to Appendix B for a more detailed description of the data.

In order to justify the upward redistribution often the argument of increased investments and the consequent trickle-down effect are advanced. However, neither the decrease in high income taxes nor the decrease in corporation tax have increased the savings ratio. In the post-World War period the:

> "top marginal tax rate and the top capital gains tax rate do not appear correlated with economic growth […] saving, investment, and productivity growth" (Hungerford 2012, 17).

At the same time, these policies have enabled the upper end of the income distribution to gain large and disproportional shares of national income (capturing most of the productivity increases). The share of national income increases the closer one moves to the upper end of the distribution. Atkinson et al. (2011, 9) calculate annual real income growth for the top 1% of the income distribution in the period from 1976 to 2007 at 4.4%, whereas the real income for the remaining 99% increased by 0.6% only. OECD (2014) provides data showing the growth capture of national income according to income groups (Figure 8). The bottom 90% of the income distribution received less than 20 percent of national income growth from 1975 to 2007, whereas the top 1 percent of the income distribution received the lion share of nearly half of national income growth. Another 30 percent of national income growth is received by the top 10 percent to 1 percent. The "top tax rate reductions appear to be correlated with the increasing concentration of income at the top of the income distribution" (Hungerford 2012, 17). Thus, both, the marked increase in the share of top income earners of national income (upward trend in upper-end income distribution) and the stagnation of real wages (downward pressure on the lower-end income distribution) reinforce the trend towards inequality and result in changing factor shares of the FID.

**Figure 8:** Growth Capture of Total Income, OECD Countries, 1975-2007




Note: Incomes refer to pre-tax incomes, excluding capital gains
Source: OECD calculations based on the World Top Income Database.

(Source: OECD 2014, 3)

[6] Refer to Appendix B for a more detailed description of the data.

Analysing the FID in the U.S. reveals an increasing share of capital to the detriment of labour. This section has shown *how* drivers of income inequality impact the distribution of income within the U.S. The top income earners successfully captured most parts of the income generated by the economy while the income of labour stagnated. Productivity gains were not passed on to labour as it was the case in the intermediate post-World War period. The upward redistribution is actively supported by U.S. policies which decreased the top income taxes constantly; discouraged unionisation which decreased the means of unions to successfully bargain for increasing real wages. Thus, it is important to look at the FID for the general trend. More detailed causes of changes in the income distribution can be derived by analysing to which income group accrues how much of national income.

As it is not possible to argue, based on the empirical evidence provided above, for a direct causal relationship between the policies favouring the already rich disproportionally at the expense of decreasing the aggregate demand of the majority, the pattern is nevertheless remarkable. However, upward redistribution from large parts of the population to the benefit of a few at the top of the income distribution must have (had) an impact on aggregate demand. During the same period in which globalisation supposedly increases the competition among companies corporate profits in absolute numbers and in relation to GDP as well as high incomes soar. However, if those income gains had not been made at the expense of the majority "aggregate demand would have grown faster and the recovery would be stronger" (Bivens, 2013, 20). This contradicts the austerity policies. Growth policies which increase the demand of the majority through increases in real wages would be more fruitful (Onaran and Galanis 2013, 89). The low purchasing power of the majority and the lack of demand for goods and services has attracted the attention of other traditionally more conservative actors (Reuters 2014a; Reuters 2014b; S&P 2014).

To conclude, the politically induced decrease in unionisation, the decrease in high income and corporation tax have been the main drivers of increasing inequality. These trends lead to a decrease of the labour share of national income and reduced the aggregate demand for the majority of the population. One of the (arguably many) *necessary* preconditions for constant and sustainable growth is a certain degree of an equal distribution of national income. Which degree of equality is *sufficient* as a precondition for sustained growth is difficult to determine. However, if the labour share of national income in the U.S. does not increase it is unlikely that aggregate demand will be able to sustain a modest growth of the economy. The most efficient way to stimulate aggregate demand is to increase the real wages of the majority. For economic and normative reasons alike more equality, instead of higher inequality, is the foundation of sustained growth.

**Conclusion**

Several trends which contributed to this phenomenon of increasing income inequality started around 1980 and were politically induced. Some trends have contributed to a greater, others to a lesser extent and there might be others which have not been considered in this analysis. However, if income inequality is seen through the FID and income groups, a clear picture emerges. Politically induced decreasing unionisation and the fact that the gains in productivity are not passed on to workers translate into stagnating real wages for large parts at the lower end of the income distribution. At the upper-end, however, income increases in real terms through the politically induced decrease in top income tax rates and the marked increase of

top-income salaries. Both trends reinforce the divergence between labour and capital. The share of the middle-class stagnates.

Despite the fact that exogenous drivers play an important role in the determination of inequality, countries do have the necessary policy tools in order to prevent, or at least, curb the trend of increasing inequality posed by the exogenous drivers. However, the tools that were employed by the U.S. governments turn out to be catalysers of the upward trend instead of absorbing the starkest increase. One such example is the shift of macroeconomic policies away from the "traditional" focus of overall macroeconomic stability and full employment towards price stability which has a direct bearing on the distribution of income and increases the divergence of income between upper- and lower end of the distribution. But why are the exogenous drivers of increasing inequality reinforced by endogenous drivers (meaning political decisions) which instead could have been employed to diminish the effects of exogenous drivers?

Partly, this question can be answered with the growing influence of economic elites on the decision-making legislative process in the U.S. High and persistent income inequality has led to representational inequality. In the case of the U.S. economic elites influence policies to their advantage and do so successfully even in those cases where the majority of citizens disagree on particular matters. This finding hints at a more fundamental issue in the analysis of income inequality: the neglect of the political dimension as a major contributor to increasing income inequality. The political dimension is not the only driver of income inequality in a country but again it plays an important role to which academic attention has failed to do justice to.

The analytical neglect of the political dimension has severe consequences. Being an under-researched but definitely important dimension it is not well-understood by scholars to what extent and how the political dimension affects income inequality. The argument put forward in this analysis is that institutions actively contribute to the sharp divergence of the income distribution. Since the impact of the political dimension on inequality has been neglected by researchers it is not possible to include it in growth models or regression analysis in a meaningful way. However, if a variable for which empirical evidence finds a major role in the determination of income inequality is not included in such models or regression analyses the outcome is less reliable. Thus, further research needs to focus on how to include the political dimension in growth models and regression analyses in a meaningful way.

It has to be acknowledged that structural changes create more competition and lead to tectonic shifts in the process of economic organisation. Globalisation allows to shift labour intensive production from developed economies to other economies more easily. These arguments are often advanced to explain the decreasing share of labour income and to legitimise policies which favour corporations and high-income individuals disproportionally. However, why is accumulation at the top soaring? Why do corporations have increasing revenues in absolute terms as well as a share of GDP while at the same time the real wages of large parts of the population are stagnating? There is an undeniable influence of the economic elite on legislative processes. Redistribution always takes place what changes are the groups which benefit.

Most importantly, decreasing inequality is not an automatic outcome of growth. Redistribution always takes place and institutions (the political dimension) determine whether national income is redistributed upwards or is more equally shared among the population. In the case

of the U.S. various policies since 1980 have favoured an upward redistribution which benefited a few at the expense of the majority. If compared to the intermediate post-World War period, where economic growth came along with *decreasing* inequality, a clear faultline can be established. After 1980 a trend towards growth and *increasing* inequality began to emerge. The concentration of income at the top of the income distribution turned into means which increased the political influence of the economic elite and perpetuated inequality even further.

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**Appendix A: Description of Data based on AMECO (2014)**

| Variable | Acronym | Description |
|---|---|---|
| **Adjusted Wage Share** | ALCD0 | Adjusted wage share: total economy: as percentage of GDP at current market prices (Compensation per employee as percentage of GDP at market prices per person employed.) |

(Source: AMECO (2014).)

**Appendix B: Description of Data based on FRED (2014)**

| Variable | Acronym / Formula | Description |
|---|---|---|
| **Corporate Income Tax** | FCTAX | Federal Government: Tax Receipts on Corporate Income |
| **Corporate Profit** | A053RC1A027NBEA | Corporate profits: Profits before taxes, NIPAs |
| **Effective Tax Rate** | FCTAX/A053RC1A027NBEA*100 | See above |
| **Compensation of employees** | W269RE1A156NBEA | Shares of gross domestic income: Compensation of employees, paid: Wage and salary accruals: Disbursements |
| **Profits** | A449RE1A156NBEA | Shares of gross domestic income: Corporate profits with inventory valuation and capital consumption adjustments, domestic industries: Profits after tax with inventory valuation and capital consumption adjustments: Net dividends |

(Source: FRED (2014).)

**Author contact:** holger.apel@posteo.de

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# A never ending recession? The vicissitudes of economics and economic policies from a Latin American perspective[1]

Alicia Puyana [FLACSO- Mexico]



## 1 Introduction

The crisis facing the world economy since the end of 2007 has shaken to the core the economic paradigms that were the basis of models for economic policies and governmental roles for the past 30 years. The elusive recovery of the economies of the European Union and the United States and the instability of China, Brazil are causing alarm. Moreover, the latest economic forecasts published by multilateral organizations[2], suggest the world is facing an economic *secular stagnation*, a long-lasting period of low interests rates, low inflation, low growth and high unemployment (Summers, 2013), with dramatic negative impacts on incomes and equality.

Due to the global financial crisis, the ability of the market to unleash politically, socially and environmentally sustainable growth has been called into question, given that to be sustainable, growth must be inclusive, be able to reduce inequality and poverty, extend universal citizenship rights, and promote the rational use of the factors of production. The crisis has challenged the unconditional acceptance of the democratizing effects of the free market and the foundations of the macro economy, based on the assumptions of classical and neoclassical economic theory and subjected to the fundamentals of microeconomics. This has led to questioning the nature of the policies supported by these principles. The alleged credentials of economic theory – as an exact science, politically neutral, and with predictive capacities – have been essentially called into question. One of the few, if not the only, positive effects of the crisis has been the return of economics to the social sciences. This return is especially important for macroeconomics, in which economic theory cannot be separated from politics.

There is concern about the future of capitalism, that the progress in economic liberalization will be reversed, and populism – beaten down when observed in developing countries and tolerated when applied in developed countries – will return. The crisis has been confronted with some monetary quantitative easing to save banks, plus austerity measures, deep cuts in public spending, which constitute one more step towards dismantling the welfare state that was initiated with structural reforms 20 years back. These cuts eliminated inalienable civil rights won by workers in long and hard struggles, and replaced them with the right to obtain credit to meet basic needs or acquire public goods.

[1] This paper is an expanded and updated version of the conference at the author's inauguration as member of the Colombian Academy of Economic Sciences, Bogotá, in April 2013.The author thanks José Antonio Ocampo, Rosemary Thorp, Martin Puchet, José Romero, Eva Paus and Nelson Arteaga for their useful and generous comments which helped to clarify the arguments. She also acknowledges Agostina Costantino for her assistance in the preparation of an earlier version of this work. All errors and omissions are the author's sole responsibility.
[2] See: IMF (2014, 2015), OECD (2014, 2015) and ICMBS (2014).

The economic crisis of 2007-8, which affected the global order, was not widely predicted. The surprise was best expressed by Queen Elizabeth's question, during a visit to the London School of Economics in November 2007: "It's awful! Why did nobody see it coming?" (RDMP, 2009). UK's monarch sparked an intense exchange of communications among leading economists, competing to give the sovereign a satisfactory answer.[3] It highlighted the crisis in economic theory as a social science and opened a still ongoing debate. The political establishment and the media mirrored this race for explanations and justifications.

What remains of all this eagerness to ask questions and seek answers? It seemed that at least the financial arrangements would be reordered. Neither Europe nor the United States have emerged from the crisis (IMF, 2014; ICBM, 2014), nor has the power of the large financial institutions weakened. Or so it seems.

Governments fall and citizens are impoverished, but the liberal orthodoxy responsible remains in place. However, it would be inaccurate, or perhaps fallacious, to claim that "nobody saw the crisis coming". Many predicted it and raised the alarm (Galbraith, 2009). These voices were ignored by the carriers of "politically correct" economic thought, in an exercise of intolerance towards positions critical of the orthodoxy of the "neoclassical repression" (Rogoff, 2002),[4] by which papers challenging the orthodoxy were not accepted in leading mainstream economic journals.

The limitation of macroeconomic theory, of modelling only that which can be sustained by the microeconomic foundations of the representative agent in a general equilibrium frame, led to the predominance of econometrics over economic theory, and to deviations in its teaching which aroused concern years before the current crisis. In 1988, the American Economic Association formed a commission[5] to assess graduate economic theory programmes in American universities. In its report, the commission (American Economic Association Commission, 1991) lamented the fact that economic theory had become a branch of applied mathematics, detached from real world events and institutions. According to the commission, U.S. graduate programmes "produce generations of economists, *idiot savants,* well versed in techniques but innocent of real economic facts" (American Economic Association Commission, 1991). The major flaws described were a lack of teaching in history, philosophy, geography, institutions, and of course, economic theory, as well as not reading the classics.

This trajectory continued, programmes were not modified, and deficiencies identified by the commission even intensified – to the extent that in September 2000, students of economics at the École Normale Supérieure in France protested against the excessive mathematical formalization in the teaching of economic theory, not due to a rejection or fear of mathematics but to the "schizophrenia" created by choosing modelling, in place of reality, as the route to developing theory. They called for the end of the hegemony of neoclassical theory and the return to pluralism and a willingness to consider "concrete reality" (Post Autistic Economics,

[3] The *Financial Times* established a panel to debate the future of capitalism and the measures to save it, and maintains the blog "The Future of Capitalism": http://blogs.ft.com/capitalismblog. President Sarkozy convened heads of states and social scientists for a discussion on 'New World, New Capitalism', and *The Economist* devoted several issues to the crisis of macro-economic theory and financial economics, including comments by Nobel Prize winner R.F. Lucas. The OECD created the forum 'Measuring the Progress of Societies' to find ways to measure the progress of nations.

[4] "There are more than a few of us in my generation of international economists who still bear the scars of not being able to publish sticky-price papers during the years of new neoclassical repression" – Rogoff, K. (2002, page 9).

[5] *Journal of Economic Literature*, September 1991.

2000). Similar movements were launched in Argentine universities, and also called for supporting social movements that rejected the FMI mandated "adjustment". The inequality resulting from policies backed by the neoclassical theory model has now been exacerbated by the crisis.[6]

It does not appear that a great amount of progress has been made down the route of return to pluralism and considering "concrete reality", at least not in the USA or the UK. Simon Wren-Lewis (2010), of the London School of Economics, describes the depression he feels when listening to brilliant economics students saying they would love to explore some real-life problems, but refrain from doing so because the microeconomic assumptions are unclear.

This essay first discusses recent changes in economic theory and the paradigms that were the basis for economic development. The economic crisis, past and present, destroyed economic theory paradigms. Second, some not wholly flattering observations are presented, regarding the trajectory followed by Latin American economies following the implementation of structural and liberalization reforms, closely related to the neoliberal paradigms installed as dominant ideas and which in Latin America were first instrumented in Chile and Argentina in the seventies.

## 2 Economic crises and the crisis of economic theory

Towards explaining the current crisis, two processes can be identified that feed one on the other: firstly, the transformation of economic theory since the end of World War II; secondly, the transition from pluralist concepts to analytical reductionism with the enthronement of the neoclassical school as the dominant theory. As the economy moved from the post-war *golden age of capitalism*, to the post debt crisis *great moderation* era, and from there to the *great recession* of today, economic theory and macroeconomics adopted metaphors from physics and applied them to society, under the principles of perfect competition and rationality based on complete information.

Economic crises, like any type of crisis, demand reflection on the course of events. Crises have led to profound changes in the political and economic standards of societies and the institutions that regulate them (Alesina *et al.*, 2006). However, other interpretations suggest that prevailing paradigms remain and survive longer than they should, and society invests resources and wastes time trying to adjust the irreparable (Stigler, 1982).

## 3 From the classics to the neoclassics: what is economic science for?

Economic theory, since Smith and Ricardo, is based on physics metaphors (Jomo, 2005) in the idealization of markets and in the reduction of individual behaviour to fully predictable selfish rationalism. In these metaphors, society, like the universe, is governed by the invisible

[6] In the recent book *Beyond Outrage: What Has Gone Wrong With Our Economy and Our Democracy, and How to Fix It* (2012), Robert B. Reich, professor at Berkeley, documents that "modern capitalism", consolidated over the past three decades by concentrating wealth, erodes its sources of growth and undermines democracy. The richest 1% of the US population accumulated 45, 65 and 93 per cent of the income growth during the Clinton, Bush and Obama administrations. The OECD (2011) laments the concentration of income and warns of the damage to social cohesion and the system that it implies.

hand[7], which in the universe keeps the cosmos in order and, after disasters, restores balance. The rising of the sun, and the phases of the moon or eclipses take place and no human action can avoid them although they may be predicted with relative accuracy. In the economy, and in society, the invisible hand conserves and restores balance at a lower cost than that incurred if visible hands were to intervene.

According to Davidson (2012), Paul Samuelson is responsible for the proposal that in order to ascend from *the realm of history to that of science*, economic theory must adopt the methods of the natural sciences and build ergodic axioms which demonstrate that the economic future is predetermined by an ergodic stochastic process. Therefore, he states, the function of economists should be reduced to calculating the probability distributions of future prices and productivity. For Samuelson, Davidson goes on to say, economic events are repeated inexorably on a predictable path, so that based on past events, without considering the initial conditions, it is possible to predict events and respond to them without trying to alter their course. Therefore, once economic actors, motivated by individual interest, have reliable information about the future, they will correctly invest in what gives higher returns and therefore ensure global prosperity (Davidson, 2012: 3). Economists such as Lucas and Sergent, Cochrane, Mankiw, M. Friedman, and Scholes based their theoretical contributions on these axioms, and consecrated this method as the only approach to scientific research in economic theory, and as the rational basis of public policy (*Ibid*). This was the intellectual response to meet the demand for security and certainty of the *animal spirits*, without which capitalism cannot be sustained. Of course, there are departures of neoclassical theory emphasizing market imperfections. Stiglitz, for example, being a neoclassical, the problems of information and other market imperfections are dominant and turn the market pathologically imperfect.[8]

Ergodic models elevated economics to the rank of the natural sciences and dressed some economists in the “emperor's new clothes” of political neutrality; and the models’ proposals became irrefutable axioms, beyond all social, political, and historical context.

Stigler, in 1982, in his Nobel Prize acceptance speech, explored the sociology of economists as powerful actors, and declared them responsible for the stagnation that economic theory had suffered since the scientific method of testing theories against reality had been abandoned. Thus, for Stigler, today good economists are no longer those who are correct, but those that affect the profession as a whole. Which means that, since it is harder to sell new ideas than new products, they apply the persuasion techniques of a street vendor: repetition, exaggerated claims, and disproportionate emphasis, and become preachers instead of scholars and theorists (Stigler, 1955).

This metamorphosis of economic theory – as noted by Galbraith (1974) in his first conference as President of the American Economic Association – responds to the need to supposedly

[7] Since Smith and Ricardo, the metaphors are present in the language of economics: the invisible hand, time is money, bubbles, reheating, the labour market. Econometric models are the mathematical formulation of these. The problem is not the use of metaphors, but rather which, why, and to what end they are used and, most seriously, that they obscure rather than help research. Krugman (1997) and Steven Landsburg (2010) suggest that the economic rhetoric comes from parables, and like those of Aesop, in order to have a clear moral it is not necessary for them to be true, or even realistic. They just need to be well told. On the role of metaphors in the process of knowledge and learning and the development of economic thought: Deirdre N. McCloskey *The Rhetoric of Economics* or Philip Mirowski (1994), as well as Arjo Klamer, Donald N. McCloskey, Robert M. Solow, 1989 or Arjo Klamer, 2007.

[8] Stiglitz, J. (1991), *The Invisible Hand and Modern Welfare Economics,* NBER Working Paper No. w3641.

manage and reduce risk, as well as to the aspiration of subordinating the state and society to the dictums of the market and to

> "reject all heresies, in any organized form, that is to say, anything that seems to threaten the sanctity of property, profits, appropriate tariff policy, or the balanced budget, or implied sympathy for unions, public property, public regulation, or the poor" (Galbraith, 1974: 239).

He adds that by excluding power from the analysis and

> "...converting economic theory into a non-political discipline – neoclassical theory destroyed, by the same process, its relation to the real world" (Galbratih, 1974: 240).

By distancing itself from the serious problems of the real world, Galbraith goes on to say, classical and neo-Keynesian economic theories limited themselves to proposing models that explain nothing and suggest incorrect solutions (*Ibid*.). Such proposals include, for example, the two most consolidated proposals in relation to global warming. On the one hand, that which prioritizes adaptation – that is, there is no need to intervene because it is the normal course of the planet and humanity can adjust to its changes – and on the other hand, that while accepting the need to reverse or least contain warming, focuses the solutions on market mechanisms and pricing systems.

This state of affairs in economic theory can be traced to the 1970s, when economic science plunged into the great project of assimilating macroeconomics to microeconomics, which implies that from the study of the behaviour of individuals, it is scientific and feasible to analyse and solve problems related to growth, inflation, business cycles, external shocks, unemployment and income concentration (Jomo and von Arnim, 2009). In this effort, economists, armed with physics metaphors and the arsenal of long term time-series for wide universes, with dozens of countries, multiple variables, powerful machines and sophisticated software, tried, like physicists, to find a law, the universal law that explained everything.

> "If there were to be such an economic theory, there is really only one candidate, based on extreme rationality and market efficiency. Any other theory would have to account for the evolution of individual beliefs and the advance of human knowledge, and no one imagines that there could be a single theory of all human behaviour" (Kay, 2009).

To account for scale economies, increasing marginal returns, involuntary unemployment and waste of resources would lay to rest the axiom of perfectly competitive markets.

Macroeconomic theory abandoned the complexity of the real world and distanced itself from the issues explored by the pioneers of development economics, such as Prebisch and Furtado, and by the structuralist school (notions such as increasing economies of scale, or the role of history and institutions as historical creations), variables that were difficult to model at the time (Krugman, 1999). Orthodox economics, evolved under the premises of perfect competition and diminishing returns, took the simplification that could be modelled as if it was reality and consigned to oblivion the progress from the 30s and 40s (Krugman, 2009a).

In due course, the scientific method of testing hypotheses against reality was sacrificed for the sake of elegance, and gradually, economists have become more worried about "making an impact" than about research quality.

## 4 The forgotten lessons

Three transcendental events marked the end of three models of economic theory, revealing that the theoretical economic paradigms are neither eternal nor immutable. In fact, at all times, a number of theories have coexisted and it is feasible to apply multiple perspectives to explain the same event. However, for diverse reasons, not all of them economic, only one overrules the rest. The epistemological fatigue produced by alternative approaches gained strength during the crises and forced advocates of the prevailing paradigm to face its limitations.

The first event was the crisis of the 30s, the great depression, which marked the end of an era of rapid growth in productivity, global trade and technological advances; the second, the stagflation of the mid-70s, which led to the debt crisis which ended the golden age of capitalism, or of the rebuilding of the economies devastated by World War II; and the third, the great stock market crash of 2008, which led to the great recession and gave the final blow to the period of the Great Moderation, the long period from the early 1980s to mid2007, during which inflation was controlled and recessions in developed countries were relatively mild but intense and frequent in the developing world (Ocampo *et al*., 2010b). Several crises affected developing countries: the debt crisis at the dawn of the 80s, the Tequila from 1994-1995, and East Asian of mid-1997, which after disturbing Russia and Latin America spread to almost all developing countries. Brazil and Argentina also suffered economic shocks. All of these occurrences, like the Great Recession, were caused by "excessive risk-taking and the exuberance of the financial markets" (Stiglitz, 2010 cited in Ocampo *et al*., 2010b).

### *4.1 On the Great Depression*

The Great Depression ended the faith in the market's ability to regulate the economy and make the necessary adjustments to overcome cycles. The collapse of the stock market in 1929, economic stagnation, and the fall in demand made obvious the need to intervene. Interventions were needed not only in relation to the euphemistically named 'externalities' or market imperfections, but also to maintain a minimum of economic activity and effective demand, given the evident invalidity of Say's Law, according to which everything that is offered for sale is sold. Keynes understood that. The crisis, Keynes argued, was more than an isolated episode, and the capitalist system, to function in a satisfactory way, needs an agency, the state, to protect the system, print money and invest to maintain employment and sustain demand when crises demand it. He was especially critical of the financial sector, due to its propensity for short-term speculation.

One of Keynes's most important contributions was the rejection of the ergodic method of classical economic theory, arguing that the axioms of this school are applicable only to specific cases and not to contemporary economic conditions, from which it logically follows that adverse outcomes can result from wrong conclusions (Davidson, 2012: 3)[9]. Indeed, the insistence on the validity of the ergodic axioms led to the qualification of the experiences of

[9] Keynes also rejected the supposed neutrality of money and the substitutability of money and capital goods.

China, India and some countries of Latin America as temporary deviations from the normal path of capitalism which, sooner or later, were bound to adjust themselves.

Some theoretical and empirical shortcomings also contributed to the advance of neoclassical economic principles and the dismal of the Keynesian paradigms.

> "On the theoretical front, Keynes failed to explain why unemployed workers would not offer to work for a lower wage, and why profit maximizing firms would fail to hire them. On the empirical front, Keynesian economics failed to explain stagflation (Farmer, 2012).

Therefore, economics returned to "the business cycle theory of the 1920s", Farmer added.

Then, as now, there was no shortage of economists who saw the crisis as a great opportunity for capitalism and, applying the parable of the broken glass, emphasized the benefits of destruction, its constructive effects, and minimized or abstracted its economic and social costs in order to emphasize that all countercyclical actions cause more damage than the crisis itself. The resemblance to current austerity proposals with emphasis on fiscal discipline and monetary control of inflation for Europe, the United States and Colombia, and generally in Latin America, is no coincidence (Sarmiento, 2002; 2005). One lesson, now preferred to be forgotten, is that by prematurely withdrawing the New Deal stimuli, the US economy again began to decline, and only recovered with World War II military spending (Krugman, 2009b).

### *4.2 From the golden age of capitalism*

Keynesian assumptions dominated economic theory and political action, at least from the end of the war until the early 70s, during the phase known as the *golden age of capitalism* (Scott, 1991). During this time, all countries, developed and developing, grew at unprecedented rates.[10] The rapid growth created pressure on natural resources and accelerated inflation. The costs of depletion of natural resources appeared in the intellectual and political landscape, with the Club of Rome, OPEC, the petro-dollars, the preamble to the debt crisis, and the structural reforms.

The "stagflation" of the early 70s ended the *golden age of capitalism* and opened the way for proposals that rejected Keynesian economic theory, in particular his recognition of lack of demand as a cause of crises, and refuted the idea of implementing active employment policies through public spending to maintain economic activity and domestic demand.

Starting in the 70s, many elements of classical economic theory gained traction again, this time with less analytical complexity and more sophisticated instruments, focused on price and product stability instead of growth, and also legitimized microeconomic fundamentals for macroeconomic analysis.

The oil shocks and inflation of the late 60s prompted the general equilibrium models. The assumptions of individual rationality and market efficiency were fully incorporated into the econometric models: the representative individual became the lead actor. Due to the

[10] Latin America recorded the highest growth rates and reduced the gap between its GDP per capita and that of the United States. In this period (1945-1980), several Latin American countries, especially Argentina, Brazil, México, Peru, Venezuela, registered the highest rates of growth since the beginning of the XX Century up to 2013.

assumptions of perfect rationality and complete information, economic policy was labelled as ineffective in reducing unemployment. Since individuals know how the market works, they anticipate that any increase in public spending causes inflation and, in consequence, adjust wages and prices accordingly, which prevents (even in the short term) increased unemployment (Kaletsky, 2009). Unemployment became a voluntary decision of rational and informed individuals (Friedman, 1968). Therefore, the mass unemployment of the 30s, or the striking total unemployment in Spain (24.5%), and the dramatic unemployment amongst young people (53% of the economically active population) would be a *great collective vacation* (Krugman, 2009b).

The crisis of the 70s questioned the validity of the Phillips curve and the existence of the indirect relationship between unemployment and inflation. The inflation of the 70s and the debt crisis were followed by the economic and social costs of the lost decade, caused by the severity of the adjustments. The bias of the structural reforms *were not structural enough* (M. Lipton, 1991) since they only removed market restrictions resulting from the state's actions and kept intact the suppression of transactions or exchanges, emerging from the concentration of capital, production, knowledge and trade. As we shall see, in Latin America the theoretical basis of the reforms and the macroeconomic policies adopted were consistently applied: in Chile and Argentina during the 70s, and in other countries following the debt crisis of the early 80s, and under the adjustment and structural reform programmes of the International Monetary Fund, and the double conditionality established between the IMF and the World Bank.

### *4.3 The great moderation, or the dangers of stability*

The liberalization of the economy in response to the debt crisis and inflation – that is to say, the removal of the state from economic management – set the course that would be followed by economic theory, economic policy and the foundations of social organization. On the one hand, the neoclassical ergodic axioms mentioned above were fully enthroned in theory and macro-economic policy, and on the other, the market and individualism were held up as the fundaments of all social action. Economic and political practice focused on the ultra-liberal ideology summarized in the phrase of M. Thatcher (1987):

> "...there is no such thing as society. There are individual men and women, and there are families".

Far from being a purely technical project, which exclusively affects the economy and seeks only efficiency of public spending, the change of the development model disrupted the structure of political power and the distribution of economic surplus, and transformed the relations between state and society, between and within capital and labour, and between social groups. By redefining the boundaries of the state, profitability was established as the guiding principle of the economy. Efficiency, profitability and competitiveness were recognized over equity as the guiding principles of public policy, and economists, it was said, needed not to worry themselves about value judgments (Stigilitz, 1991). It deepened the separation between positive economic theory and normative economic theory, and abandoned the principle that efficiency and equity form a unit. This principle and the fact that market imperfections permeate the whole economic system and do not guarantee the optimal use of resources should be a topic of discussion between economists and politicians, as Stiglitz put it:

> "... these issues – and not the issues of whether the market economy attains the ideal of Pareto efficiency – are or ought to be the focus of discussion in democratic societies and not, as today, that the debate centres on whether with democracy the market ensures Pareto efficiency or not" (*Ibid*: 41).

Equity was relegated to residual measures, separated from economic policies, in order to offset some of the damage caused by the exclusive preference for efficiency and capital profitability. There is a greater tolerance for levels of poverty or degrees of inequality, exclusion, unemployment and precarious employment, which were previously considered morally unacceptable.

The liberal model ushered in the era of The Great Moderation, if some cases are ignored, such as the crisis in the United States (mid-80s), the crises in Mexico (1986, 1994, 2009), and the later crises in Southeast Asia, Colombia and Argentina. The liberal model plunged the region into the lost decade, as a result of the severity of the adjustment and structural reforms, as discussed below.

The "Great Moderation", a term coined by James Stock (2003) and legitimized by Ben Bernanke (2004), refers to the reduction in price and product volatility, and was brandished as empirical confirmation of the success of liberalism and market power to establish the optimal distribution of factors of production. Bernanke (2004) considers monetary restriction and central bank independence as key among the various causes of stability. Bernanke disregards as insignificant the political and structural causes: easy money, deregulated markets, currency revaluations, cheap imports and less severe external shocks, among others. The Great Moderation led Robert E. Lucas (2003: 1) to declare as solved, for many decades to come, the great problem of macroeconomic theory: the management or prevention of economic cycles. He limited the role of macroeconomic theory to the definition of appropriate incentives to induce individuals to work and save: low taxes and moderate public spending. For Lucas, the long-term welfare benefits deriving from better fiscal policies far exceeded the short-term potential benefits of management of demand, however optimal it may be (Lucas, 2003). In short, having tamed inflation and with available data and complex models, risks have been eliminated. Thanks to complete information, the markets are efficient and give the correct prices.

Efficient markets and correct prices were theoretical paradigms that endorsed the deregulation of financial and commodity markets, and guided the privatization and mergers of all types of businesses. All was well, or so it appeared, until the real estate bubble burst, in 2007-2008, ending the Great Moderation.

Several economists drew attention to the dangers that these axioms embodied, many using simple but revealing statistics, such as those shown convincingly by Galbraith (2009). One of the clearest perhaps was Minsky (2008). He argued that long periods of stability induce the taking of greater risks with higher rates of return, which fatally lead to Ponzi schemes like Madoff, Stanford, and the Colombian Creole version La Pirámide de La Hormiga (The Ant´s Pyramid).[11] For Minsky, instability is intrinsic to the capitalist financial system, so it requires better and more refined control, rather than less regulation. Thus Minsky dared to contradict the opinion of Greenspan (1998), who assured us that:

[11] A Ponzi scheme instrumented by David Murcia Guzmán. The name comes from the Putumayo city in which the scheme was located (Palacios, 2014).

> "information technologies have expanded markets to such an extent that governments, even the unbelievers, have no alternative but to deregulate ... The global financial markets are today, undoubtedly, more efficient than ever" (Greenspan, 1998: 1).

The crisis was foreseen and was avoidable, and only indifference and irresponsibility impeded it, as concluded by the extensive report of the United States Congress' Financial Crisis Inquiry Commission (FCIC, 2010).

Clearly, the crisis that began at the end of 2007 has been long and deep by the standards of post World War II, and full recovery is still not in sight (IMF, 2014). It is also not yet clear which axioms have been permanently discredited, since, although several paradigms have been challenged, resistance to change is strong, giving life to the words of W. Faulkner: "The past is not dead. Indeed, it is not even past." In Latin America, the crisis hit countries with different intensities, and, as we shall see, the recovery has been slow if not fragile.

In his appearance before the US Congress to explain the financial crisis, Greenspan (2007) stated that the intellectual foundations on which the macroeconomic policies of the Great Moderation had been built (the hypotheses of efficient markets and correct prices) had collapsed because the models did not sufficiently assess risk. However, 18 months later, in his submission to the Financial Crisis Inquiry Commission (FCIC), while he did identify the "global proliferation of toxic credit securities" as the immediate causes of the crisis, he exonerated the policy of cheap money and mass deregulation by identifying the collapse of communism as one of the root causes of the crisis. According to Greenspan, by establishing the rule of capitalism and market economics throughout the world, the United States had become exposed to competition from countries with lower costs, that save too much and spend too little, especially China and other Asian nations (Greenspan, 2010). In the same forum, Stiglitz (2009) provided a more objective assessment of the causes and actors responsible for the crisis: banks, financial funds, controlling agencies, and governments failing to fulfil their duty to protect citizens.

**5 Are the physics metaphors dead?**

At the end of 2014, nearly seven years after the onset of the crisis, we can ask if a new economic model, or at least a new international financial architecture, is emerging as many expected (Ocampo *et al.*, 2010a), or if, as John Quiggin (2010) stated:

> "Some ideas … are difficult to remove, even when they has been shown to be erroneous and dangerous. They are neither living nor dead – they are undead, or zombie ideas."

The Great Moderation principles that lead to the actual crisis are still in force among academics, politicians and public administrators, although their lack of explanatory power, erroneous economic predictions and their toxic prescriptions have been consistently demonstrated, as shown by the financial crisis of the Euro, most recently in Cyprus.

Only time will tell which ideas will prevail: those that conform to scientific rigour, or those that ensure the elegance and parsimony of the models and satisfy vested interests.

Some propose to bury the *natural unemployment rate* (NUR) and the *non-accelerating inflation rate of unemployment* (NAIRU) which have been used to design monetary and fiscal policies although their difficult or impossible demonstration makes both the NUR and the NAIRU a dubious guide to economic policy. Both these assumptions have legitimized the high rates of unemployment, or high informal and precarious employment of the strategies focused on GDP growth with low inflation, and have undervalued active policies to counter the high and prolonged unemployment that the crisis has generated. Today, more than ever, the automatic return of the labour market to full employment is questioned, and the acceptance as normal of high long term rates of unemployment, the so called *jobless recovery* and *jobless growth* is staggering (Farmer, 2009). Accepting the validity of both the NUR and the NAIRU would require the admission, on the one hand, that it has risen sharply in recent decades, far above the 5% level considered normal, and on the other, of the futility of any attempt to revive the labour market. Nothing has to interrupt the *great vacation*, however, in Lecky's *words* unemployment is nothing more than an irrational waste of productive resource.

A more comprehensive approach points to the efficient market hypothesis (EMH)[12] as another axiom to lay to rest. The EMH credo supposes the rationality of investors and households, and assumes that, given the necessary information about the future, they make correct decisions about consumption or investment (Kaletsky, 2009; Greenspan, 1998: 1). Markets give reliable signals for resource allocation according to Pareto optimality (Kay, 2009). The EMH, applied to financial markets, implied the deregulation of hedge funds and derivatives (Puyana, 2011; Thaler, 2009) and, for others, is the source of energy – and natural resource intensive GDP growth, deforestation, pollution, and climate change (Woodward and Sims, 2006).

A clear conception of the EMH is that the future is predetermined and revealed by the information provided by the models, and, as described by Davidson (2012: 3),[13] it eliminates the constant reflexive interaction that takes place between the actors involved in the markets, especially the financial market, and ignores the effects of these interactions because

> "...what people think about today's market can affect and alter the future path the market takes. The future is not predetermined" (Davidson, 2012: 3).

Other critics (Shiller, 2005; Akerlof and Shiller, 2009) have described the EMH as one of the most remarkable errors in the history of economic thought, since economic agents are not perfectly rational, and often have moments of optimism that lead to *irrational exuberance*, followed by pessimism and withdrawal from the market. The agents tend to act as a herd, because in the markets both optimism and panic are contagious. While it is difficult to predict prices, it does not necessarily follow that the prices dictated by the market are correct. Greenspan, in his testimony before Congress in 2008, identified the EMH, the great exuberance and the to-act-as-herd instinct as direct causes of the crisis.

The negligence of economists like Greenspan and Bernanke, managers of public policies that affect us all, was in rejecting even the possibility that there was a housing bubble, or if it

[12] Hypothesis proposed by Fama (1970) and criticized by Fox (2009), Thaler (2009), Bernstein (1996), Roubini (2006), and Shiller (2007), among others. Another criticism comes from a conservative author, who suggests that the current crisis proves that markets are not self-regulating and assigns the responsibility not to the government but to a market failure that market forces were unable to solve. Thus the deregulation of the financial market is responsible (Posner, 2009).
[13] Davidson criticises Samuelson for his endorsement of the ergodic models, because they eliminate the capacity for reflection and its effects.

existed, that it could explode, since the market would promptly take care of its gradual deflation (Greenspan, 2004, and Bernanke, 2005, cited in Krugman, 2011).

The crisis also challenged the assumption of *complete information* about products, prices and risk. The mortgage crisis and speculative bubbles would not have been possible if all investors were fully rational and had known the exact value of all investment options (Ackerman, 2008). However, only beings with superpowers would be able to access the hundreds of thousands of disperse data related to prices and profits that would be required to make truly optimal decisions (Foyle, 2004).

Finally, another neoclassical paradigm under discussion as a result of the Great Recession is the concept of *Pareto optimality*. The most serious criticism relates to public policies that allocate public goods based on a narrow definition of social objectives which are distant from reality.

That the market is not always efficient in allocating resources and frequently fails to ensure a stable balance, is now a conclusion more generally accepted. There are goods that cannot be put in the market, such as human life, and others in which trade would be morally unacceptable (slavery, human trafficking). Justice, education and other public goods should be available for all and the access to them cannot be price rationed. Moreover, public policies always benefit some groups to the detriment of others, depending on the interests pursued by the dominant groups (Ackerman, 2008). Hence the optimum is rarely achieved (Stiglitz, 1991).

That not everyone benefited and many lost from the reforms leading to the prevailing liberalized market is evident from the increase in concentration of wealth that has occurred in the globe during the last three decades, disproving the macroeconomic neoclassical 'trickle-down' promises: the spill that would guarantee greater welfare for all if GDP grew. Something did not work as expected and clogged pipes meant that 1% of Americans took ownership of 93% of the additional revenue generated in 2010, as compared to 2009. In addition, the average income of a full-time worker is less than it was more than four decades ago – "meanwhile, those at the top have never had it so good" (Stiglitz, 2012: 1). The elite 1% of the richest Americans concentrates the power to influence and direct the definition and enactment of laws, regulations and policies that favour them, according to Stiglitz. For example, the bailout of banks with public funds, the labour flexibility laws, corporate incentives and tax policy, and the rejection of writing-off of mortgage debt or its renegotiation (Despain, 2012). To resolve the crisis, monetary easing should be accompanied by debt forgiveness to households, not banks. Ocampo *et al.* (2010a) and Ocampo and Stiglitz (2008) give clear ideas and arguments as how to analyse the intrinsic problems of the functioning of the global economy since the eighties, and proposes ways to reform and improve them. The ideal solution to the financial system is to transform the Special Draw Rights (SDR) into the major global reserve asset, creating a global fiduciary currency as the centre of the system (Ocampo *et al*., 2010a: 24).

**6 Social policies versus economic policies**

The debate about the relationship between economic and social policies has been strengthened by the facts shown in previous sections and the publication of *Capital in the*

*Twenty-First Century*[14] and the myriad of notes on the author's theoretical limits, arguments and statistical methods[15]. In synthetic form, the definition of growth as the ultimate goal of any economic policy subsumes all others. The definition of development and social policy typically accepted since the 70s is clearly based on this subordination, and enshrines GDP growth as the primary objective of economic theory and the central concern of economic policy (Lynn, 2003: 129). Growth has become, as revealed by the in-vogue definition of social development, the basis for political advancement since the 80s:

> "We conceive of social development as the natural complement to economic development, both for its intrinsic and instrumental value" (World Bank, 2005:2).

Thus, social policy is reduced to no more than a complement to economic policy, which cannot affect either its essence or nature. For example, poverty programmes must limit themselves to relieving the more aggressive and harmful effects of the growth model (increased inequality, resilient poverty and precarious employment), since these can lead to 'disappointment' with democracy, or globalization, or both; to social conflicts of varying intensity; or to unexpected election results and undesirable populist governments (some from South America) with, for orthodox economists, unacceptable redistributive programmes. The desire to isolate and make social policy independent from economic policy has its origins in the separation of positive and normative economic theory, and leads to the false question of whether there are social and economic objectives that are independent and contradictory to each other – a meaningless distinction in economic reality. There are no economic objectives without social effects and vice versa – they form an indivisible unity. Exchange policy, for example, has clear distributional effects (revaluation is a subsidy to imports, and affects the production structure of importable and exportable goods and the labour market). It is also a subsidy to those with debts and expenses in dollars, and a tax on remittances. It changes the relative prices of importable, exportable and non-tradable goods. Curbing inflation has effects on employment, labour income, investment in education and health; on the labour force, its dynamic and productivity; and on economic growth.

Finally, the alleged scientific superiority of economic theory (Edward, 2000; Becker, 1996) has ignited a debate about the relationship between economics and other social sciences. The assumed scientific superiority has led to the emergence and acceptance of the 'imperialism of economics in the social sciences',[16] and other social science disciplines are uncritically adopting the economic axioms currently under question among economists from different strands. Perfect markets and rational expectations invaded the study of voters' rationality, institutions, economic history, political uprisings and the drug trade. The study and interpretation of the institutions also adopted them to propose the third wave of structural reforms. It is also evident in social programmes, where the universal social rights of the welfare state are being replaced by targeted and conditioned cash transfer programmes. In these, it is assumed that the poor are rational beings and, as such, will respond correctly to bureaucratically established economic stimuli and sanctions. Once equipped with basic health and education, children from households in extreme poverty will be individuals with the skills and knowledge necessary to compete and triumph in supposedly perfect markets, in

[14] Piketty, T. (2014) *Capital in the Twenty-First Century,* Harvard UPI
[15] For an exhaustive recount, see *Real-world economics review special issue* (no. 69) on Piketty's Capital at: http://www.paecon.net/PAEReview/issue69/whole69.pdf
[16] For a detailed analysis of the imperialism of the economy, the abundant literature of Fine Ben, such as: Fine (2008) and Fine and Milonakis (2009a; 2009b).

imaginary meritocratic societies. At this point society has done its duty, the responsibility now rests with the individual.

## 7 The lessons from Latin America

Several reasons validate concluding this essay on the crisis of economic theory and economic policies, with insights into the Latin American economic development, since the 1982 debt crisis, exemplified by the Mexican experience.

The first reason is that the process of reforms and structural adjustment that took place in Latin America in the 70s, 80s and 90s, and which intensified after Mexico signed NAFTA, have been repeatedly presented as examples of the successful implementation of economic liberalization, macroeconomic adjustment and fiscal discipline. The entire world, especially the countries now called 'peripheral Europe', has been advised to follow Latin American reforms as an exemplary safe route to sustained growth. C. Lagarde spoke in this vein in 2008, in declarations before her visit to Mexico, Peru and Brazil.[17] The International Monetary Fund chief prudently failed to mention that Latin America is the region with the most inequality in the world, and that large numbers of the population have been and are being permanently excluded from progress and civil rights, and have never enjoyed a welfare state. Under the prevalent Latin American political conditions, it may be easier to establish cuts to basic social spending than in more plural, less discriminatory and more democratic societies. The International Monetary Fund chief, in her statements, neglected to mention that structural reforms in Latin America were initiated in the 70s in Chile and Argentina, during the military dictatorship of Pinochet and Videla, and subsequently in Mexico during the full power of the PRI regime – the 'perfect dictatorship' according to Vargas Llosa. In these countries the liberal reforms were earlier and more intensive and comprehensive than in other, less dictatorial or more democratic, Latin American countries (LAC).

Second, liberalization of foreign trade and the North American Free-Trade Agreement (NAFTA) were presented to the world, especially to developing countries, as the optimal integration into the global economy, by linking Mexico and the United States in a process of total and accelerated trade liberalization. Mexico and United States are highly contrasting countries in terms of their resource endowments, productivity, technological development, political might and military power. According to classical economic theory, this North-South trade agreement, of the most classical Ricardian cut, would maximize Mexican trade benefits and ensure higher economic growth rates than those Mexico had before NAFTA came into force. After two decades under the rules agreed in NAFTA, not one of these effects has emerged at the expected speed and intensity and the Mexican economy has not recovered the rates of GDP, productivity and employment growth registered during the import substitution period. Nevertheless, several Latin American countries, including Colombia and Chile, ten years later signed NAFTA type agreements, possibly to avoid being left out of the '*friends of the United States'* club. They followed the path initiated by NAFTA, without paying attention to the effects that were already being observed in Mexico. It could be said that leaders in Mexico, Colombia or Chile not only failed to read Linder (1961) Amsden (1986;

[17] Ms Lagarde (2011) in an interview to *iMFDirect*, stated: "...the new Latin America can provide some lessons to the developed countries about saving for a rainy day and controlling the financial system". Argentina confronted the 2001 crisis devaluating the peso and defaulting on payments, measures that Greece, Spain and Italy cannot adopt if they wish to stay in the monetary union.

1989), Krugman or Rodrik, but also overlooked the real world lessons coming from Mexico and other countries.

Third, Latin America seems to be specializing in primary commodities, rebuffing to deepen industrialization, and ignoring the consequences of relying on the exports of natural resources and subjecting their economies to the *Dutch Disease symptoms* and the *natural course syndrome*. This "reprimarization" of Latin American Economies is a logical and expected effect of the liberalization of the regions' economies and foreign trade policies (Frenkel and Rapetti, 2011). All Latin American countries become engaged in a Ricardian exports pattern: on one side, Mexico and other Central American and Caribbean countries as exporters of manufactures inserted in global value chains, with low national value added and low labour intensity at individual product level and; on the other – Argentina, Brazil, Chile and Colombia amongst them – specializing in commodities and resource based manufactures.

Fourth, the growth spells Latin America experienced (2004-2006 and 2008-2013) coincided with low inflation, rising commodity prices, a relaxation of the external constraints and the reduction of income concentration. Most important, multilateral organizations argued that these growth spells meant that the region had initiated an irreversible sustainable growth path thanks to adjustment policies and liberalization. So Latin American governments need not be worried any more about how to restore growth and control inflation (the problems which for decades restricted the region's development), but rather about how "to manage prosperity with equity".[18] These assertions recall Lucas's (2003) dictum on the death of economic cycles mentioned above.

Fifth, the region succeeded in reducing poverty and inchoately lowering income concentration, when in other countries, especially in the EU and the USA, the path was the opposite. For considering the above points, we will discuss the path of trade liberalization and its effects, since it was the central element of the reforms. Further, we present in more detail the effects of economic liberalization, the reprimarization of exports and the reduction in inequality.

*The liberalization path after the debt crisis*: The liberalization of Latin American countries has been intensive and indisputable. For example, the external coefficient of Argentinean GDP grew from 10.3 % in 1970 to 34% in 2011 and descended in the two years after. The change observable in Chile and Mexico was from 14.5% to 65.8% and from 17.4% to 64.2%, respectively (WB, 2014). Table No. 1 presents the trajectory of the liberalization of LAC economies. Some patterns emerge: First Chile and Mexico, the upmost liberal economies with an external coefficient that, in 2013, almost doubles the LAC average. Second, Argentina, Brazil and Colombia, with the lowest external coefficient in 2013. Third, Colombia and Chile had between 1960-1970, the highest external coefficient of all countries represented in Table No. 1, and the liberalization of Colombia after 1990 was rather slow. In general, larger economies tend to have a smaller external coefficient since their larger domestic market and resource abundance permit it. But Mexico does not fit this argument. All countries liberalized their economies and there is no clear ideological difference between the left-leaning regimes (Left of the Centre, LOC) countries and the centre-right and right as in the classification in Cornia (2012).

[18] Augusto de la Torre´s (World Bank, Chief Economist for Latin American and the Caribbean), comments at the OAS Forum on "Prosperidad con Equidad: el Desafío de la Cooperación en las Américas", Washington, October, 2014. The same opinion was defended by Bustillo, Director of ECLAC office in Washington.

**Table No. 1** External Coefficient of the economies of selected Latin American Economies 1960-2013

| | | EXTERNAL COEFFICIENT (EXPORTS+IMPORTS/DGP)100 | | | | | G. Domestic Product | |
|---|---|---|---|---|---|---|---|---|
| | GDP Trillons US$ 2005) | Values in % GDP[1] | | | Annual growth rates[2] | | Annual growth rates[2] | |
| | | 1960 | 1980 | 2013 | 1960-1980 | 1981-2013 | 1960-1980 | 1981-2013 |
| Brasil | 1.17 | 14.2 | 20.4 | 27.6 | 4.8 | 1.6 | 7.3 | 2.6 |
| México | 1.04 | 20.1 | 23.7 | 64.2 | 1.0 | 3.8 | 6.8 | 2.5 |
| Argentina | 0.33 | 15.2 | 11.5 | 29.3 | -0.2 | 4.5 | 3.5 | 2.6 |
| Colombia | 0.21 | 30.4 | 31.8 | 37.4 | 0.6 | 0.7 | 5.4 | 3.6 |
| Venezuela[4] | 0.19 | 43.3 | 50.6 | 50.4 | 1.1 | -2.0 | 3.9 | 2.3 |
| Chile | 0.17 | 29.2 | 49.8 | 65.5 | 3.6 | 1.0 | 3.6 | 4.8 |
| Perú | 0.12 | 41.6 | 41.8 | 48.4 | 0.5 | 2.6 | 4.5 | 3.3 |
| Ecuador | 0.06 | 36.3 | 35.0 | 63.6 | 1.2 | 2.3 | 5.5 | 3.2 |
| Panamá[7] | 0.03 | ND | 186.9 | 137.7 | ND | -0.6 | 6.0 | 4.8 |
| Costa Rica | 0.03 | 47.6 | 63.3 | 73.9 | 1.7 | 1.0 | 5.9 | 4.1 |
| Uruguay[4] | 0.03 | 32.4 | 35.7 | 55.8 | 2.4 | -1.0 | 2.2 | 2.5 |
| El Salvador[5] | 0.02 | 55.2 | 67.4 | 72.2 | 1.6 | 0.7 | 3.1 | 2.1 |
| Bolivia[3] | 0.01 | 48.9 | 46.8 | 85.1 | 0.0 | -0.8 | 3.4 | 2.9 |
| Paraguay[6] | 0.01 | ND | ND | 92.7 | | 0.7 | 7.0 | 3.6 |
| Honduras | 0.01 | 44.4 | 81.3 | 117.5 | 3.3 | 1.7 | 5.1 | 3.3 |
| Nicaragua | 0.01 | 49.8 | 67.5 | 92.9 | 1.8 | 5.0 | 3.9 | 2.0 |
| | PROMEDIO | 36.3 | 54.2 | 69.6 | 1.7 | 1.3 | 4.8 | 3.1 |

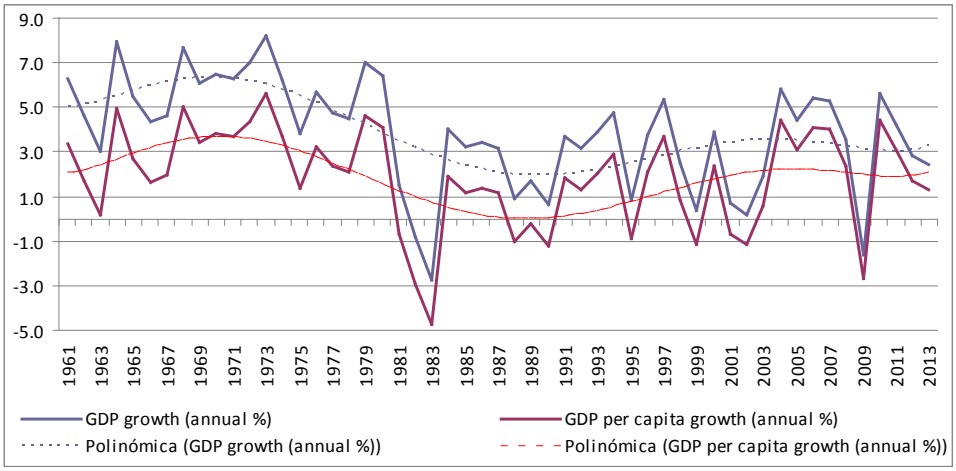
Source: Own elaboration based on WB, WDI, 2014

As to the speed of liberalization, Table No.1 suggests that in the period 1960-1980, several countries in Latin America (Brazil, Chile, Uruguay, Honduras...) did open the economy, reforming the Import Substitution model. In the second period, some countries, including the ones with a lower coefficient in 2013, opened their economies to external competition in high gear. Paradoxically, Chile, up to date the most liberal economy, opened its economy less rapidly than Brazil and Argentina. And Colombia, considered to be a radical orthodox economy, appears as moderate in exposing its economy to external competition.

And yet, the post liberalization growth path does not correspond with expectations, as Graph No. 1 illustrates. Structural reforms and liberalization, both within the framework of the WTO or in regional arrangements, were supposed to deliver a balanced macroeconomic environment conducive to higher growth rates and move the economy towards a new process of industrialization with higher levels of productivity, as well as stimulate private domestic and foreign investment so as to raise the rate of capital formation. All these effects were to improve employment and labour income. As we shall see, little of this has been achieved despite the undisputed liberalization, which took place at a different pace and intensity in each country.

Economic expansion after 1983, even the growth spells (2003/2008 and 2010/2013) have been lower than before the crisis (two last columns in Table No. 1, and Table No. 2). A similar course was followed by capital formation and labour productivity (Puyana, 2014). The rates of Latin American GDP growth, presented in Table No. 2, show the lower pace since 1980.

**Graph No. 1** Latin American and Caribbean gross domestic product rates of growth (in percentages) 1960-2013.




Source: Own elaboration based on WB, WDI, 2014

From both Graph No. 1 and Table No. 2, it is clear than not even during the years of faster growth, were the record levels of the decades before the crisis surpassed. It is clear as well that instability, measured by the standard deviation of the growth rates seems to be higher than before. So optimism has to be restrained.

**Table No. 2** Latin American GDP Growth Rates, 1960-2013

| | Annual GDP Growth | | Standard Desves. | |
|---|---|---|---|---|
| | Total | per head | Total | per head |
| 1961-1980 | 5.83 | 3.20 | 2.13 | 2.02 |
| 1981-2000 | 2.41 | 0.65 | 2.01 | 1.99 |
| 2001-2008 | 3.41 | 0.27 | 1.65 | 1.60 |
| 2009- 2013 | 2.71 | 1.56 | 2.71 | 2.68 |

Source: Own elaboration based on WB, WDI, 2014

The impacts of liberalization of capital and trade accounts, plus the brunt of the protracted appreciation of national currencies as a price anchor, were not made explicit. Under these conditions, productive investments do not flow due to a lack of profitability, and the registered growth of the economy has proved to be insufficient to boost job creation and prevent salary deterioration.

The liberalization of foreign trade increased the trade imbalance as a proportion of GDP, an indicator of the limits of foreign trade as a growth driver. Among the variables that explain the growth of the region, and of each of the large and medium countries, trade liberalization has very little explanatory power – almost none – although the relation is positive in some countries (Colombia, Chile and Peru) and negative in others (Mexico, Argentina, Brazil)

(Puyana, 2014). The changes in the tariff structure reduce the protection to domestic value added, which, combined with currency appreciation, has generated another type of substitution: that of national with imported labour. All in all, and despite significant trade liberalization, the region has not recovered the proportion of world trade that was recorded in 1960 or 1970.

*The reprimarization of Latin American Economies:* Economic liberalization opened the door to the reallocation of productive factors in accordance with competitive advantage and abundance of natural resources, and the resurgence of specialization based on it in accordance to the Heckscher-Ohlin model. Brazilian and Argentinean exports of commodities and food products constitute 63-65% of total exports. This proportion is similar to that registered in Costa Rica and Honduras, which export low technology final consumption manufactures inserted in global value chains. Again, as with the external coefficient, nothing clear-cut emerges between countries divided by political differences. Production and export structures of countries with larger economies and territories tend be more diversified and in commodities and food than small countries.

So, the Latin American neo-extractivism emerged and an interesting theoretical debate on how to interpret it. There are two ways of looking at neo-extractivism: first, the increasing participation of commodities in total exports; and second, the resulting deindustrialization of open economies. Both processes are present in the trajectory of the region´s economies structures. Table No. 3 presents the structure of several Latin American Countries and reveals the specialization in commodities and their manufacture. Mexico, Costa Rica, El Salvador and Panama figure as exporters of hi-tech manufacturing, a misleading data since even in Mexico the national value added of its exports is minimal and responds mainly to ensemble activities.

**Table No. 3** Export structure of Latin American countries. In percentage of total exports

| | **Exports structure** | **Specialization of exports** |
|---|---|---|
| Argentina | Materias primas (65%) | Alimentos (54%) |
| Bolivia[3] | Materias primas (95%) | Combustibles (55%) |
| Brasil | Materias primas (63%) | |
| Chile | Materias primas (86%) | Oro y metales (61%) |
| Colombia | Materias primas (82%) | Combustibles (70%) |
| Ecuador | Materias primas (91%) | Combustibles (58%) |
| El Salvador[5] | Manufacturas (71%) | Manuf de alta tecnología 4.7% |
| Costa Rica | Manufacturas (61%) | Manuf de alta tecnología 39.6% |
| Honduras | Materias primas (66%) | Alimentos (56%) |
| México | Manufacturas (74%) | Manuf de alta tecnología 16.3% |
| Nicaragua | Materias primas (95%) | Alimentos (90%) |
| Paraguay[6] | Materias primas (91%) | Alimentos (60%) |
| Panamá[7] | Manufacturas (93%)* | Manuf de alta tecnología 35.4% |
| Perú | Materias primas (85%) | Oro y metales (50%) |
| Venezuela[4] | Materias primas (97%)* | Combustibles (97%) |

Source: Own elaboration based on WB, WDI, 2014

The debate intends to respond to two main questions: is neo-extractivism a new development model, and are the governments pursuing it neo-developmental ones? Gudynas (2012) describes neo-extractivism as a development path based on the "commoditization of nature" with an enclave type of production mainly for exports. The model depends on foreign investments and technology. Coinciding with Acosta A. (2012) he suggests that neo-developmental states use commodity rents to pay for social expenditure, reduce poverty and alleviate inequality, without taxing large capital earnings or changing the export lead model, therefore, for Gudynas neo-extractivism is a new economic model, which he names post neo-liberal. On the other side, Hans-Jürgen Burchardt and Kristina Dietzb suggest that the political ecology of neo-structuralism has not been sufficiently analysed. For them, despite the improvements in poverty and inequality, and in some cases in the labour market, neo-extractivism is not a new model and the neo-extractivist states maintain several elements of rentist states. The distribution of the rents could be one way to consolidate political support for a model that has several negative effects on distribution, democracy, employment and the environment. So, a conservative political consensus emerged based on "sharing the spoils, not on solidarity" (Burchardt and Dietzb, 2014: 476).

*The reduction in poverty and inequality* registered in Latin America is one of the arguments in favour of economic liberalization and structural reforms, although the reasons for the decline are not without debate. Abundant literature on the reduction of poverty and inequality in the region seems to confirm the gains even during and immediately after the 2008 crisis, and they attribute it to the emergence of democratic left wing regimes, especially in South America (Bolivia, Brazil, Chile, Ecuador, Uruguay and Venezuela).

Table No. 4 shows the long term trajectory of the GINI index of income concentration in several Latin American Countries, grouped by political orientation as suggested by Cornia (2012). Andrea Cornia (2012; 2014) provides a classification of countries according to their political orientation. He puts countries in four groups (Radical Left, Social Democrat Left, Centre, Centre Right and Right). For him, the biggest reductions are registered in countries at the *Left of the Centre* (LOC) and explained it in terms of the change of regime in 15 countries. Without commenting the problems related to such fine-tuned classification, we would like to show that the progress in reducing Latin American inequality depends on the period considered. To reckon with the trajectory after the reforms, a long term perspective is needed and with it a different picture emerges. In several countries inequality was more intensive in 2010 than in 1960 or in 1980, and the reduction is minimal. During 1960-1980, almost all countries reduced inequality, and the process reversed after the reforms in the 80s decade. In the 2000-2010 period, the Radical Left and Social Democrat Left countries did manage to reduce inequality quite substantially indeed, but it took place after 2005. Some of the causes of this improvement cannot, however, be attributed to public policies, neither to an economic model that promotes a growth path with better employment, higher productivity and higher incomes, and progressive fiscal and labour policies.

**Table No. 4** Latin America. Gini Coefficient evolution from 1960 to 2010

| Political regime | País | Índice de Gini | | | | | | GINI growth by periods | | | | Gini Growth. Average country groups | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1960 | 1980 | 1990 | 2000 | 2005 | 2010 | 1960-80 | 1960-10 | 1980-00 | 2000-10 | 1960-80 | 1960-00 | 1960-10 | 1980-00 | 1980-10 | 2000-10 |
| Radical Left | Bolivia | | | 42.04[1] | 64.3 | 58.47 | 50.8[2] | | 20.9 | 52.9 | -21.0 | | | | | | |
| | Nicaragua | 68.1 | 57.9 | 56.7 | 57.9[3] | 53.2 | 47.8[2] | -15.0 | -29.8 | 0.0 | -17.4 | | | | | | |
| | Venezuela | 46.2 | 44.7 | 44 | 46.8 | 49 | 39.4 | -3.2 | -14.7 | 4.7 | -15.8 | -9.1 | 39.3 | -9.1 | 19.2 | 1.1 | -18.1 |
| Social-demcratic-left | Argentina | 41.4 | 47.2 | 47.7 | 51.06 | 49.27 | 44.5 | 14.0 | 7.5 | 8.2 | -12.8 | | | | | | |
| | Brasil | 57 | 57.1 | 57.3 | 64[4] | 61.3 | 57.6[2] | 0.2 | 1.1 | 12.1 | -10.0 | | | | | | |
| | Chile | 48.2 | 53.1 | 54.7 | 55.22 | 51.79[5] | 52[2] | 10.2 | 8.3 | 4.0 | -5.8 | | | | | | |
| | Ecuador | 61 | 54.2 | 56 | 55.9 | 53.1 | 49.5 | -11.1 | -18.9 | 3.1 | -11.4 | | | | | | |
| | El Salvador | 42.4 | 48.4 | 50.5 | 53.1 | 47.88 | 45.4 | 14.2 | 7.1 | 9.7 | -14.5 | | | | | | |
| | Paraguay | | 45.1 | 57 | 55.8[4] | 52.8 | 53.3 | | 18.2 | 23.7 | -4.5 | | | | | | |
| | Uruguay | 37 | 43.6 | 40.6 | 44.39 | 45.87 | 42.2 | 17.8 | 14.1 | 1.8 | -4.9 | 7.5 | 2.3 | -1.3 | 8.9 | -0.2 | -9.1 |
| Centrists | Costa Rica | 50 | 48.5 | 46 | 47.4 | 47 | 49.2 | -3.0 | -1.6 | -2.3 | 3.8 | | | | | | |
| | Honduras | 66 | 54.9 | 57 | 56.4[4] | 59.51 | 56.7 | -16.8 | -14.1 | 2.7 | 0.5 | | | | | | |
| | Perú | 61 | 43 | 46.4 | 50.93 | 49.28 | 45.8 | -29.5 | -24.9 | 18.4 | -10.1 | -16.4 | -12.1 | -13.5 | 6.3 | 4.4 | -1.9 |
| Centre-right and right | Colombia | 54 | 59.13 | 56.7 | 58.68 | 55.1 | 55.7 | 9.5 | 3.1 | -0.8 | -5.1 | | | | | | |
| | México | 60.6 | 50.9 | 53.1 | 54.2 | 52.8 | 48.1 | -16.0 | -20.6 | 6.5 | -11.3 | | | | | | |
| | Panamá | 50 | 47.5 | 56.3 | 57.66 | 52.9 | 51.9 | -5.0 | 3.8 | 21.4 | -10.0 | -3.8 | 4.5 | 4.5 | 9.0 | 0.3 | -8.8 |

1 Gini 1991 and 2009.
2 Gini 2009.
3 Gini 2001.
4 Gini 1999.
Source: Own elaboration based on Cornia (2012), WDI (2014), CEPAL (2014) for index in green and Prados de la Escosura (2005) in red index.

Cornia lists external and internal causes for reductions in poverty and inequality among the first. He mentions the terms of trade improvements, rising remittances from workers abroad and larger access to international credit. The domestic causes of poverty and inequality reduction are: first, decline of the rate of dependence and the increase in activity rates; improvements in education levels and the reduction in higher education responding not to increase of wages of low skilled labour resulting from increase in the demand of that labour, but from the declining of real medium salaries of better educated workers; finally, but not least, the effects of monetary conditioned cash transfers, fast economic growth and changes in fiscal expenditure.

***Some lessons from Mexico***

The advancement of Mexican exports is the most notable amongst all Latin American countries, a real miracle as some called it in early 90s. In fixed year 2000 dollars, they grew from $24 billion in 1980 to $330 billion in 2013. Imports grew faster. Manufactured goods account for 85 % of external sales, and a similar proportion of these are products originating in maquila[19] and other temporary import programmes. Mexican exports of manufactured items incorporate low national value added, have low technological intensity, are intensive in imported inputs and despite its relative labour intensity, generate few jobs. In effect, while manufacturing exports advanced from 10 to 85% of the total Mexican foreign sales, its proportion of GDP and total employment stagnated (around 18% the first) or declined (to 10% the second). Hence, sectoral productivity gains have been achieved, but mostly by reducing employment rather than by increasing total production volume. These facts demonstrate the effects generated by the combination of full trade liberalization, flexibilization of labour regulation and exchange rate appreciation. In fact, the index of manufacturing openness is around 93 % of the sectoral GDP, due to the high imported content of manufactured exports.

In contrast to what was proposed, in Mexico neither capital endowment per worker nor gross formation of fixed capital have grown in relation to GDP, despite the increase in external financial flows. The increase in investments in the late 80s and early 90s is primarily explained by privatizations and acquisitions of existing companies, none of which raised capital stock. In 2013, the capital endowment per Mexican worker in 2000 dollars was about 3% lower than in 1980. Investments are made by a limited number of companies linked to either the export sector or activities that emerged during the import substitution industrialization, such as the manufacture of automobiles, chemicals, plastics, electronics, etc. When these activities and businesses are embedded in global production chains, they are located in the fragments of the production process with the lowest technological content, and the investments are not complex.

In corollary with the negative investment trajectory, the informal economy and informal employment are rising, with the former representing about 27% of GDP, and the latter around 63% of the total employed population (Puyana and Romero, 2012). The advance of the informal sector suggests, firstly, that the surplus of labour in agriculture has shifted to the cities and taken refuge in the informal sector, and secondly, that the movement of factors has not driven the growth of total productivity, neither labour nor a total of factors, as suggested in Puyana and Romero (2009) and several authors cited in that work.

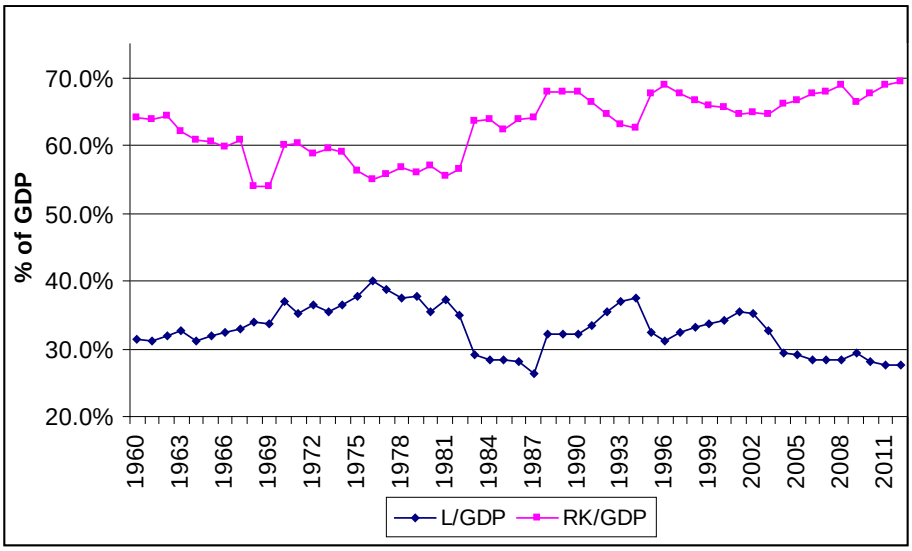
[19] A manufacturing operation in a free-trade zone which imports material and equipment on a duty-free and tariff-free basis for assembly, processing or manufacturing, and then exporting the finished products.

Both the reforms and the multilateral liberalizations (or NAFTA) seem to have failed to bring about change in the structure of GDP and employment towards the tradeable sectors with higher productivity in international terms. These have receded considerably and given way to services and construction, sectors which combined have lower productivity than manufacturing, although slightly more than agriculture. This composition of GDP and employment is a symptom of the premature receding of tradeable sectors, in a process that has intensified since 1981 and which also affects almost all Latin American countries, Colombia, Argentina or Brazil.

This context displays the most important failures of the reforms: their inability to guarantee sustained growth rates higher than those from the period of import substitution in Latin America and those registered in developed countries, which, in the case of Mexico, explicitly meant bridging the gap that separates it from the United States. It was said repeatedly that the push that NAFTA would give to exports and investments would be of such magnitude that Mexico would export goods and not people as the two economies converged. This has not happened, given that the Mexican average annual growth per capita in GDP during 1980-2011 was the lowest since 1900, and far less than that recorded in 1945-1980, when recorded growth rates of GDP per capita were higher than in the United States and the gap between the countries narrowed. Since NAFTA, migration has multiplied, reaching over half a million nett migrants per year and, *pari passu*, this has made remittances expand to over 24 billion pesos in 2008, with a strong effect on the earnings of at least four million poor households. Only the crisis in the United States and the militarization of the border has reduced migration and reversed the diaspora.

Besides the “export success”, low unemployment – around 4.4% of the active labour force since 1982 – with inflation below 6% in the last year are presented as an example of the strength of the Mexican economy. Hence, the traditional low unemployment rate does not imply that the Mexican economy is in good health or approaching full employment, given the accumulation of informal employment, low productivity and low incomes. During the crises, the Mexican labour market adjusted itself in terms of income, wages, and changes in the relationship between formal and informal employment. The long lasting effect of the worsening of labour conditions is the fall of labour´s share in national income and the increase of earnings accruing to capital. Labour share decreased from nearly 40% of income in 1975 to just above 29% in 2012 (Figure No. 2).

**Figure No. 2** Share of labour and capital in national income 1960-2012.




Source: From Puyana, A. 2014

The production of manufactured items presents a similar path: larger rates of growth of income (g) and lower in wages (r). In effect, for the period 1990-1013, the value of r-g was -13.48, signaling a major expansion of g. In comparison, for the period 1995-2013 we found gains in annual productivity which contrasts with declining in real annual wages per worker (Figure 3).

**Figure 3** Mexico: Annual productivity per worker and real annual average wages per worker. 1995-2013 (in thousand pesos 2010).


Source: Puyana, A. 2014

According to Lewis (1954), under conditions of abundant labour, real incomes rise when an economy moves from the earliest stage of classic development with abundance of labour, to the second stage, that of neo-classical development, with scarce labour and increases in the total labour income. Before reaching this stage, the benefits of growth accrue due to the

absorption of surplus labour and not to the growth of incomes (Puyana and Romero, 2012)[20]. Our assumption is that the Mexican economy is still in the classical development stage, of abundance of labour, at a pre-Lewisian turning point, as a result of the pattern and dynamic of economic growth since the reforms. The surplus labour in agriculture has moved to the urban informal sector, let it be, domestic labour, trade, street traders and so on, and not to modern sector higher productivity activities such as manufactured goods and sophisticated services. So, agriculture and rural emigration in Mexico have taken place at an intensive pace without corresponding increases in labour productivity, and only with decreases in its share in total GDP and labour. Mexico and other Latin American countries did not promote the *agricultural revolution*, that is, accelerated increments in labour productivity and per hectare yields which Kaldor (1967) presented as necessary requisite industrialization, which in turn is an indispensable development factor. Others arrived at the same conclusion years later, including authors such as Meier, G (1995 and 2000), Krugman (1997) and Rodrik (2013. Industrialization is even more important for open economies intensively integrated in global markets. What a country exports matters for economic growth and income distribution. As Haque, suggested, it does matter whether a country exports potato-chips or micro-chips (Haque Irfan *et al*., 1995). The failure to industrialize and to elevate agricultural productivity has put Latin American countries in a track of low growth-low income-low demand. This is an effect of the deindustrialization process resulting from depressed aggregate demand, spurred by the interaction with international economy (Patnaik, 2003) in not full employment conditions. In developing countries, even in the most dynamic emerging countries, full employment was and is not the norm.

Mexico, and practically all of Latin America, fully liberalized their economies so the movement of goods and capital is totally free, but labour is not and economic international migration is very costly. This partial factor liberalization accelerated the mobility of capital and increased the ratio capital/labour mobility. Therefore, capital is relatively more scarce, labour more abundant and the relative profitability of capital higher. From 1980 to 2012, Mexican real minimum collapsed and medium wages stagnated. Table No. 5 presents the index of real minimum and medium wages during 1980-2013. The index of minimum wages in 2012 was 68.3% lower than in 1980.

**Table No. 5** Index of minimum and medium real wages 1980-2013. Year 2000 = 0.

| | Minimum Real wage | Medium Real wages |
|---|---|---|
| 1980 | 312 | 114 |
| 1990 | 145 | 89 |
| 2000 | 100 | 100 |
| 2010 | 97 | 113 |
| 2013 | 99 | 114 |

Source: Puyana, A. 2014

The problem is that in Mexico, as in other Latin American countries, there is evidence of an asymmetric reduction of the income elasticity of employment, which means that if the response of employment to falls in output is now less intense, the recuperation of employment when the economy expands is even more subdued. In other words, if one accepts the notion of a natural rate of unemployment, it appears to be rising. The liberalization of the economy

[20]In Puyana and Romero, 2012, the Lewis model is analysed in detail, and its econometric formulation is developed and applied to the study of Mexican growth between 1940 and 2008.

and the expansion of exports have not encouraged greater labour absorption, or its transfer to the tradable sectors with higher productivity.

Another factor to consider is the declining labour intensity of GDP, observed between 1960 and 2011. In Mexico it fell 40%, while in Colombia, Argentina, Chile and Uruguay it fell by more than 50%. This trend is the consequence of increasing productivity by substituting jobs for capital and maintaining lean output growth. This situation is paradoxical since with liberalization, the effective demand for the domestic product is global and, for small countries such as Colombia, Chile, and even Mexico, demand is assumed to be infinite and, except for a few products (such as Brazilian or Colombian coffee), their production and exports do not affect world prices. The reduction of production cost by importing better inputs at lower than domestic prices, or by the liberalization of labour and capital markets and tax cuts, have not been translated into more investments and higher output and employment growth, but rather into juicier profits and an elevation of the share of capital in income and decline in of that of wages, very clearly so in Mexico, as illustrated in figures No. 1 and 2 and commented in Puyana, A. (2014). That trend has translated into the fall of the index of real minimum and average wages. While average wages recovered the loss between 1980 and 1990, the real minimum wage index fell sharply, to represent by 2013 only 31% of the index in 1980. In 2013, the proportion of workers earning up to three minimum wages was 65%, an increase of 35% from 1980. This increase illustrates the downfall of labour incomes, since three minimum 2013 wages represented only one third of one the minimum wage of 1980. So the balance of the Mexican liberalization is alarming: lower rates of economic growth, rather feeble expansion of productivity and the fall in real incomes and, with it, faint domestic demand.

## Conclusions

There are grave doubts about the possibility of an economic paradigm shift being the outcome of the protracted global economic crisis. For a radical change to be feasible, a political change is needed, deeper perhaps than that which occurred in France in the last election or in those of other countries around the globe. I have in mind Argentina, Bolivia and Ecuador, for instance. The power of large financial interests is great and in the United States they have a legal license to promote the election of presidents, Congressmen and women, and the discretion to relentlessly lobby them. Latin America seems divided into two well-defined camps, with two distinct ways of making policy and directing the economy. Which of these will be predominant in the long term remains unclear. The changes in political power and economic policies in some countries such as Argentina, Bolivia, Brazil, Ecuador or Venezuela are interesting and important, but so far it is not clear whether they will last, or how far they intend to change the liberal export lead model in a meaningful degree. There are also doubts about the economic path the newly-elected Indian Prime Minister will take and where the country will go.

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**Author contact:** alicia.puyana@gmail.com

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# Capital accumulation: fiction and reality

Shimshon Bichler and Jonathan Nitzan[1] [Israel and York University, Canada]



## 1. The mismatch thesis

What do economists mean when they talk about "capital accumulation"? Surprisingly, the answer to this question is anything but clear, and it seems the most unclear in times of turmoil. Consider the "financial crisis" of the late 2000s. The very term already attests to the presumed nature and causes of the crisis, which most observers indeed believe originated in the financial sector and was amplified by pervasive financialization.

However, when theorists speak about a financial crisis, they don't speak about it in isolation. They refer to finance not in and of itself, but in relation to the so-called real capital stock. The recent crisis, they argue, happened not because of finance as such, but due to a *mismatch* between financial and real capital. The world of finance, they complain, has deviated from and distorted the real world of accumulation.

According to the conventional script, this mismatch commonly appears as a "bubble", a recurring disease that causes finance to inflate relative to reality. The bubble itself, much like cancer, develops stealthily. It is extremely hard to detect, and as long as it's growing, nobody – save a few prophets of doom – seems able to see it. It is only *after* the market has crashed and the dust has settled that, suddenly, everybody knows it had been a bubble all along. Now, bubbles, like other deviations, distortions and mismatches, are born in sin. They begin with "the public" being too greedy and "policy makers" too lax; they continue with "irrational exuberance" that conjures up fictitious wealth out of thin air; and they end with a financial crisis, followed by recession, mounting losses and rising unemployment – a befitting punishment for those who believed they could trick Milton Friedman into giving them a free lunch.

This "mismatch thesis" – the notion of a reality distorted by finance – is broadly accepted. In 2009, *The Economist* of London accused its readers of confusing "financial assets with real ones", singling out their confusion as the root cause of the brewing crisis (Figure 1). Real assets, or wealth, the magazine explained, consist of "goods and products we wish to consume" or of "things that give us the ability to produce more of what we want to consume". Financial assets, by contrast, are not wealth; they are simply "claims on real wealth". To confuse the inflation of the latter for the expansion of the former is the surest recipe for disaster.

[1] This paper is an edited transcript of a March 2015 presentation by Jonathan Nitzan at UQAM, organized by AESE UQAM (Association des Étudiants en Sciences Économiques, http://bnarchives.yorku.ca/436/). An earlier and somewhat different version of this article was published in 2009 by *Dollars & Sense* (Contours of Crisis II: Fiction and Reality, April 28, http://bnarchives.yorku.ca/258/). Shimshon Bichler teaches political economy at colleges and universities in Israel. Jonathan Nitzan teaches political economy at York University in Canada. All of their publications are available for free on *The Bichler & Nitzan Archives* (http://bnarchives.net). Work on this paper was partly supported by the SSHRC.

**Figure 1:** The classical dichotomy: real and financial

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**Buttonwood**

## The nature of wealth

Oct 8th 2009
From The Economist print edition

**The world confused financial assets with real ones**

Illustration by S. Kambayashi


AT THE heart of the current crisis is a fundamental confusion about the nature of wealth. Think about it from the perspective of a Martian. Were an extraterrestrial to be shown a room full of gold ingots, a stack of twenty-dollar bills or a row of numbers on a computer screen, he might be puzzled as to their function. Our reverence for these objects might seem as bizarre to him as the behaviour of the male bowerbird (which decorates its nest with shiny objects to attract a mate) seems to us.

Wealth consists of the goods and products we wish to consume or of things (factories, machinery, an educated workforce) that give us the ability to produce more such goods and services. Financial assets arise from the desire to postpone consumption so that money can be saved, either for precautionary reasons or to invest so that more goods and services can be consumed in the future.

Looked at in that way, financial assets are not "wealth" but a claim on real wealth. If those claims multiply or rise in price, that does not mean aggregate wealth has increased. If a pizza is cut into eight instead of four slices, there is no more food to eat. If everyone sitting at the table is given shares in the pizza and the share price rises from $1 to $2, the meal will still be no bigger.

The division between real wealth and financial claims on real wealth is a fundamental premise of political economy. This premise is accepted not only by liberal theorists, analysts and policymakers, but also by Marxists of various persuasions. And as we shall show below, it is a premise built on very shaky foundations.[2]

When liberals and Marxists say that there is a mismatch between financial and real capital, they are essentially making, explicitly or implicitly, three related claims: (1) that these are indeed *separate* entities; (2) that these entities *should* correspond to each other; and (3) that, in the actual world, they often do *not*.

In what follows, we explain why these claims don't hold water. To put it bluntly, neither liberals nor Marxists know how to compare real and financial capital, and the main reason is simple: they don't know how to determine the magnitude of real capital to start with. The common, makeshift solution is to estimate this magnitude indirectly, by using the money price of capital goods – yet this doesn't solve the problem either, since capital goods can have many prices and there is no way of knowing which of them, if any, is the "true" one. Last but not least, even if we turn a blind eye and allow for these logical impossibilities and empirical travesties to stand, the result is still highly embarrassing. As it turns out, financial accumulation not only deviates from and distorts real accumulation (or so we are told), it also follows an *opposite* trajectory. For more than two centuries, economists left and right have argued that capitalists – and therefore capitalism – thrive on "real investment" and the growth of "real capital". But as we shall see, in reality, the best time for capitalists is when their "real accumulation" tanks! . . .

[2] Not all political economists see themselves as either liberal or Marxist, but even the nonaligned tend to accept the fundamental division between real capital and financial assets.

## 2. The duality of real and nominal

The basic dualities of subject and object, idea and thing, *nomos* and *physis* have preoccupied philosophers since antiquity. They have also provided an ideal leverage for organized religions and other dogmas specializing in salvation from alienation. And more recently, they have come to form the basic foundation of modern economics.

Following the "classical dichotomy" proposed by the British philosopher David Hume, economists divide their economy into two parallel worlds: real and nominal. The more important of the two realms, by far, is the real economy. This is the domain of scarcity, the arena where demand and supply allocate limited resources among unlimited wants. It is where production and consumption take place, where sweat and tears are shed and desires fulfilled, where factors of production mix with technology, where capitalists invest for profit and workers labour for wages. It is where conflict meets cooperation, the anonymous forces of the market engage the visible hand of power, exploitation takes place and actual capital accumulates. It is the *raison d'être of social reproduction*, the locus of action, the means and end of economics. In short, it is the *real* thing.

The nominal economy merely reflects this reality. Unlike the real economy, with its productive efforts, tangible goods and useful services, the nominal sphere is entirely symbolic. Its various entities – fiat money and money prices, credit and debt, equities and securities – are all denominated in dollars and cents (or any other currency units). They are counted partly in minted coins and printed notes, but mostly in electronic bits and bytes. This is a parallel universe, a world of mirrors and echoes, a bare *image* of the real thing.

This real-nominal duality cuts through the whole of economics, including capital. For economists, capital comes in two varieties: real capital (wealth) and financial capital (capitalization). Real capital is made of "capital goods". It comprises means of production, including plant and equipment, infrastructure, work in progress and, according to many, knowledge. Financial capital, or capitalization, represents a symbolic claim on this real capital. Its quantity measures the present value of the earnings that the underlying capital goods are expected to yield.

Both Marxists and neoclassicists accept the real/nominal bifurcation of the economy. They also accept that there are two types of capital – real and financial. And they also believe (in the Marxist case) and concede (in the neoclassical case) that, usually, there is a mismatch between them. The main difference between the two schools is the *direction* of the mismatch: Marxists begin with a mismatch that they argue must turn into a match, whereas neoclassicists begin with a match that, they reluctantly admit, often disintegrates into a mismatch. So let's examine this difference a bit more closely, beginning with the Marxist view.[3]

### *2.1 The Marxist View*

Marx wrote in the middle of the nineteenth century, roughly half a century before others started to theorize capitalization in earnest and a full century before it became the central

[3] A subtle distinction: most Marxists accept the real/nominal duality and the difference between real and financial (or fictitious) capital. But only classical Marxists anchor their acceptance in Marx's labour theory of value. Neo-Marxists tend to eschew value theory altogether – and, in doing so, eliminate the theoretical basis on which their notions of real and financial capital might otherwise stand.

ritual of modern capitalism. Yet he was prescient enough to understand the importance of this process and tried to sort out what it meant for his labour theory of value.

He started by stipulating two types of capital: actual and fictitious. Of these two, the key was actual capital – means of production and work in progress counted in labour time. This was "real" capital. Fictitious capital – or capitalization – was the magnitude of expected future income discounted to its present value. This later capital, counted in dollars and cents, was deemed fictitious for three basic reasons: (1) often there is no "principal" to call on (as in the case of government debt, where the creditor owns not actual capital, but merely a claim on government revenues); (2) capitalization is based on changing income expectations that may or may not materialize; and (3) even if the expected income is given, its capitalized value varies with the discount rate.

The existence of two types of capital created a dilemma for Marx. Theoretically, actual and fictitious capital are totally different creatures with totally different magnitudes. But the capitalist reality is denominated in prices, which means that, in practice, real and fictitious capital are deeply intertwined. This latter fusion, says Marx, leads to massive distortions, particularly during a boom, often to the point of making the entire process of accumulation "unintelligible":

> All connection with the actual process of self expansion of capital is thus lost to the last vestige, and the conception of capital as something which expands itself automatically is thereby strengthened. . . . The accumulation of the wealth of this class [the large moneyed capitalists] may proceed in a direction very different from actual accumulation. . . . Moreover, everything appears turned upside down here, since no real prices and their real basis appear in this paper world, but only bullion, metal coin, notes, bills of exchange, securities. Particularly in the centers, in which the whole money business of the country is crowded together, like London, this reversion becomes apparent; *the entire process becomes unintelligible*. (Marx, Karl. 1894. *Capital. A Critique of Political Economy. Vol. 3: The Process of Capitalist Production as a Whole*. Edited by Friedrich Engels. New York: International Publishers, pp. 549, 561, 576, emphasis added)

Marx's followers solved this problem by assuming that, over the long run, the labour theory of value prevails (with prices proportionate to labour values) and therefore that, at some point, there must be a "financial" crisis to bring the price of fictitious capital back in line with the labour values of real capital:

> In order for the price system to work, financial forces should cause fictitious capitals to move in directions that parallel changes in reproduction values. . . . By losing any relationship to the underlying system of values, strains eventually build up in the sphere of production until a crisis is required to bring the system back into a balance, whereby prices reflect the real cost of production. The fiction of fictitious value cannot be maintained indefinitely. At some unknown time in the future, prices will have to return to a rough conformity with values. . . . (Perelman, Michael. 1990. The Phenomenology of Constant Capital and Fictitious Capital. *Review of Radical Political Economics*, Vol. 22, Nos. 2-3, p. 83),

### *2.2 Fisher's House of Mirrors*

On the neoclassical side, the duality of real and financial capital was articulated a century ago by the American economist Irving Fisher. This was the beginning of a process that contemporary commentators refer to as financialization, and whose logical structure Fisher was one of the first theorists to systematize. Table 1 and the quote below it outline his framework:

**Table 1:** Fisher's House of Mirrors

| | PRESENT CAPITAL | | FUTURE INCOME |
|---|---|---|---|
| QUANTITIES (REAL) | *capital wealth* | ❶ → | *income services* |
| | | | ↓ ❷ |
| VALUES (FINANCIAL) | *capital value* | ← ❸ | *income value* |

> The statement that "capital produces income" is true only in the physical sense; it is not true in the value sense. That is to say, *capital-value does not produce income-value.* On the contrary, income-value produces capital-value. . . . [W]hen capital and income are measured in *value,* their causal connection is the reverse of that which holds true when they are measured in *quantity.* The orchard produces the apples; but the value of the apples produces the value of the orchard. . . . We see, then, that present capital-*wealth* produces future income-*services,* but future income-*value* produces present capital-*value*. (Irving Fisher, *The Rate of Interest*, 1907, NY: The Macmillan Company, pp. 13-14, original emphases)

In this quote, Fisher draws three basic links: (1) the stock of capital goods, which economists consider as wealth, generates future income services; (2) future income services generate corresponding future income values; and (3) future income values, capitalized in the here and now, give capital its financial value.

And so the ancient alienation of the thing from its idea is hereby resolved. The real capital on the asset side of the balance sheet is made equal to the financial capital on the liabilities side. The machines, structures, inventories and knowledge, taken as an aggregate magnitude, are equivalent to the sum total of the corporation's equity and debt obligations. The nominal mirrors the real. The *nomos* and *physis* are finally made one and the same.

Now, admittedly, this is merely the ideal state, the ultimate equilibrium a free, rational economy is bound to achieve. Sadly, though – and as neoclassicists are at great pain to admit – we are not there yet. In practice, the here-and-now economy is constantly upset by shocks, imperfections and distortions that, regrettably, cause finance to deviate from its proper, real value and equilibrium to remain a distant goal.

### 3. The quantity of wealth

To sum up, then, Marxists and neoclassicists approach the real/nominal duality from opposite directions. In the Marxist case, the duality starts as a mismatch that is eventually forced into a match, whereas in the neoclassical case it begins as a match and gets distorted into a mismatch.

However, in both cases – and this is the key point – the benchmark is *real* or *actual capital*. This is the yardstick, the underlying quantity that finance supposedly matches or mismatches. At some point, be it at the beginning or the end of the process, the capitalized value of finance must equal the quantity of wealth over which it constitutes a claim. In other words, the entire exercise is built upon the *material quantity* of capital goods. The only problem is that nobody knows what this quantity is or how to measure it.

#### *3.1 Utils and SNALT*

During the 1960s, there was a very important controversy in economics, pitting heterodox professors from Cambridge University in England against some of their orthodox counterparts at MIT in Cambridge, Massachusetts. The U.K. economists claimed that orthodox economics was built on a basic fallacy: it treated capital as having a definite quantity while, in fact, such a quantity cannot be shown to exist. Capital, they demonstrated, can rarely if ever be measured in its own "natural" material units. And their U.S. counterparts eventually agreed. Reluctantly, they conceded that real capital was merely a "parable". Like the ever elusive God, you can speak about it, but, generally, you cannot quantify it.

This Cambridge Controversy, as it later came to be known, has since been buried and forgotten. The textbooks don't mention it, most professors haven't heard about it and certainly don't teach it, and the unexposed students remain blissfully ignorant of it.[4] The reason for the hush-hush is not hard to understand: to accept that real capital has no definite quantity is to terminate modern economics as we know it. In order to avoid this fate, the dismal scientists have taken the anti-scientific route of keeping their skeletons in the closet. They have ignored their own conclusions, gradually erased the very debate from their curricula and syllabi and fortified the walls surrounding their academic religion to ward off the infidels.

But the problem remains, and, given its devastating consequences, it is worth considering, if only briefly. The basic reason that real capital cannot be measured is aggregation. Considered as a productive economic entity, capital consists of qualitatively different objects: tractors are different from trucks, ships are different from airplanes and automobile factories are different from oil rigs. This heterogeneity explains why the heterodox Cambridge economists claimed that capital has no "natural unit": there is no simply way to compare and add up its components, and that inability makes it difficult to decide "how big" or "how small" it is.[5]

The common solution in such cases is reduction – i.e., going one step lower to devise a fundamental quantity common to all entities in question. Perhaps the first to employ this method was the Greek philosopher Thales, when he claimed that everything in the world was

[4] In his UQAM presentation of this paper, Nitzan asked the audience how many had heard of the Cambridge Controversy. Out of about 50 people, consisting mostly of economics students, only one raised his hand. He had heard about it in a sociology class.
[5] Apparently unbeknown to the Cambridge controversialists, this argument was articulated already at the turn of twentieth century by the American political economist Thorstein Veblen.

made of water. The same principle is used by physicists when they argue that every quantity in the universe can be expressed in terms of mass, distance, time, electrical charge or heat (so velocity = distance ÷ time; acceleration = rate of change of velocity; force = mass × acceleration, etc.).

Economists mimic this reductionism with their own fundamental quantities. For the neoclassicists, this quantity is the "util", a measure denoting the hedonic pleasure generated by commodities.[6] Like any other commodity, every capital good has its own util-generating capacity, and if we add the individual util-generating capacities of different capital goods we get their aggregate measure as real capital. For instance, if one Toyota factory can produce 1 million utils and a BP oil rig can produce 2 million utils, their combined real capital is 3 million utils.

Classical Marxists do the very same thing with labour time. Every commodity, they say, can be measured by the socially necessary abstract labour time (SNALT) it takes to produce; and by adding up these times, we can calculate the aggregate real quantity of the capital in question. If a Toyota factory takes 100 million socially necessary abstract labour hours to produce and a BP oil rig takes 200 million hours, their total quantity is 300 million hours.

So far so good – but then here there arises a small but nasty problem: unlike the physicists, economists have never managed to *actually measure* their fundamental quantities. As far as we know, no liberal has ever observed a util, and no Marxist has ever identified a unit of SNALT. As they stand, these so-called "real quantities" are, in fact, entirely fictitious.

But the economists haven't given up. Instead of measuring utils and SNALT directly, they go in reverse. God is revealed to us through his miracles, and the same, argue the economists, holds true for the fundamental quantities of economics: they reveal themselves to us through their prices. For a neoclassicist, a 1:2 price ratio between a Toyota factory and a BP oil rig means that the first entity has half the util quantity of the second, while for a classical Marxist this same price ratio is evidence that the SNALT quantity of the first entity is half that of the second.

This reverse solution is the bread and butter of all practical economics. It is a common procedure that all economists use and few, if any, question, let alone critique. It is employed by everyone, from official statisticians and government economists to Wall Street analysts and corporate strategists. And as our reader might by now suspect, it doesn't work – at least not in the way it is supposed to.

### *3.2 Equilibrating the capital stock*

To see why the reserve solution doesn't work, consider Table 2 and Figure 2, which present the same information – first numerically and then graphically. The table and figure pertain to a hypothetical company, *Energy User-Producer Inc.*, which owns two assets – automobile factories that use energy and oil rigs that produce it. To make the example simple, we assume that there is only one type of automobile factory and that all oil rigs are identical. In

[6] Hard-core neoclassicists might object to this description, saying that utils are unique to the individual and therefore impossible to add across individuals to start with. However, since following this objection to the letter would make comparison and aggregation – and therefore practical economics – impossible, most neoclassical economists tend to ignore it. To bypass their own liberal-individualistic logic, they assume that all individuals are the same, that they are therefore perfectly comparable, and that their utilities can be aggregated after all. . . .

order to know "how much" capital of each type there is, all we need to do is count. Table 2 shows the number of each of these "real assets": Column 1 shows the number of automobile factories as they change over time, and Column 2 shows the corresponding number of oil rigs. These same numbers are shown by the two series at the bottom of Figure 2. The next two columns in the table – 3 and 4 – display, for each year, the unit price of each type of asset, counted in millions of dollars.

Now, since automobile factories and oil rigs are different entities, they cannot be added in their own "natural" units. And since we don't know their util or SNALT contents, we cannot add those numbers either. But we can follow the economic recipe of "revealed preferences" to backpedal from prices to utils or SNALT.

Consider the neoclassical inversion.[7] In order to tease utils out of prices, all we need to do is identify a year of perfectly competitive equilibrium (PCE). So for argument's sake, assume that this year happened to be 1970. This is a convenient assumption to make, because, in PCE, buyers and sellers are said to exchange commodities at prices proportionate to their util-denominated (marginal) preferences.[8] In our case here, the shaded/bold numbers in Table 2 show that, in 1970, an automobile factory cost $200 million and an oil rig cost $100 million (both hypothetical numbers). And since these are assumed to be PCE prices, their ratio presumably reveals that the util-generating capacity of an auto factory is twice that of an oil rig.

Now remember that in order to keep things simple, we also assumed that all automobile factories and oil rigs are the same, and that they remain unchanged over time. This assumption, together with our knowledge that 1970 was a year of PCE, allows us to easily calculate the overall quantity of capital owned by *Energy User-Producer*. All we need to do for every year is, first, multiply the number of automobile factories by 200 and the number of oil rigs by 100, and then sum up the two products. This calculation would then give us the util-generating capacity of the company, year in, year out, as shown in Column 5.

There is a nasty catch here, though.

Note that our calculations are premised on the assumption that PCE occurred in 1970 – but what if this assumption is wrong? What if PCE occurred not in 1970, but in 1974, when the price of oil was three times higher and inflation was running amok?

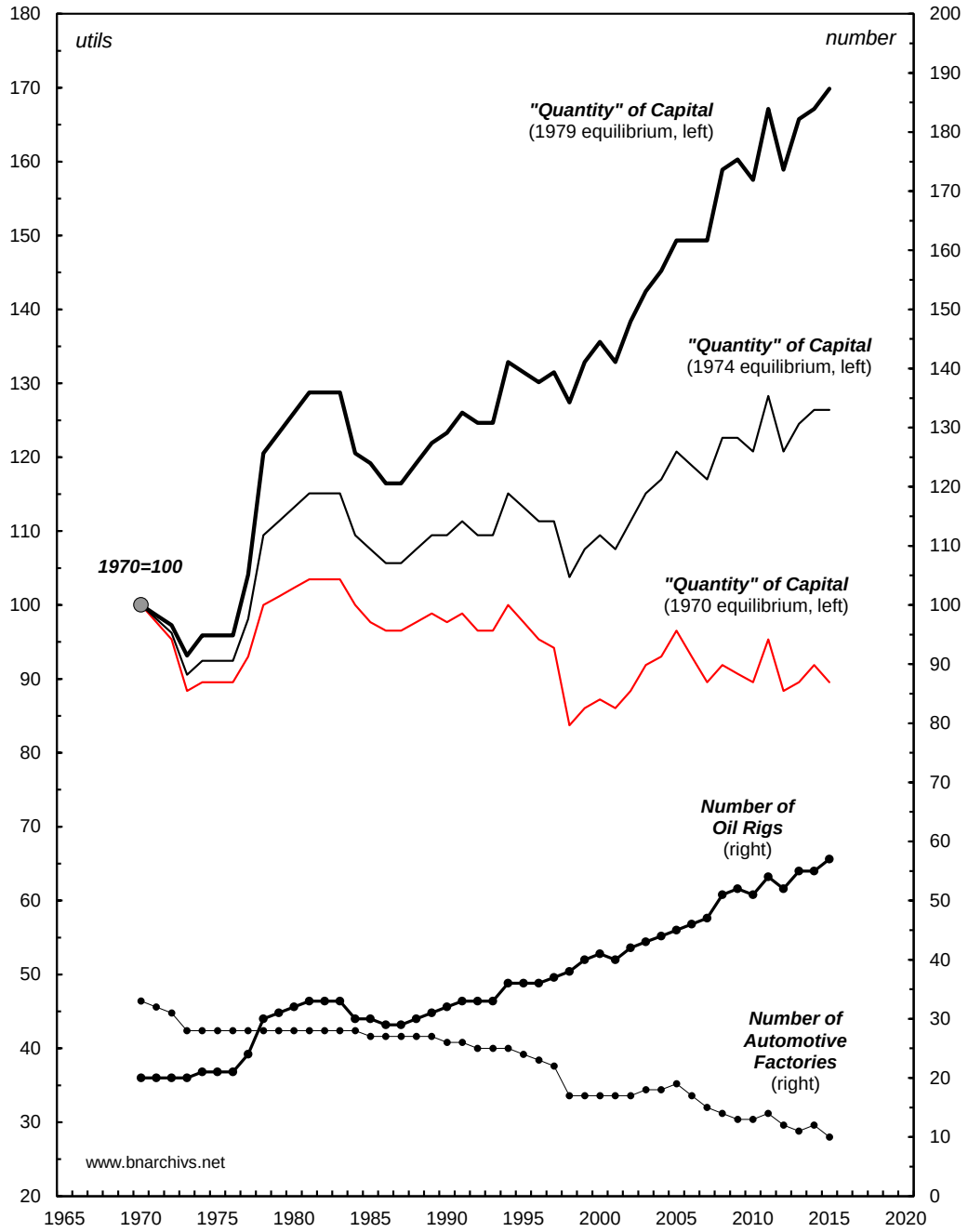
[7] The Marxist inversion would be the same, only that, instead of utils, it would generate SNALT.
[8] Neoclassical economists insist on distinguishing between average and marginal utility. But since utils are forever invisible, and given that, in the interest of aggregation, neoclassical individuals are reduced to identical drones with homothetic preferences anyhow, this distinction need not distract us.

**Table 2:** The Many "Quantities" of *Energy User-Producer Inc.*

| | Number | | Price ($ million) | | "Quantity" of Capital (utils) by year of equilibrium | | | Normalized "Quantity" of Capital (utils) by year of equilibrium | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | (1) Auto Factories | (2) Oil Rigs | (3) Auto Factories | (4) Oil Rigs | (5) Eq. in 1970 | (6) Eq. in 1974 | (7) Eq. in 1979 | (8) Eq. in 1970 | (9) Eq. in 1974 | (10) Eq. in 1979 |
| 1970 | 33 | 20 | **200** | **100** | 8,600 | 15,900 | 29,200 | **100.0** | **100.0** | **100.0** |
| 1971 | 32 | 20 | 220 | 120 | 8,400 | 15,600 | 28,800 | 97.7 | 98.1 | 98.6 |
| 1972 | 31 | 20 | 218 | 220 | 8,200 | 15,300 | 28,400 | 95.3 | 96.2 | 97.3 |
| 1973 | 28 | 20 | 270 | 280 | 7,600 | 14,400 | 27,200 | 88.4 | 90.6 | 93.2 |
| 1974 | 28 | 21 | **300** | **300** | 7,700 | 14,700 | 28,000 | 89.5 | 92.5 | 95.9 |
| 1975 | 28 | 21 | 345 | 400 | 7,700 | 14,700 | 28,000 | 89.5 | 92.5 | 95.9 |
| 1976 | 28 | 21 | 350 | 450 | 7,700 | 14,700 | 28,000 | 89.5 | 92.5 | 95.9 |
| 1977 | 28 | 24 | 410 | 600 | 8,000 | 15,600 | 30,400 | 93.0 | 98.1 | 104.1 |
| 1978 | 28 | 30 | 390 | 700 | 8,600 | 17,400 | 35,200 | 100.0 | 109.4 | 120.5 |
| 1979 | 28 | 31 | **400** | **800** | 8,700 | 17,700 | 36,000 | 101.2 | 111.3 | 123.3 |
| 1980 | 28 | 32 | 415 | 810 | 8,800 | 18,000 | 36,800 | 102.3 | 113.2 | 126.0 |
| 1981 | 28 | 33 | 432 | 820 | 8,900 | 18,300 | 37,600 | 103.5 | 115.1 | 128.8 |
| 1982 | 28 | 33 | 445 | 850 | 8,900 | 18,300 | 37,600 | 103.5 | 115.1 | 128.8 |
| 1983 | 28 | 33 | 450 | 900 | 8,900 | 18,300 | 37,600 | 103.5 | 115.1 | 128.8 |
| 1984 | 28 | 30 | 432 | 850 | 8,600 | 17,400 | 35,200 | 100.0 | 109.4 | 120.5 |
| 1985 | 27 | 30 | 450 | 870 | 8,400 | 17,100 | 34,800 | 97.7 | 107.5 | 119.2 |
| 1986 | 27 | 29 | 460 | 800 | 8,300 | 16,800 | 34,000 | 96.5 | 105.7 | 116.4 |
| 1987 | 27 | 29 | 473 | 790 | 8,300 | 16,800 | 34,000 | 96.5 | 105.7 | 116.4 |
| 1988 | 27 | 30 | 470 | 690 | 8,400 | 17,100 | 34,800 | 97.7 | 107.5 | 119.2 |
| 1989 | 27 | 31 | 460 | 650 | 8,500 | 17,400 | 35,600 | 98.8 | 109.4 | 121.9 |
| 1990 | 26 | 32 | 500 | 680 | 8,400 | 17,400 | 36,000 | 97.7 | 109.4 | 123.3 |
| 1991 | 26 | 33 | 502 | 700 | 8,500 | 17,700 | 36,800 | 98.8 | 111.3 | 126.0 |
| 1992 | 25 | 33 | 510 | 720 | 8,300 | 17,400 | 36,400 | 96.5 | 109.4 | 124.7 |
| 1993 | 25 | 33 | 500 | 705 | 8,300 | 17,400 | 36,400 | 96.5 | 109.4 | 124.7 |
| 1994 | 25 | 36 | 480 | 730 | 8,600 | 18,300 | 38,800 | 100.0 | 115.1 | 132.9 |
| 1995 | 24 | 36 | 511 | 780 | 8,400 | 18,000 | 38,400 | 97.7 | 113.2 | 131.5 |
| 1996 | 23 | 36 | 520 | 785 | 8,200 | 17,700 | 38,000 | 95.3 | 111.3 | 130.1 |
| 1997 | 22 | 37 | 510 | 800 | 8,100 | 17,700 | 38,400 | 94.2 | 111.3 | 131.5 |
| 1998 | 17 | 38 | 530 | 750 | 7,200 | 16,500 | 37,200 | 83.7 | 103.8 | 127.4 |
| 1999 | 17 | 40 | 535 | 760 | 7,400 | 17,100 | 38,800 | 86.0 | 107.5 | 132.9 |
| 2000 | 17 | 41 | 540 | 755 | 7,500 | 17,400 | 39,600 | 87.2 | 109.4 | 135.6 |
| 2001 | 17 | 40 | 560 | 730 | 7,400 | 17,100 | 38,800 | 86.0 | 107.5 | 132.9 |
| 2002 | 17 | 42 | 550 | 780 | 7,600 | 17,700 | 40,400 | 88.4 | 111.3 | 138.4 |
| 2003 | 18 | 43 | 530 | 800 | 7,900 | 18,300 | 41,600 | 91.9 | 115.1 | 142.5 |
| 2004 | 18 | 44 | 580 | 850 | 8,000 | 18,600 | 42,400 | 93.0 | 117.0 | 145.2 |
| 2005 | 19 | 45 | 550 | 900 | 8,300 | 19,200 | 43,600 | 96.5 | 120.8 | 149.3 |
| 2006 | 17 | 46 | 590 | 950 | 8,000 | 18,900 | 43,600 | 93.0 | 118.9 | 149.3 |
| 2007 | 15 | 47 | 600 | 1000 | 7,700 | 18,600 | 43,600 | 89.5 | 117.0 | 149.3 |
| 2008 | 14 | 51 | 610 | 800 | 7,900 | 19,500 | 46,400 | 91.9 | 122.6 | 158.9 |
| 2009 | 13 | 52 | 590 | 700 | 7,800 | 19,500 | 46,800 | 90.7 | 122.6 | 160.3 |
| 2010 | 13 | 51 | 580 | 750 | 7,700 | 19,200 | 46,000 | 89.5 | 120.7 | 157.5 |
| 2011 | 14 | 54 | 530 | 700 | 8,200 | 20,400 | 48,800 | 95.3 | 128.3 | 167.1 |
| 2012 | 12 | 52 | 510 | 800 | 7,600 | 19,200 | 46,400 | 88.4 | 120.7 | 158.9 |
| 2013 | 11 | 55 | 520 | 820 | 7,700 | 19,800 | 48,400 | 89.5 | 124.5 | 165.7 |
| 2014 | 12 | 55 | 500 | 800 | 7,900 | 20,100 | 48,800 | 91.9 | 126.4 | 167.1 |
| 2015 | 10 | 57 | 515 | 700 | 7,700 | 20,100 | 49,600 | 89.5 | 126.4 | 169.9 |

NOTES TO TABLE 2:
The numbers of auto factories (Column 1) and oil rigs (Column 2) are hypothetical.
Column 5 = value of Column 3 in 1970 * Column 1 + value of Column 4 in 1970 * Column 2
Column 6 = value of Column 3 in 1974 * Column 1 + value of Column 4 in 1974 * Column 2
Column 7 = value of Column 3 in 1979 * Column 1 + value of Column 4 in 1979 * Column 2
Column 8 = Column 5 / value of Column 5 in 1970 * 100
Column 9 = Column 6 / value of Column 6 in 1970 * 100

Column 10 = Column 7 / value of Column 7 in 1970 * 100
**Figure 2**: The Many "Quantities" of *Energy User-Producer Inc.*




NOTE: The number of auto factories and oil rigs is hypothetical. The annual "quantity" of capital (in utils) is computed first by multiplying the number of auto factories and oil rigs by their respective equilibrium price; and second by adding the two products. The "quantity" of capital with a 1970 equilibrium assumes that the "util-generating capacities" of an auto factory and an oil rig have a ratio of 2:1 (based on respective prices of $200 mn and $100 mn); the "quantity" of capital with a 1974 equilibrium assumes that the ratio is 1:1 (based on respective prices of $300 mn and $300 mn); and the "quantity" of capital with a 1979 equilibrium assumes that the ratio is 1:2 (based on respective prices of $400 mn and $800 mn). For presentation purposes, all three quantity-of-capital series are normalized with the year 1970=100.

According to Table 2, in 1974 the price of automobile factories was $300 million apiece – 50 per cent higher than in 1970 – and the price of oil rigs was 200 per cent higher, at $300 million. Now, if we take these as our PCE prices and therefore as revealing the true util-generating capacity of the underlying assets, the quantity of capital would be very different than in the first scenario. Unlike before, the price ratio now is not 2:1, but 1:1, and that difference changes everything. The new results are shown in Column 6.

And the same question can be raised again: what if PCE occurred not in 1974, but in 1979, when inflation accelerated further and the price of oil rigs shot through the roof? According to Table 2, the price ratio now is 1:2, and that change, documented in Column 7, makes the quantities of capital different than in both previous scenarios.

In order to better compare the evolution of the capital stock under our three PCE settings, it is convenient to normalize Columns 5-7, as we do in Columns 8-10. For each of the Columns 5-7, we divide the quantity of capital by its value in 1970 and multiply the result by 100. This computation recalibrates the three series, bringing them all to a single common denominator, so that their respective values in 1970=100. Note that, because each observation in this transformation is divided and multiplied by the same numbers, the *relative* temporal changes of Columns 8-10 (although not the absolute numbers) are identical to those of Columns 5-7, respectively.

The top part of Figure 2 shows the three normalized quantities of capital (Columns 8-10), each corresponding to a different PCE year. And as you can see, the trajectories of the series differ markedly from each other: if PCE occurred in 1970, the quantity of capital is shown to have declined by about 10 per cent over the entire period; if PCE occurred in 1974, though, the quantity of capital is shown to have increased by over 20 per cent; and if PCE occurred in 1979, the quantity of capital is seen to have risen by nearly 90 per cent.

### *3.3 So what is there to mismatch*

Now, these are only three examples, and as our reader by now can imagine, we can give many others – in fact, as many as we wish – each based on a different PCE point and each yielding a different quantitative series. The crucial point here is that these different series all pertain to the *same* capital stock, so obviously only *one* of them, if any, can be "correct" – but which one is it?

Sadly, nobody knows.

As far as we can tell, nobody – not even top-of-the-line winners of the Nobel Memorial Prize in Economic Sciences – can identify PCE when they see it (assuming this is a meaningful social state to start with). And as long as PCE remains invisible, there is no way to decide which series, if any, shows the "true" magnitude of capital.

Similar problems haunt the Marxists. Given that SNALT is not directly observable, let alone measurable, Marxists, just like neoclassicists, are often forced to go in reverse. They deduce the labour-time magnitude of capital from the (PCE?) market prices of capital goods – or

worse still, simply use the neoclassical, util-based measures provided by the national accounts.[9]

And so we've come full circle. The mismatch thesis claims that the quantity of financial capital deviates from and distorts the quantity of real capital. But as it turns out, the quantity of real capital – the thing that finance supposedly mismatches and distorts in the first place – is in fact totally nominal. Moreover, since this nominal quantity can be anything and everything (depending on our arbitrary choice of PCE), the economists are left with no *unique* (money) measure of real capital, let alone one they can all agree on. Caught in Plato's cave, they try to glean reality from its reflection in their self-made mirror – only to discover that this mirror projects not one but an infinite number of images and that they have no idea how to choose between them. They end up with no real benchmark to match and therefore nothing to mismatch.

### *3.4 Flowing with the delusional crowd*

In every other science, this inability to measure the key category of the theory would be devastating (think of measuring Newton's gravitation without mass or distance). But not in the science of economics.[10]

Here, everything continues to flow smoothly. The national statistical services instruct their statisticians to come up with "real" numbers for the capital stock (as well as for every other economic entity). In order to comply, the statisticians have to identify instances of PCE; but since they too are clueless about the subject, they pretend. They designate an arbitrary year as their PCE, go through the hoops of Table 2, and churn out the required numbers. And although these official numbers are entirely fictitious, the economists, neoclassical as well as heterodox, don't seem to care. They use them, usually without a second thought, as if they were the real thing.

So let's not spoil the parade and, for the moment, continue to flow with the delusional crowd. For the sake of argument, let's assume, along with the average economist, that, at any point in time, the dollar value of capital goods – or wealth, as Irving Fisher called them – is proportionate to the their real quantity, and then use this (pseudo) real measure as our basic benchmark.

With this assumption, we can now run a pragmatic test: we can take the financial magnitude of any capital (market capitalization) and compare it to its (fabricated) "real" benchmark (the aggregate money price of the underlying capital goods). According to Fisher's neoclassical scriptures summarized in Table 1 – and assuming we are using the true PCE benchmark – the two quantities must equal. If they differ, reality must have been "distorted".

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[9] For more on the classical Marxist treatment of capital, see Chapters 6-8 in our book *Capital as Power: A Study of Order and Creorder* (Routledge, 2009, http://bnarchives.yorku.ca/259/). It is important to mention here that, in their empirical research, most Marxists have thrown in the methodological towel. Instead of relying on labour time and the dialectical method, they use "real" neoclassical data, liberal classifications and equilibrium-based econometrics. This wholesale surrender is akin to physicists reverting back to astrology and chemists back to alchemy. Moreover, most Marxists rarely acknowledge, let alone assess, the implications of this surrender – and the handful who do often end up defending it!

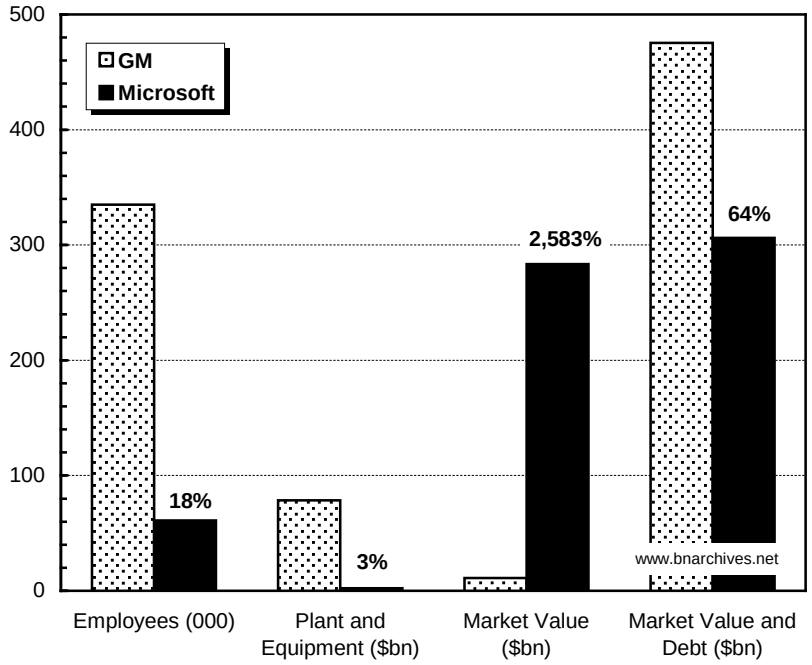
[10] A note to the uninitiated: the term "economics" was coined at the end of the nineteenth century by Alfred Marshall, who thought that "political economy" was insufficiently scientific, and that a suffix of "*ics*" would make it sound much more respectable, like mathemat*ics* and phys*ics*.

### 4. Microsoft versus General Motors

The remainder of the paper draws its empirical illustrations from the United States. This focus, dictated largely by data availability, is of course limiting. But given that the U.S. was the leading engine of capitalism throughout much of the twentieth century and remains pivotal to contemporary global accumulation, its experience can still tell us plenty.

Figure 3 illustrates a simple case of "reality distorted by finance". The chart, focusing on the year 2005, compares the so-called real and financial sides of two leading U.S. firms – Microsoft and General Motors. Seen from the real side, General Motors is a giant and Microsoft is a dwarf. In 2005, General Motors had 335,000 workers – 5.5 times more than Microsoft – and it had plant and equipment with a book value of 78 billion dollars – 33 times greater than Microsoft's.

**Figure 3:** General Motors *versus* Microsoft, 2005




NOTE: The per cent figures indicate, for any given measure, the size of Microsoft relative to GM.

SOURCE: Compustat through WRDS (series codes: data29 for employees; data8 for net plant and equipment; data24 for price; data54 for common shares outstanding; data 181 for total liabilities).

But when we examine the two companies through the financial lens of capitalization, the pecking order is reversed: Microsoft becomes the giant and General Motors the dwarf. In 2005, Microsoft had a market capitalization nearly 26 times that of General Motors. Indeed, even if we take the sum of debt and market value, General Motors is still only 55 per cent bigger than Microsoft – a far cry from its relatively huge workforce and massive "quantity" of plant and equipment.

So, obviously, there must be some "distortion" here – for otherwise, how could a dwarf be a giant and a giant a dwarf?

Most economists, though, would shrug off the question. The problem, they would say, is that the chart shows only part of the picture. It measures real capital by looking at plant and equipment and the number of employees – yet neither of these magnitudes captures the importance of "technology". This is a crucial omission, they would continue, for, as we all know, Microsoft is a high-tech company and therefore possesses much more technology than General Motors. And since technical knowhow affects market capitalization but rarely if ever gets counted as "plant and equipment" and has no bearing on the size of the companies' workforce, our comparison is inherently lopsided. It demonstrates not a distortion but a simple mismeasurement.

And perhaps there is a mismeasurement here – but then, how can we be sure? Note that economists know the "magnitude" of technology here not by observing it directly (which nobody really can), but only indirectly, through its reflection in the mirror: they deduce it as the residual between market capitalization and the dollar value of plant and equipment.

Most economists encounter the technological "residual" in their study of production functions. These functions are intended to explain the level of output by the level of productive inputs – and are notoriously bad at doing so. Usually, they leave out a large unexplained variation in output – the infamous "residual" – whose existence the economists customarily blame on their inability to quantify "knowledge" (calling it a "measure of our ignorance").

This inability has devastating consequences. To illustrate, consider two hypothetical production functions, with physical inputs augmented by technology: (1) $Q = 2N + 3L + 5K + T$ and (2) $Q = 4N + 2L + 10K + T$, where $Q$ denotes output, $N$ labour, $L$ land, $K$ capital, and $T$ technology. Now, suppose $Q$ is 100, $N$ is 10, $L$ is 5 and $K$ is 4. The implication is that $T$ must be 45 in function (1) and 10 in function (2). Yet, since technology cannot be measured, we can't know which production function is correct, so both – and, by extension, *any* technology-augmented function – can claim incontrovertible validity. But then, if production cannot be objectively described, what is left of the supply function, equilibrium and the entire edifice called economics?

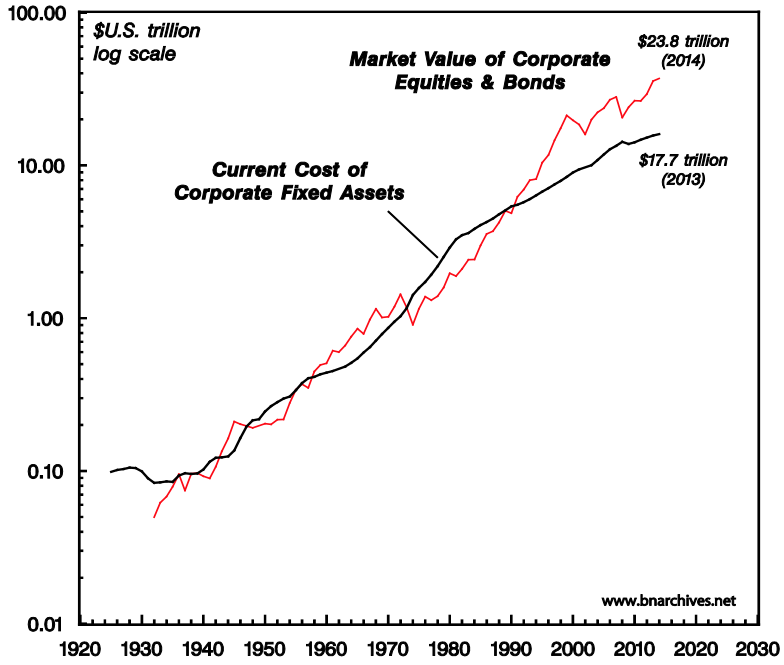
The production-function residual is related to but different from the residual between capitalization and the real capital stock: the former supposedly measures the *contribution* of technology to output, whereas the latter presumably quantifies the actual *magnitude* of technology. However, both residuals share the property of being conveniently invisible and therefore irrefutable.

Now, what if the mirror of capitalization lies and the "residual" gives us a false reading? For example, what if it were in fact General Motors that possessed the "bigger" technology and the asset market simply "mispriced" the two stocks to erroneously suggest the opposite? And then there is the possibility – which we have graciously assumed way, though only as a freebie – that 2005 was a *not* a year of PCE, and therefore that our (nominal) measures of the real capital stock of the two companies are in fact distorted to start with. How do we know that the know-all market didn't misprice these assets as well? And if there is no way of knowing, how can we say anything meaningful, let alone definitive, on the presumed "size" of technology?

**5. Tobin's Q: Adding Intangibles**

The same question, though on a much grander scale, arises from Figure 4. Whereas our comparison of Microsoft and General Motors is restricted to two firms at a point in time, in Figure 4 we look at all U.S. corporations from the 1930s to the present. The chart shows two series. The thick line is our (pseudo) real benchmark. It shows the current, or replacement, cost of corporate fixed assets (i.e., what they would cost to produce, every year, at prevailing rather than historical prices). The thin line is the corresponding magnitude of finance. It measures the total capitalization of corporate equities and bonds, an aggregate that constitutes a claim on and presumably mirrors the underlying sum total of real assets.

**Figure 4:** The "Quantity" of U.S. Capital



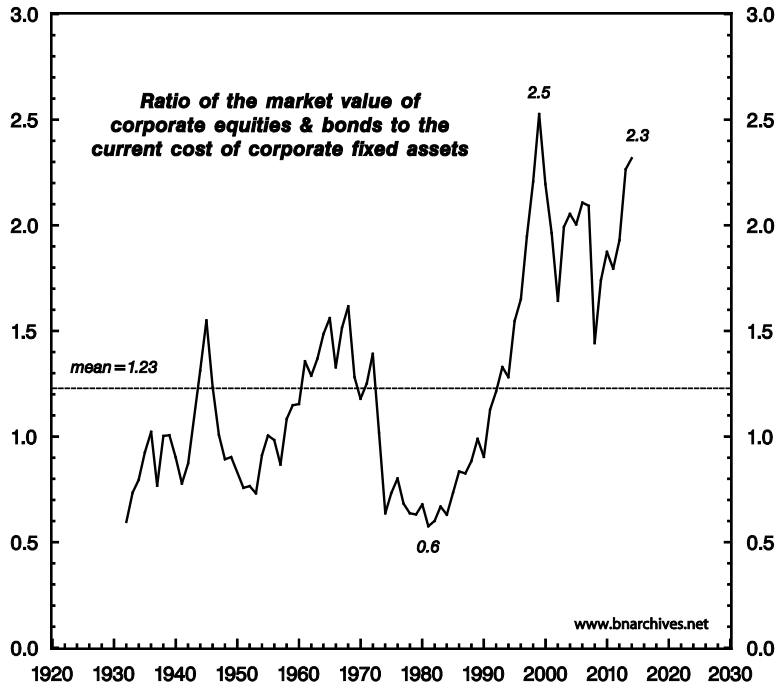

NOTE: The market value of equities and bonds is net of foreign holdings by U.S. residents.

SOURCE: U.S. Bureau of Economic Analysis through Global Insight (series codes: FAPNREZ for current cost of corporate fixed assets). The market value of corporate equities & bonds splices series from the following two sources. 1932-1951: Global Financial Data (market value of corporate stocks and market value of bonds on the NYSE). 1952-2014: Federal Reserve Board through Global Insight (series codes: FL893064105 for market value of corporate equities; FL263164103 for market value of foreign equities held by U.S. residents, including ADRs; FL893163005 for market value of corporate and foreign bonds; FL263063005 for market value of foreign bonds held by U.S. residents).

Note that we plot the two series against a log scale, so the discrepancies between them, although they look small on the graph, could be very large. These discrepancies are calibrated in Figure 5. The chart shows the *Tobin's Q* index, named after the late economist James Tobin. For our purpose here, *Tobin's Q* offers a sweeping measure of the financial-real mismatch. It computes, for every year, the ratio between the market value of corporations in the numerator and the replacement cost of their plant and equipment in the denominator. If finance matches reality, the two magnitudes are the same and *Tobin's Q* will equal 1. If there is a mismatch, *Tobin's Q* will exceed or fall short of 1.

Figure 5 has two notable features. First, it shows that the historical mean value of *Tobin's Q* isn't 1, but slightly above 1.2. Second, it demonstrates marked variations in *Q*, ranging from a low of 0.6 to a high of 2.5. These variations are not random, but rather cyclical and persistent. Let's examine these two features more closely.

**Figure 5:** *Tobin's Q* in the United States




NOTE: The market value of equities and bonds is net of foreign holdings by U.S. residents. The last data point is for 2014 (based on the measured value of corporate equities and bonds and the estimated current cost of corporate fixed assets).

SOURCE: See Figure 4.

First, why is the historical average of *Tobin's Q* greater than 1? The conventional answer, just like in the Microsoft-General Motors case, is mismeasurement. When physicists were unable to square their computations regarding the structure and expansion of the universe, they didn't rush to change their theory; instead, they solved the problem, at least provisionally, by hypothesizing the existence of invisible "dark" matter whose assumed mass, when added to the mass of observed matter, would make their calculations consistent. Economists do the very same thing with the real-financial mismatch. The reason that capitalization tends to be larger than "real capital", they say, is that fixed assets are only part of the picture. The other part is made of equally productive intangible assets. Unfortunately, most of these intangibles, like the physicists' dark matter, are invisible. And it is this invisibility that explains why finance often mismatches reality and why *Tobin's Q* averages more than 1.

Intangibles, many economists argue, have become more important since the 1980s' onset of the "information revolution" and "knowledge economy" – exactly when *Tobin's Q* started to soar. According to this view, corporations have accumulated more and more invisible assets in the form of improved technology, better organization, high-tech, synergy and other such knowledge-related blessings. These intangibles have in turn augmented the quantity of

capital, and have therefore led to larger capitalization. Accountants, though, remain conservative, so most intangibles don't get recorded as fixed assets on the balance sheet. And since the capitalized numerator of *Tobin's Q* takes account of these intangibles while the fixed-asset denominator usually does not, we end up with a growing mismatch. By the mid-2000s, some guestimates suggested that intangibles have come to account for 80 per cent of all corporate assets – up from less than 20 per cent 30 years earlier.

Although popular, these claims are highly dubious. Just like in the Microsoft-General Motors case, here, too, intangible capital is computed as a residual, deduced by subtracting from market capitalization the value of fixed assets. Now if we accept this method – as most economists do – we must also accept that intangible capital is a highly flexible creature, capable of expanding rapidly (as it did during the 1980s and 1990s, when *Tobin's Q* rose on a soaring market) as well as contracting rapidly (as it did during the major bear market of the 2000s, when *Tobin's Q* tanked). But does this flexibility make any sense?

Given that technical knowhow tends to change very gradually and rarely contracts, how could its "magnitude" jump several-fold in a short decade, only to drop precipitately in the next? And that's not all. To accept the residual method here is to concede that intangible capital can become *negative* – for otherwise, how could we account for *Tobin's Q* falling below 1?

**6. Boom and bust: irrationality**

So what do the economists do to bypass these implausibilities? They add irrationality. The textbooks portray economic agents as rational and markets as efficient – but when pressed to the wall, even the fundamentalists admit that reality is rarely that pristine. In practice, economic agents are plagued by emotions, often misinformed and occasionally delusional. Moreover, and regrettably, the "market", which the textbooks like to describe as perfect, is heavily contaminated and distorted by public officials and policymakers, oligopolies and insiders, labour unions and NGOs (and, more recently, also by a host of non-economic actors from religious sects to terrorist organizations). This toxic cocktail means that, unlike in theory, actual market outcomes can be irrational and occasionally unpredictable.

Irrational, unpredicted markets certainly have their downsides. They caused Isaac Newton to lose a fortune when the eighteenth-century South Sea Bubble burst and Irving Fisher to lose a much greater sum – $100 million in today's prices – when the U.S. stock market crashed in 1929. Humiliated, Newton observed that he could "calculate the movement of the stars, but not the madness of men". Fisher, by contrast, remained upbeat. Instead of throwing his hands up in despair, he went on to found the Cowles Commission, *Econometrica* and other such startups, all in the hope of putting the art of making money on a truly scientific footing.

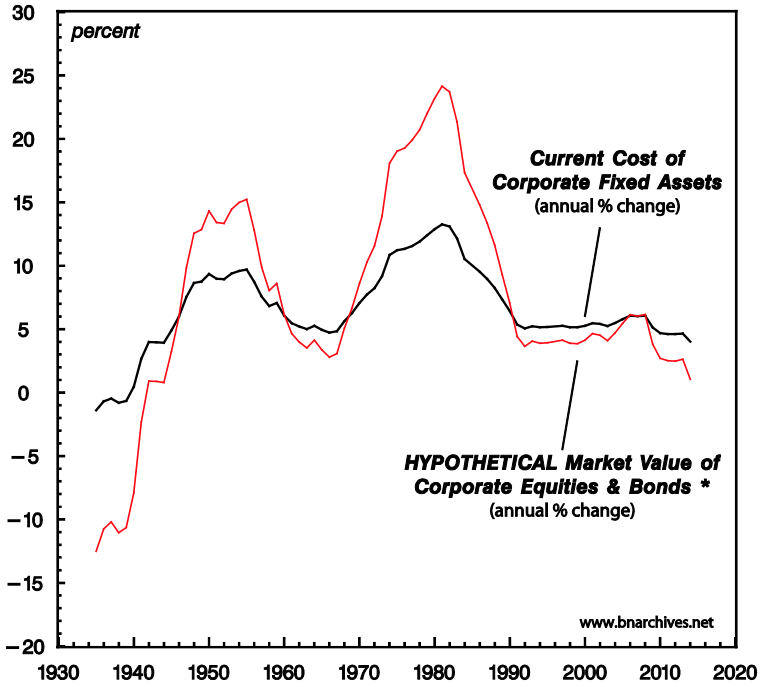
Whether or not these initiatives have facilitated moneymaking remains an open question, but they have certainly loosened the grip of strictly "rational" neoclassical economics over matters financial. Nowadays, market capitalization is said to consist not of two components, but three: tangible assets, intangible assets and the "irrational" optimism and pessimism of investors. And it is this last component, many now believe, that explains why *Tobin's Q* is so volatile.

How is this volatility manifested? A typical financial analyst might describe the process as follows. During good times – that is, when real accumulation is high and rising – investors get excessively optimistic. Their exuberance causes them to bid up the prices of financial assets

over and above the "true" value of the underlying real capital. Such overshooting can serve to explain, for example, the Asian boom of the mid-1990s, the high-tech boom of the late 1990s and the sub-prime boom of the mid-2000s. In this scenario, real capital soars, but financial capital, boosted by hyped optimism, soars even faster.

The same pattern, only in reverse, is said to unfold on the way down. Decelerating real accumulation causes investors to become excessively pessimistic, and that pessimism leads them to push down the value of financial assets faster than the decline of real accumulation. Instead of overshooting, we now have undershooting. And that undershooting, goes the argument, can explain why, during the Great Depression, when fixed assets contracted by only 20 per cent, the stock market fell by 70 per cent, and why, during the late 2000s, the stock market fell by over 50 per cent while the accumulation of fixed assets merely decelerated.

**Figure 6:** The World According to the Scriptures




* Computed annually by adding to the historical average of the growth rate of current corporate fixed assets 2.5 times the deviation of the annual growth rate from its historical average.
NOTE: Series are smoothed as 10-year trailing averages. The last data points are for 2013.
SOURCE: U.S. Bureau of Economic Analysis through Global Insight (series codes: FAPNREZ for current cost of corporate fixed assets).

This pattern of irrationality is illustrated in Figure 6. The thick line in the chart measures the actual rate of change of fixed assets priced at replacement cost and smoothed as a 10-year trailing average.[11] Unlike the thick line, the thin line is hypothetical. It simulates what the ups and downs of capitalization might look like if investors were excessively optimistic on the upswing and excessively pessimistic on the downswing (the exact computation of the series is explained in the footnotes to the chart).

[11] Note that this series excludes intangibles, but since we are displaying here not levels but rates of change, we can conveniently assume that the *sum* of tangible and intangible assets would follow a growth pattern similar to that of the tangible assets only.

Such simulations help market analysts tease order from the chaos. They show that investors' irrationality – however embarrassing, regrettable and inconvenient – is bounded and therefore manageable and predictable. The build-up of excessive investors' optimism during the boom is reversed during a bust, when these very investors become excessively pessimistic. The boom-driven euphoria that gives rise to a bubble of "fake wealth" and a soaring *Tobin's Q* is eventually replaced by fear, causing wealth to appear smaller than it really is and *Tobin's Q* to crash-land.

**7. A house of cards**

So now everything finally falls into place. (1) "Real capital" cannot be measured and probably doesn't have a unique quantity to begin with, but that's OK if we can pretend that its magnitude is proportionate to the current price of fixed assets. (2) *Tobin's Q* averages more than 1 – but that's OK too, since the larger value can be attributed to the existence of highly productive intangible assets that, unfortunately, nobody can really see. And (3) *Tobin's Q* fluctuates heavily – admittedly because the asset market is imperfect and humans are not always rational – but that, too, is fine, since the asset market's oscillations are safely bounded, pretty predicable and, most importantly, move broadly together with "real" accumulation.

Or do they?

Notice that the capitalization series in Figure 6 is entirely imaginary. As it stands, it reflects not the reality of the market, but the assumptions of the theory – and in particular, the assumption that the growth rate of capitalization amplifies *yet moves together* with that of real capital. But is this a correct assumption to make?

According to Figure 7, the answer is a resounding no.

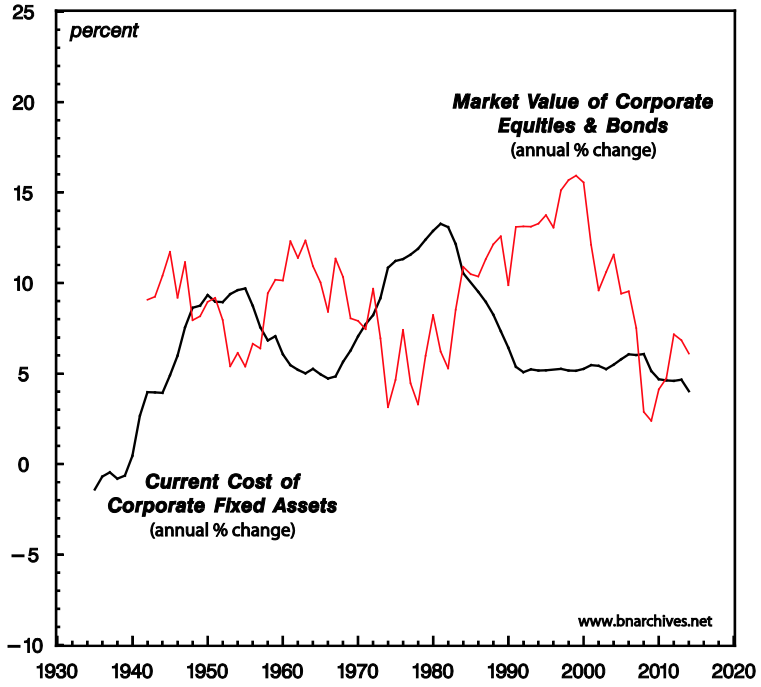
The thick line here is the same as in Figure 6. It measures the rate of change of the replacement cost of fixed assets. The thin line, though, is no longer hypothetical: it measures the *actual* rate of change of the value of corporate stocks and bonds. And it is here that the real/nominal duality and its associated mismatch thesis run into a brick wall. Unlike in Figure 6, where the ups and downs of the capitalization series *amplify* those of fixed assets, here they seem to move in exactly the *opposite* direction.

Note that these are not short-term fluctuations. The history of the process shows a very long-term wave pattern, with a cyclical peak-to-peak duration of 15-40 years. Furthermore the countercyclical movement of the two series seems highly systematic.

Now, unlike our previous findings in the paper, which we have agreed to overlook for argument's sake, the inverse pattern evident in Figure 7 is patently inconsistent with the fundamental duality of real and financial capital. We can perhaps concede that real capital does not have a material quantum, and then pretend that this quantum is proportionate to the market price of the underlying capital goods. We can perhaps accept that there are invisible assets that nobody can observe, yet believe that the know-all asset market can indirectly measure them for us, as a residual. And we can perhaps allow economic agents to be irrational, and then assume that their imperfect asset pricing is nonetheless bounded,

oscillating around the "true" price of real capital. But it taxes credulity to observe that the accumulation of real and financial assets move in *opposite* directions, yet maintain that *the latter movement derives from and reflects the former*.

**Figure 7:** U.S. Capital Accumulation: Fiction vs. Reality




NOTE: The market value of equities and bonds is net of foreign holdings by U.S. residents. Series are shown as 10-year trailing averages. The last data points are 2014 for the market value of corporate equities and bonds and 2013 for the current cost of corporate fixed assets.

SOURCE: See Figure 4.

Present-day capitalists – or investors, as they are now known – don't really care about "real capital". They are indifferent to means of production, labour and knowledge. They do not lose sleep over individual rationality and market efficiency. And they can live with both "free markets" and "government intervention". The only thing they do care about is their financial *capitalization*. This is their "Moses and the prophets". The rest is just means to an end.

The promise of classical political economy, and later of economics, was to explain and justify the rule of capital: to show how capitalists, while pursuing their own pecuniary interests, propel the rest of society forward. The accumulation of capital values, the economists explained, goes hand in hand with the amassment of "real" means of production, and therefore with the growth of production, employment, knowledge, rationality, efficiency and *laissez faire*. But, then, if the U.S. case is representative and the growth rates of capitalization and "real capital" move not together but inversely, the interests of the capitalist rulers are pitted against those of society. And if that is indeed the case, what's the use of economics?

**8. Endgame**

When capital first emerged in the European burgs of the late Middle Ages, it seemed like a highly promising startup: it counteracted the stagnation and violence of the *ancien régime* with the promise of dynamism, enlightenment and prosperity, and it replaced the theological sorcery of the church with an open, transparent and easy-to-understand logic. But once capital took over the commanding heights of society, this stark difference began to blur. The inner workings of capital became increasingly opaque: its ups and downs appeared difficult to decipher, its crises seemed mysterious, menacing and hard to manage, and its very nature and definition grew more slippery and harder to grasp.

Political economy – the first science of society – attempted to articulate the new order of capital. In this sense, it was the *science of capital*. The rule of capital emerged and consolidated together with modern science, and the methods of political economy developed hand in hand with those of physics, chemistry, mathematics and statistics. During the seventeenth century, the scientific revolution, along with the processes of urbanization, the shifting of production from agriculture to manufacturing and the development of new technologies, gave rise to a mechanical worldview, a novel secular cosmology whose intellectual architects promoted as the harbinger of freedom and progress. And it was this new mechanical cosmology – itself partly the outgrowth of capitalism – that political economists were trying to fit capital into.

Their attempts to marry the logic of accumulation with the mechanized laws of the cosmos are imprinted all over classical political economy and the social sciences it later gave birth to, and they are particularly evident in the various theories of capital. Quantitative reasoning and compact equations, Newtonian calculus and forces, the conservation of matter and energy, the imposition of probability and statistics on uncertainty – these and similar methods have all been incorporated, metaphorically or directly, into the study of capitalism and accumulation.

But as we have seen in this paper, over the past century the marriage has fallen apart. The modern disciplines of economics and finance overflow with highly complex models, complete with the most up-to-date statistical methods, computer software and loads of data – yet their ability to explain, let alone justify, the world of capital is now limited at best. Their basic categories are often logically unsound and empirically unworkable, and even after being massively patched up with ad hoc assumptions and circular inversions, they still manage to generate huge “residuals” and unobservable “measures of ignorance”.

In this sense, humanity today finds itself in a situation not unlike the one prevailing in sixteenth-century Europe, when feudalism was finally giving way to capitalism and the closed, geocentric world of the Church was just about to succumb to the secular, open-ended universe of science. The contemporary doctrine of capitalism, increasingly out of tune with reality, is now risking a fate similar to that of its feudal-Christian predecessor. Mounting global challenges – from overpopulation and environmental destruction, through climate change and peak energy, to the loss of autonomy and the risk of social disintegration – cannot be handled by a pseudo-science that cannot define its main categories and whose principal explanatory tool is “distortions”. You cannot build an entire social cosmology on the assumptions of individual rationality, equilibrium and perfect markets – and then blame the failures of this cosmology on *ir*rationality, *dis*equilibrium and *im*perfections. In science, these excuses and blame-shifting are tantamount to self-refutation.

What we need now are not better tools, more accurate modelling and improved data, but a different way of thinking altogether, a totally new cosmology for the post-capitalist age.

**Author contact:** nitzan@yorku.ca

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# Amartya Sen and the media

John Jeffrey Zink [Morningside College, USA]



**Abstract**
Amartya Sen has correctly sought to correct some shortcomings within neoclassical economic theory. Nonetheless, there still exists a tension in his work. His overall frame of analysis is still congruent with much of the neoclassical tradition. However, his critiques seem to imply that a sharp break with neoclassical theory is necessary. This conflict is examined in light of the connections between the press and the media, its impact on capabilities and functionings in Sen's framework, politics, and basic ideas about justice. Sen's individualist focus on capabilities and functionings seems to reflect the individualist orientation derived from neoclassical theory, but his use of other categories calls for a new kind of analysis that better examines the connections that enable people to shape and be shaped by their institutional environment.

**JEL codes** B3, B5, K00, L82

## Section I: Introduction

Almost everyone recognizes that the media plays a crucial role in real democracies. One must examine the media to understand its role in how democracies work, including how it both enhances and detracts from how well any democratic society works. Amartya Sen recognizes this basic truth in the realms of capabilities, functionings, economics, and freedom. However, there is a tension between this recognition and the fact that Sen does not deeply develop the structural and institutional aspects of the role of the media and of democratic society.

In many of his works, Amartya Sen has correctly pointed out the links that exist between many kinds of freedom. One of the most important is the connection between democratic participation, political freedom, and the structure of the media. This is important because Sen argues that direct or representative democracy prevents catastrophic famine. (Sen 1999, 2009) He has also forcefully argued that political participation is important in its own right.

In order to reap the full benefits of democracy, Sen has argued that it is crucial have a free press that allows for the free flow of ideas. The free press helps a society decide which policies to pursue, since these discussions lead to the direct consideration of the goals that society thinks are worthwhile. These discussions also shape a society, because they inform citizens how it might be best to pursue goals that are already settled on. On this point, I agree with Sen.

However, there is a problem. Authors like Robert McChesney have argued that the ownership structure of media companies limits debate over economic and political policy. In the U.S., the primary concern seems to be the potential for corporate censorship, while in other parts of the world the main problem appears to be government censorship.

For the U.S., the argument goes like this. Media companies such as Disney, Fox, and Turner have direct economic interests. Large media companies are large corporations, and they sell

advertising to other large corporations. Management of these large corporations has the responsibility to run the firms as profitably as they can. This is both a competitive requirement, and in some ways a legal one. One could argue that these firms have to please two masters, their shareholders and their audience. Management is often legally bound to serve shareholders first in case of a conflict between shareholder interests and other competing interests, such as those of employees or the audience. The corporate structure of these firms gives them an economic incentive to consider the financial consequences to the corporation of any particular story, regardless of its truth or potential social importance even if they maintain a strict separation between the news division and other divisions. Important aspects of any debate over social, political, and economic policy may be sidestepped because of corporate organization and the accompanying incentives. For example, Stromberg (2004) developed a model that describes the links between the mass media, political competition, and the resulting public policy. The emergence of the mass media "may introduce a bias in favor of groups that are valuable to advertisers, which might introduce a bias against the poor and the old." (Stromberg 2004, 281)

This may limit the range of acceptable discourse and debate in major media outlets. The internet could be a different story, but the evolving debate and actions of the government regarding 'net neutrality' is a debate about who controls this important information gateway, and how that control will be used. It would also be important to consider the worldwide aspects of this debate. While Sen has placed many of his arguments within the context of a national debate over some policy, many of today's media companies have a worldwide reach. Policies that affect a media outlet in one country often require the company to make adjustments in other areas, thus influencing a wide area of activity. Benjamin Compaine (1999) believed that the internet could broaden the discussion. In a way it has made a much more diverse views available to just about anyone, but the problem remains that it is very expensive to provide content. Easy duplication and dissemination of content has reinforced the market power of the big players. (Foster and McChesney 2011, Hindman 2009, McChesney 2001, 2004, McChesney and Nichols 2010) So while there are many more voices available, they continue to be drowned out by the large established players.

If policy makers uncritically accept constraints on which views are deemed acceptable, they could limit the discussion to alternatives that are pre-approved. This preapproval is implicit, and understood by all players in the game except for "fringe" elements. This needs only to become widely accepted in policy circles, not throughout the society. This has happened in the United States, and the result is a lack of information for people causing a poor political culture and a lack of civic engagement.

**Section II: Sen and Democracy**

Sen directly discusses the importance of democracy in such works as *Hunger and Public Action* (co-authored with Jean Drèze), *Development as Freedom,* and *Inequality Reexamined.* Sen's emphasis of personal differences in *Inequality Reexamined* points to the importance of democratic discussion. Democratic discussion is important *because* people differ in many ways. Thus, Sen writes "If every person were much the same as every other, a major cause of these disharmonies would disappear" (Sen 1992, 2). He points out that equality in one area does not automatically correspond to equality in another area. Differences in wealth can be associated with equal incomes. Equal incomes can be associated with unequal happiness, and equal opportunities can lead to unequal incomes (Sen 1992). Sen has forcefully argued

that there are direct causal links between different freedoms, such as between political participation and famine prevention (Sen 1983, 1999, Drèze and Sen 1989).

In order to address these differences, Sen argues that ". . . the intensity of economic needs adds to—rather than subtracts from—the urgency of political freedoms" (Sen 1999, 148). He feels that this is important for three reasons. Basic political and liberal rights are intrinsically important, because they enable people to lead more fulfilling lives. Sen believes that political and social participation are important parts of a truly fulfilling life. Second, these political rights and freedoms are instrumentally important, because they empower people to tell others about problems that need attention. Third, these freedoms play a constructive role in the discussion and formation of the ideas of "economic need" within a society. In other words, the fact that there is discussion influences or alters the conceptions of needs that arise within a particular society.

So far so good, but how does democracy actually work? Does it work well, poorly, or not at all, and why? Obviously, this is a question that would require a book length treatment, and probably more than one! To his credit, Sen is aware of this problem, so he supplements his discussion of the importance of political rights and democracy with the admission that the effectiveness of such political rights depends crucially on how they are used. He writes:

> "However, in presenting these arguments on the advantages if democracies, there is a danger of overselling their effectiveness. As was mentioned earlier, political freedoms and liberties are permissive advantages, and their effectiveness would depend on the how they are exercised" (Sen 1999, 154).

Sen steps directly into the discussion of how political rights are used and what influences the use of those rights.

This is a crucial point. Taking India as an example of a functioning democracy, Sen points out that democracy in India has been able to prevent catastrophic famine since independence in 1947. At the same time, it has been much less successful in eliminating chronic hunger, gender inequalities, or widespread and persistent illiteracy (Sen 1999). He also points out that there are similar failings in more well developed democracies, such as the Unites States. He cites the deprivation of African Americans in the United States in areas such as social environment, education, and health care. A symptom of this is the mortality rates for African Americans, which are much higher than the average for the rest of the population. He writes:

> "Democracy has to be seen as creating a set of opportunities and the use of these opportunities calls for an analysis of a different kind, dealing with the *practice* of democratic and political rights. In this respect, the low percentage of voting in American elections, especially by African Americans, and other signs of apathy and alienation, cannot be ignored. Democracy does not serve as an automatic remedy of ailments as quinine works to remedy malaria. The opportunity it opens up has to be positively grabbed in order to achieve the desired effects" (Sen 1999, 155 – emphasis in original).

Sen is aware of the difficulties that this involves, and the examples of hunger in India and mortality of African Americans are prime examples. But there are additional problems.
First there are problems recognizing patent injustices, aside from the obvious catastrophes such as famines and disease. Sen notes that:

> ". . .no matter how inescapable it may look in terms of foundational ethical arguments, the emergence of a shared recognition of that "injustice" may be dependent in practice on open discussion of issues and feasibilities. Extreme inequalities in matters of race, gender and class often survive on the implicit understanding . . . that there is no alternative" (Sen 1999, 287).

It will be difficult to remove discrimination against women and girls in societies that have a long history of sex discrimination against women and girls. Getting these societies to recognize that sexism is not inevitable will be a long struggle. People may not believe that non-sexist arrangements are possible, even when they believe that they are desirable.

This discussion is pitched at the national level. Aiming this discussion at the national level makes sense for several reasons. Many discussions of democracy have implied that the national government should be a democratic government. National governments have the most resources and are more able to prevent catastrophes such as famines. They are also the most influential when it comes to enacting policies that affect everyone, such as health care and education. State and local governments act within that context. They may not be allowed to have their own policies in some areas. They also will not have the resources to respond to some problems.

Even though it makes sense to have this discussion at the national level, there is an international dimension to consider. The practice of democracy in the United States has worldwide implications. For example, U.S. trade policy affects virtually every other nation and their citizens. From the point of view of democracy most writers consider it desirable for people to have a voice in those affairs that affect them most. If the policies of the United States affect the citizens of Gambia to a great degree, how are government, businesses, and other institutions in the U.S. supposed to take into account the views of Gambians? Gambians do not vote in U.S. elections. Democracy can work to unite a nation behind a set of policies that benefits its citizens at the expense of the citizens of another nation. Dissident citizens can try to make other people aware of this, with varying degrees of success. Often these implications are brought to light only after the fact.

Sen is also aware of the problems of the reach and effectiveness of public discussion. Open public discussion has played a key role in reducing fertility rates in some areas of the world, but a proper understanding of economic and other needs depends crucially heavily on public discussion and debate:

> "Public debates and discussions, permitted by political freedoms and civil rights can also play a major part in the formation of values. Indeed, even the identification of needs cannot but be influenced by the nature of public participation and dialogue" (Sen 1999, 158).

Public discussion helps society determine what a need is and what is not. The cultivation of this kind of public discussion helps democracy work well. According to Sen, a "more informed and less marginalized" public discussion of environmental issues would help both the planet and democratic practice.

Sen captures some of this international concern in a recent article on John Rawls. Rawls aimed his idea of the original position and the construction of a just society at the national

level. When Rawls first proposed the idea of the original position, the veil of ignorance was supposed to remove individual bias from the contractual exercise of setting up a just society. In the original position, people would not know what positions they would hold in the society they constructed. They would also be ignorant of the 'comprehensive doctrine' or 'ideology' they would hold in the society they constructed. Rawls defines a 'comprehensive doctrine' as a religious, moral, or philosophical outlook that generates a particular conception of the good, which is expressed by the people who believe in it. Rawls argues that the fact that one person occupies a certain social position is not a good reason for others to accept a conception of justice that favors those that occupy that position. If one person holds a particular comprehensive doctrine, this is not a good reason to propose a social structure that favors that doctrine, nor is it a good reason to get others to accept a social structure that favors that doctrine (Rawls 1993, 24). Rawls 'original position' is pitched at the national level, a 'closed society' having no relations with other societies (Rawls 1993, 12). Rawls justifies this on grounds that it enables us to examine important questions free from distracting details. Rawls says that a political conception of justice will need to address the just relations between the peoples of different societies. He terms this the "law of peoples" (Rawls 1993). However, he sticks to the national level in *Political Liberalism.*

Sen brings in the problem of international relations, or the relations between societies in his paper "Open and Closed Impartiality" which appeared in the *Journal of Philosophy* in 2002. Sen asks whether the impartial assessment of a state of affairs or a proposed state of affairs, is limited to a fixed group. Rawls clearly answers yes it is, and the fixed group is a group of national citizens. Rawls recognizes the importance of international relations but leaves it aside until problems at the national level can be worked out. Sen points out that limiting the group in this way is not always successful. Thus when the group is limited, this reflects closed impartiality. Sen shows that for closed impartiality, "the procedure of making impartial judgments invokes only the members of the focal group itself" (Sen 2002, 445). Rawls' original position is one example of closed impartiality. No outsider is involved in deliberations or construction of the just society. While Sen admits that this is useful for eliminating individual biases within the focal group, he points out:

> "But even under the veil of ignorance, a person does not know that she belongs to the focal group (and is not someone outside it), and there is no insistence at all that perspectives from outside the focal group be invoked. As a device of structured political analysis, the procedure is not geared to addressing the need to overcome group prejudices.
>
> In contrast, the case of *open impartiality,* the procedure for making impartial judgments can (and in some cases must) invoke judgments inter alia from outside the focal group" (Sen 2002, 445-446).

According to Sen, a new device is needed, and for this Sen turns to Adam Smith's "impartial spectator" who is not necessarily part of the focal group. Open impartiality requires that the views of others receive adequate consideration whether or not they are members of the focal group. The advantage of this is that it can take into account views that reveal group prejudice and bias (Sen 2002, 446).

Sen strengthens his case by arguing that there are three basic weaknesses of closed impartiality. These are *procedural parochialism, inclusionary incoherence,* and *exclusionary neglect*. Procedural parochialism is the idea that closed impartiality can eliminate individual

biases within the group itself, but does not address "the limitations of partiality toward the shared prejudices or biases of the group itself" (Sen 2002, 447). Inclusionary incoherence is the idea that decision by the focal group in the original position under closed impartiality can influence the size or composition of the group. Sen sees the choice of population policy in the original position as an example. Finally, there is also exclusionary neglect, where people whose lives are affected by the decisions of the focal group are not included in the focal group. Sen believes that this problem is not adequately addressed through multistage procedures such as Rawls' "law of peoples." In other words, this would not be a problem if the decision of the focal group affected only those within the focal group.

This discussion begs the question, "What does the group consist of?" If it consists only of individuals behind the veil of ignorance, and you take the methodological stance that the group consists only of the people or individuals within it, then by implication if you eliminate all individual bias behind the veil of ignorance, then you must also eliminate group bias behind the veil of ignorance. Put another way, can the group be prejudiced without prejudice on the part of each member? In other words, if the veil of ignorance prevents people from knowing anything about their personal characteristics and social and historical circumstances, presumably this would include personal biases and prejudice. There is an emergent properties problem here, for if Sen wants to advocate open impartiality as a remedy for exclusionary neglect, we are left wondering where group biases would come from. Is this something out of nothing? This distinction may be untenable; you are either impartial or not. Sen seems to be suggesting an incomplete impartiality in this argument.

There is another problem. The discussion of inclusionary incoherence breaks down as well. As I understand it, the membership of the group placed in the original position is fixed. They debate and decide the form of society they would like to have, come to some form of agreement (through some unspecified procedure such as majority rule or consensus), then the veil of ignorance is lifted and they proceed to live their lives in accordance with the agreement. It seems to me that by construction, the group behind the veil of ignorance is fixed, so that decisions by the group will not affect the size of the group. This can't hold in real societies, since government policy affects economic and population growth though areas such as health care and immigration policy.

These contractual exercises rest on the ability to justify decisions to other people. The focal group accepts or rejects proposals made by its members. Sen sums it up by writing:

> "Judgments of justice cannot be an entirely private affair – unfathomable to others – and the Rawlsian invoking of "a public framework of thought" which does not in itself demand a "contract" is a critically important move" (Sen 2002, 456).

There is a great deal of openness left here. Agreements may not cover all situations, and certain principles can be accepted in such a public framework if these are judged to be "plausibly just" or "at least not manifestly unjust."

The question is whether an agreement that arises from a "public framework of thought" can cross national or political boundaries. Sen believed that it can, and argues that there is no reason that communication and public engagement can be sought and found only inside these boundaries. The impartial spectator may draw on any perspective. This is critically important for Sen especially in light of terrorism. It becomes imperative that nations strive to

understand one another in order to address this international problem. This requires communication and public engagement which highlights the role of the media and the press. These are the institutions that present information to the citizens, so the structure of these institutions plays a key role in decisions about the amount and kind of information that is presented to citizens, and then used to make decisions.

If these difficulties beset idealized exercises, imagine the same problems in democratic practice in the real world. Procedural parochialism and exclusionary neglect will be hard to separate. Inclusionary incoherence will affect population and its composition directly, and through the structure of the media. It will shape the structure of the media, which will in turn shape the structure of the discussion of any problem, including media structure.

**Section III: Methodology**

As admirable as Sen is for broadening the discussion of economics to include ethics and a more realistic conception of the person, something is still a bit off. His focus on individuals prevents him from paying adequate attention to other forces at work. As shown above, he does not ignore many of these issues. There is a question of whether Sen can really be classified as a methodological individualist. It certainly seems that way given his focus on capabilities and functionings. However, it could be argued that Sen uses capabilities and functionings as the most important *evaluative space* to measure how well policies and decisions work. This is conceptually distinct from using methodological individualism as a *basis for investigating* society and economics. If this is true, it seems that Sen himself has not been all that clear about issue himself, which has led to some confusion for his readers, including me.

Nonetheless looking at other forces is warranted and useful. According to Nuno Martins (2006; 2007) Sen has engaged in explicitly ontological theorizing, with his main focus on the nature of capabilities and functionings themselves and their usefulness as an evaluative space. People exercise these capabilities and functionings with varying degrees of success. This success depends on many factors which Sen has described, particularly in *Development as Freedom* (1999).

These capabilities and functionings take the role of causal powers, according to Martins (2006). Martins argues that the capabilities approach uses an open system characterization of the social world, so that these causal powers do not have direct and obvious links with observed outcomes. Capabilities are potential causal powers that may or may not be realized or achieved. If achieved, they become functionings. These functionings arise as a result of underlying biological, psychological, or social structures. Specifically, Martins writes:

> "Capabilities, like causal powers in general, are not actualities – they are potentials that may or may not be exercised and / or actualized. And similarly to causal powers, capabilities arise by virtue of underlying biological, psychological, or social structures which facilitate or constrain a particular achievement or functioning" (Martins 2006, 678).

This is a specific instance of invoking a structure to explain an outcome. The structure facilitates a person's ability to learn to read, so over time we observe that Jim is literate. The

structure may affect people differently because of their location within it. Positions on the ladder of the distribution of wealth and income come to mind.

What seems to be missing from Sen is a specific description of the influence of structures of any kind on capabilities and functionings, with two huge exceptions: famines and the treatment of women. But with respect to democracy we have generalities. We are given warnings that democracy is effective only insofar as people make good use of it. The ability to make good use of democracy depends in turn on the *institution* of the press and the media and its position between the people and the government. What might lead people to make better use of democracy, assuming its existence? This is a specific question that might be answerable using Sen's methods.

However, Sen may be under elaborated here. According to Martins, Sen uses several ontological categories. These are freedom as measured by capabilities and functionings, structure, process, interconnectedness and diversity (Martins 2007). However, Martins argues that people do not exist in a steady state. People grow, develop, and change. This process cannot be explained in terms of static categories like capabilities and functionings. We need institutions to help explain process. Most people do not learn to read on their own. That takes schools, which themselves evolve over time as people act on and within them, which in turn affects how well people can makes use of democracy.

Sen has stressed the intrinsic and instrumental importance of democracy. He views democracy as absolutely essential for maintaining personal freedom. He has also stressed that political freedom is important once it has been achieved, since it contributes directly to freedom and indirectly to the achievement of other goals. The effective use of political freedom can vary. How does democracy actually work, and what is the role of the press and free expression in how democracy works? These concrete questions demand concrete answers. These answers will differ over time because societies change.

What are the issues that confront a democratic government? Start with the idea that democracy is the idea that the power of the government flows from the people. According to Steven J. Wayne, there are three criteria used to measure how well democracy works. First is the problem of how the government represents and responds to the public. Second is the problem of the rules of how the government operates and makes policy decisions. Third is the problem of actual policy and its impact on society (Wayne 2004, 3). A government is considered to be more effective if it is more representative of the population, and if social needs, public inputs, and policy responses mesh together well (Ibid.)

Wayne also points out that democratic governments exist to protect certain core, basic values. The first set of values is life, liberty, and self-fulfillment. The second core value is political equality. This includes equal treatment under the law and equal opportunity to express their view through words, actions and votes. Wayne recognizes a practical problem here, writing:

> "Citizens with greater resources have a better chance of being heard and getting their way. The freedom to spend one's resources to influence who is elected to government and the policy decisions made by that government run counter to the principle that everyone should exercise equal influence because everyone is of equal worth" (Ibid., 4).

Thus tension exists between liberty and equality, and Wayne argues that it should be resolved in a way that benefits society as a whole. Wayne terms this the 'collective good' and for him it represents the third pillar of democratic government.

In light of these concerns, Sen discusses the role of the press and media in his 2009 work, *The Idea of Justice.* He candidly acknowledges that for democracy to work, a free and independent press is crucial for several different reasons. These are not necessarily unique to Sen, but they are important. Sen notes that free speech in general and a free press in particular directly improves the quality of life. Primarily this involves the exchange of information. Sen is concerned with government suppression of information here. He argues that diminished press and media freedom directly erodes the quality of life even if

> ". . . the authoritarian country that imposes such suppression happens to be very rich in terms of gross national product" (Sen 2009, 336).

He further acknowledges the informational role played by the press through specialized reporting such as on cultural or business affairs. It is important because it keeps people informed about what is happening in their communities and around the world. He says:

> "… investigative journalism can unearth information that would have otherwise gone unnoticed or even unknown" (Ibid.).

Sen also values the "protective function" of the press. He lists the ability to give voice to "the neglected and disadvantaged". "The rulers of a country" he writes, "are often insulated, in their own lives from the misery of the common people. They can live through a national calamity, such as a famine or some other disaster, without sharing the fate of its victims" (Ibid.). Yet if they have to face public scrutiny through the combination of valid elections with a free and uncensored press, the rulers can be held accountable, or be forced to 'pay a price too' in Sen's words. The idea is to subject the government to some kind of accountability to either prevent such things or to insure a more adequate response.

Sen's discussion of the actions of Ian Stephens in October of 1943, editor of the then British owned *Statesman* of Calcutta is revealing here. It shows both the limits and the promise of a journalism structured in a particular way. According to Sen, during the famine of 1943:

> "The Bengali Newspapers in Calcutta protested as loudly as government censorship permitted – it could not be very loud, allegedly, for reasons of the war and 'fighting morale'. Certainly there was little echo of these native criticisms in London. Responsible public discussion on what to do began in the circles that mattered, in London, only in October 1943, after Ian Stephens, the courageous editor of the *Statesman* of Calcutta (then British owned) decided to break ranks by departing from the voluntary policy of 'silence' and publishing graphic accounts and stinging editorials on 14 and 16 October" (Sen 2009, 341).

Public relief began in Bengal in November of that same year and the famine officially ended in December, both because of a new crop and the relief that was now more widely available (Sen 2009, 341). The press is often not as free as we might like to think even if official government restraints do not exist. In this instance, Mr Stephens was under intense pressure not to publish. That pressure may have prevented Mr Stephens from acting before he actually

did. Had those pressures not existed, such as NOT being in the midst of WWII, Mr Stephens (and other journalists) would have been freer to publish those accounts sooner than they did, and saved more lives.

Fourth, open discussion leads to the formation, acceptance, and possible change of values. He writes:

> "New standards and priorities (such as the norm of smaller families with less frequent child bearing, or greater recognition of the need for gender equity) emerge through public discourse and it is public discussion, again, that spreads new norms across different regions" (Sen 2009, 336).

The give and take between majority and minority rights in this context is correctly highlighted by Sen, reflecting the emergence of relatively tolerant values and practices (Sen 2009, 337). The formation and acceptance of values will depend crucially on the structure of the press and the media itself. This is tremendously important, and I will return to this idea below.

The fifth reason is the general idea that the press and media have an important role to play in facilitating public reasoning in general. Many scholars view the pursuit and assessment of justice as involving discussion among different people, with different interest and points of view. Though Sen views individual capabilities and functionings as the proper space for evaluation, Sen acknowledges the importance of institutions in a sense, writing:

> "The many sided relevance of the media connection also brings out the way institutional modifications can change the practice of public reason. The immediacy and strength of public reasoning depends not only on historically inherited traditions and beliefs, but also on the opportunities for discussion and interaction that the institutions and public practice provide" (Sen 2009, 337).

Such traditions and beliefs are often invoked to explain the poor quality of public discussion and press freedom in some areas, but Sen argues that authoritarian censorship of the press, suppression of dissent, and banning and jailing opposition parties and candidates provides a better explanation (Sen 2009, 337). Not surprisingly, Sen thinks that removing these barriers is a crucial contribution of democracy to the attainment and assessment of justice.

The press and the media can fulfill its important role with respect to Wayne's three aims and Sen's five reasons supporting a free press to a greater or lesser extent. Consider the first, the way the government responds to and represents the public. Obviously the press plays a key role here. The press and the broader media are institutions that occupy a place between the people and the government. The government itself is obviously an institution. Hamilton writes:

> "The social framework, within which economic activity takes place, shapes and molds economic activity. In other words, economic behavior is looked upon as institutionally conditioned behavior. But the most important common point of agreement of all these intuitionalists is that institutions are modes of social organization. They represent a way of order. These models of organization are subject to change as man faces new problems and new needs" (Hamilton, 2004 [1970], 76).

What becomes obvious is that we now have a society in which people organize their affairs and develop institutions to help them. These institutions both shape what people think and how they act, and this in turn can lead people to makes changes in these institutions. This of course depends on the values that a society and its people hold, and press and media discussions can shape and change those values.

**Section IV: Media ownership**

In the previous section, I have summarized the three basic core functions of government according to Wayne, and the five important reasons to support a free and independent press according to Sen. It is possible to categorize both as being in "the public interest" in some sense. However, the difficulty is that the press and the media in general can play a key role in actually defining "the public interest". since this falls under the ability to formulate and advocate for the acceptance of values. The public interest is likely to be multidimensional. Lawyer and Economist Howard Shelanski divides the public interest into two possible aspects. The first is a so called "efficiency model". Here the media is structured so that the media can better satisfy consumer (reader?) preferences. However, the 'democracy model' of the public interest implies that the media should be structured so as to allow the public access to diverse points of view and to allow informed discussion of public issues.

We already run into problems here. One, these goals are not always mutually compatible. Two, if the press and the media have a role in the formation of the preferences and the values of people and a society, then preferences and values can change so that efficiency in the "efficiency model" becomes a moving target. Three, the ownership structure of the media and the press becomes a vital public issue about which the public ought to be informed under the "protective function" and "open discussion" function. Robert McChesney writes that the 'problem' of the media is really two problems. One is the content of the media itself. The second is the policies, structures, subsidies, and regulations that are responsible for the nature of the media system as it exists today (McChesney 2004, p. 16). He points out that the media in the U.S. today is the result of an evolutionary process, which narrowly resulted in the media's current commercial structure (McChesney 2004, Chapter 1).

The possible influence of the ownership structure at this point is best illustrated by example. Legal scholar Edwin Baker argues that the press clause of the Constitution is vital to maintaining democratic discourse in the U.S. He remarks that a theory of democracy will be needed, and that this will entail a corresponding structure for the media and the press, which has implications for the "freedom of the press". If there are failures, are these caused by inadequate training of journalists and editors, or are there deeper structural problems that have to be addressed at a different level? Which means, according to Baker:

> "These questions implicate central issues of First Amendment theory. Agreement on two abstractions-that democracy requires a free press and that the First Amendment protects a free press-is relatively easy. But what constitutes 'freedom of the press'? That question cannot be answered without understanding the role or purpose of the constitutional guarantee" (Baker 1998, 318).

Baker goes on to outline four theories of democracy. These are elitist democracy, liberal pluralism or interest group democracy, republican democracy, and complex democracy. In the elitist model, government tackles complex problems that require expert guidance. Most

people have neither the time nor the talent to be involved in every aspect of governmental decision making, so electing representatives to do this for them seems to be a practical solution (Baker 1998, 320-322).

Baker views liberal pluralism or interest group democracy as one version of popular participation. Here, theorists view politics largely as conflict and partial resolution between different groups that have different interests. There needs to be a way for government to respond fairly to the different concerns of each group. Institutions should be designed to help create fair bargains or compromises between each group (Baker 1998, 323-331).

Republican ideas of democracy accept some of the premises and concepts of the liberal pluralist theorists, but differ in important respects. For one, where liberal pluralists seem to be arguing from the premise that interest groups cannot put aside their differences and act for the common good, republican theorists argue that they can. People and groups can have a conception of the common good and be concerned with the welfare of others. Second, group and individual interests emerge from their own efforts to formulate values and act on them. People and groups have to gather information to be able to do this, so that their political concerns and actions are or believed to be much more public spirited and community oriented than in the liberal pluralist view.

Baker's idea of "complex democracy" incorporates ideas from each of the other three theories. Baker agrees with the elitist tradition in that government often addresses very complex problems that require expert guidance to address properly. Problems and their potential solutions will be advocated by different groups, which will make bargaining and compromise necessary – a liberal pluralist idea. Each person and group gathers information and acts on the values they from and embrace, but they can set these aside in the public interest if this if they choose, which reflects the republican idea of a public realm that is used for the formulation and pursuit of the common good (Baker 1998, 325-339).

Clearly, the protective function of the press is key to all of these theories of democracy. Each one has particular implication for media regulation by the government. Note the feedback loop here. Government has some responsibility for media regulation, which can enhance or impair the flow of information which can enhance or impair the protective function of the press, which can enhance or impair the responsiveness of government to political pressure on issues like – wait for it - media reform. Adherents of complex democracy fear that the watchdog/protective function could be undermined by either government or private power. (For fears about government power, see Compaine 2002, and Djankov, McLeish, Nenova, and Schleifer 2003. For fears about private power, see McChesney 2004, Clark, Thrift, and Tickell 2004, and Miller 2002. For an article that incorporates both fears, see Motta, Polo, Rey, and Roller 1997). People fear that market segmentation or monopolization will undercut effective discussion. People also fear that a pluralist media will be strongly biased toward propaganda and mobilization, so much so that it will not add to the thoughtful discussion and informed debate about the issues.

All of this implies a particular structure for the media and the press. Policy in the media realm will have several functions for adherents of complex democracy. One, the strongest media order will not depend only on a single form of organization. Two, the media will perform different functions so it cannot possibly be organized in a uniform way. Think about the difference between the broadcast, cable news, and major daily newspapers on the one hand, and newsletters for particular groups like the National Rifle Association or the Union for

Radical Political Economists on the other. Three, government policy should seek to support other types of media organization that would operate alongside the private, market oriented sector. Four, the amount of government support, if any, should depend on how distorted or underdeveloped a particular sector is. Five, the nature of government support should depend on the function of the media type being subsidized. All of this with a view toward establishing a mixed media that is partially market driven, partially not, so that the media will be able to better perform the watchdog function better than a purely market oriented structure (Baker 1998, 386).

Baker's discussion of market failure through public externalities in the provision of information makes this kind of reform all the more important. It is a remedy to the under-provision of information that the media would provide in a purely private market setting. He cites the presence of advertising as a potential corruptor of public discourse. This is not a universally held belief, and Daniel Sutter 2002 provides a fairly well thought out contrasting view. Second, Baker argues that the public discourse or common discourse products will have a competitive advantage over smaller, pluralistic outlets mainly because of high initial costs of production, and relative ease of duplication. The implication is that:

> "Both economic and democratic theory however, predict that pluralistic media, especially those designed for comparatively impoverished groups, are likely to be especially underdeveloped and ought to receive special public support. Still, as a practical matter, the key principle for complex democracy is to pursue an opportunity to further government support for new, non-commercial forms of media discourse. Secondarily, it should support policies that reduce advertising's 'corrupting' effects" (Baker 1998, 387).

One need only note the tension between this view as described by Baker, Rawls' original position and Sen's identification of group bias in that context as detailed in a previous section.

Another illustrative example is provided by the American Journalism Review that highlights the possibility of "advertising's 'corrupting' effects." Shepard 1994 details an instance of the influence of advertising on the news. According to Shepard, in May of 1993, the San Jose Mercury news printed a guide showing how to read an auto dealer's invoice and negotiation. Local car dealers were not happy and about 40 dealers pulled their display ads, costing the newspaper about $1 million in revenue (Shepard 1994). The reporter, Mark Schwanhausser offered tips such as relying on the dealers invoice and not just what the salesperson said, and he quoted the author of a book on negotiating who "suggested that one reason God gave you feet was so you could use then to walk away from car salesmen" (Shepard 1994). The paper issued an apology, but the ad. boycott continued and did not end until the paper began running a full page house ad. that described "10 reasons why you should buy or lease your nest new car from a factory authorized dealer." That soothed many, but a few did not return (Shepard 1994).

However, the problem may be deeper, and this points to the structural issues that Baker alludes to above. Shepard talked to Ronald Collins, a George Washington university professor of law who studied advertiser attempts to shape media coverage, who said he was surprised the story ran in the first place: "Usually, the editor will kill that kind of story or the reporter knows certain areas are no nos." Schwanhausser highlights the same idea from the reporter's point of view, saying:

> "The publisher has ideas about how he would have done the story differently, and I have ideas about how I would respond to this boycott differently. But the boycott isn't really over my story. That's tunnel vision. *Larger financial and journalistic issue are at the heart of this*" (Shepard, 1994, my italics).

Miller 2002 adds some additional insight. He notes that there will be ethical dilemmas in journalism as the media concentrates. Miller contends that ethics must be modeled and practiced by those at the top of media conglomerates. Miller acknowledges that the process of conglomeration can have either positive or negative impacts on the ethical practice of these new media giants and other corporations. As a result, practicing journalists increasingly find that they occupy the bottom rung of the corporate hierarchy, and increasingly have to balance the ethics of journalism with the pressures that arise when news organizations are part of a media or other conglomerate.

Benjamin Compaine 2002 makes some further points that need to be considered. One is that many current media critics and reformers are wedded to an ideal vision of the media and the press that never has existed and never will. With respect to the idea that corporate ownership is killing, or has killed, hard hitting journalism, Compaine writes:

> "A bright red herring. When exactly was this golden age of hard-hitting journalism? One might call to mind brief periods: the muckrakers in the early 20th century or Watergate reporting in the 1970s. But across countries and centuries, journalism typically has not been 'hard-hitting'" (Compaine 2002, 22).

Compaine further argues that ownership may not matter now the way it once did, such as in the case of William Randolph Hearst, William Loeb, and Robert McCormick, each of whom had political agendas that then permeated their papers (Compaine 2002, 22). Corporate ownership may have driven out family or personal partisanship in the U.S. a while ago, and Compaine claims that that shift is doing so now in Latin America, at least as of 2002. Again, Compaine:

> "As Latin American media shift from family owned, partisan media to corporations, observes Latin America Media Scholar Silvio Waisbord, the media become less the 'public avenues for the many ambitions of their owners,' and their coverage of government corruption 'is more likely to be informed by marketing calculations and the professional aspirations of reporters'. This trade-off may not be bad" (Compaine 2002, 22).

And it may not change anything. A shift from family ownership to corporate ownership would likely still largely reflect the concerns of the upper classes of that society. Think "marketing calculations" and "professional aspirations of reporters". Since Compaine mentions Brazil, we could look at what Reporters Without Borders has to say about that country with respect to their index of press freedom. In 2002, Reporters Without Borders ranked Brazil at #54 out of 154 countries. It fell to 84$^{th}$ of 164 countries by 2007, but this was not a steady decline. Brazil jumped to 82$^{nd}$ of 168 countries in 2008, then climbed steadily to #58 of 173. There was a large fall to 108$^{th}$ of 178 countries by 2012, a fall to #111 of 180 countries by 2014, and a climb to 99$^{th}$ of 180 countries in 2015. But media ownership and legal protections of journalists continue to be a problem, despite the enactment of an "Internet Civil Framework Law":

> "The safety of journalists and the concentration of media ownership in few hands nonetheless continue to be major problems. Many acts of violence against journalists occurred during a wave of protests in Brazil. A human rights secretariat report in March 2014 on violence against journalists emphasized the involvement of local authorities and condemned the role of impunity in its constant recurrence" (Reporters Without Borders, https://index.rsf.org/#!/index-details/BRA).

Media ownership and structure is a vital concern for a free press and media. Reporters Without Borders is correct to be concerned with government ownership and interference with the press and the media overall, as are most scholars. Overt censorship becomes a paramount concern in these cases. However, the ownership structure matters for privately oriented and commercial media structures as well. If advertising continues to be a big source of revenue for press and media outlets, there will be continuing tensions like that faced by the *San Jose Mercury News* in the early 1990s. This tension is well captured by McChesney and Nichols, who write in the preface of *The Death and Life of American Journalism*:

> "We demonstrate in this book that the entire press system of the United States was built on a foundation of massive federal postal and printing subsidies that were provided to newspapers during the many decades that forged the American experiment. The first generations of Americans understood that that it was entirely unrealistic to expect the profit-motive to provide for anywhere near the level of journalism necessary for an informed citizenry, and by extension self-government, to survive" (McChesney and Nichols 2010, xiii).

Media and press ownership matter. Private ownership and the organization of the press as a for-profit business will shape the news in an indirect manner, through ethics (as highlighted by Miller 2002), and framing.

**Section V: Frames**

"Framing" is at best a difficult idea to pin down. Obviously that presents a problem if it is going to be used as an analytical category. That said, the use of the terms "frame" and framing have found wide use in the social sciences literature. Entman 1993 offers a very useful synthesis of the term. He starts with a basic definition:

> "Whatever its specific use, the concept of framing offers a way to describe the power of a communicating text. Analysis of frames illuminates the precise way in which influence over a human consciousness is exerted by the transfer (or communication) of information from one location – such as a speech, utterance, news report, or novel – to that consciousness" (Entman 1993, 51-2).

If it is not already apparent, people need to be aware that a frame in this sense can exist in the mind of the author of the text and can be reflected or captured in that text, and a frame will also exist in the mind of the receiver of the information. These do not necessarily have to be

consistent with one another. Entman identifies a fourth location for a frame – the culture, from which the communicator, the receiver and the text may draw. More specifically:

> "Framing essentially involves *selection* and *salience*. To frame is to *select some aspects of a perceived reality, and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and or treatment recommendation* for the item described" (Entman 1993, 52, emphasis in original).

Entman further notes that frames perform four functions. They define problems, diagnose causes, make moral judgments and suggest remedies. He uses the "Cold war" as an example of a frame used by the press in foreign policy reporting up until around the time of the fall of the Berlin Wall. For a "cold war" frame the press highlights certain events as problems, like civil wars, then identified the source as communist rebels. Further, the press made moral judgments – that rebels are "atheist aggressors" and a threat to the "American way of life," for which the solution is American intervention in support of the other side (Entman 1993, 52).

Entman is using culture in a unique way. It is the stock of commonly invoked frames, which for him leads to the definition of culture as "the empirically demonstrable set of common frames exhibited in the discourse and thinking of most people in a social grouping" (Entman 1993, 53). After having defined culture thusly, one can ask the obvious question about how those frames come to be, come to be shared, and how they come to be accepted. Communication conveys information, but usually the communicator and receiver have some form of common referent – starting with language. Since humans also have tendency to understand things through the use of narrative, people need to make choices about how to present the information they wish to convey. Less obvious are the choices they make when they receive information. The importance of the media and press grows once we recognize the ability of the press and media to both present information and select the frame in which it is conveyed to citizens, and the ability of citizens to interpret this information in light of their own frames.

"Frames" may operate on at least two different levels. One is captured by Entman. The other is captured by the idea that question wording changes survey responses. A recent work that examines the impact of money on politics by Martin Gilens reveals both. He makes two points with respect to surveys. First it is possible that different wordings do not really capture identical concepts, so that the people in the survey cannot be said to have changed their mind only based on the way the questions are phrased. Gilens points out that in numerous surveys of U.S. citizens the phrase "assistance to the poor' elicits responses much more sympathetic to the poor than does the phrase "welfare". Gilens raises the idea that respondents typically understand "welfare" as cash assistance to the able bodied working adult. By contrast, "assistance to the poor" can include subsidized medical care, housing subsidies legal aid, job training and a number of other programs. If this is the case, the negative impact of "welfare" as opposed to "assistance to the poor" should be understood as:

> ". . . not as a superficial response to an emotionally laden term, but as a sophisticated differentiation between kinds of government antipoverty programs" (Gilens 2012, 33).

Different wordings for a question at the specific level may reveal different understandings at the contextual or cultural level.

As Entman points out, "frames" affect the salience of information presented in any piece of communication. But:

> "The word *salience* itself needs to be defined: It means making a piece of information more noticeable, meaningful, or memorable to audiences. An increase in salience enhances the probability that receivers will perceive the information, discern meaning and thus process it, and store it in memory" (Entman 1993, 53).

Since we are talking about interactions here, a choice to highlight certain information by repetition or placement may not make this information salient to the reader, if it seems to conflict with the reader's own frame(s). Conversely, an idea that is buried in part of a text or other communication can be received as highly salient if it happens to be consistent with the frame(s) used by the audience.

There are very important implications for political reporting:

> "Frames call attention to some aspects of reality while obscuring other elements, which might lead audiences to have different reactions. Politicians seeking support are thus compelled to compete with each other and with journalists over news fames" (Entman 1989, 55).

Entman describes four implications for both political reporting and wider communications issues. One is audience autonomy and dominant meaning. By 'dominant meaning' Entman means that it comprises the problem, the cause(s), the ethical judgment or evaluation, and solutions that are the most likely to be noticed and accepted by the most people. In other words, if a text or piece includes mutually reinforcing elements that suggest that a glass is half full, it is very unlikely that the audience will reframe the information to construct for themselves the message that the glass is half empty (Entman 1989, 56). Two, even though working journalists may follow the established rules to maintain objectivity, they may still convey a dominant framing of the news or information that prevents most of the audience from assessing a situation in a balanced way. Because reporters have no common knowledge of framing, they are susceptible to very skillful media manipulators who impose their dominant frames on the news (Entman 1989, 56-57). Reporters would need to be educated on the existence and effects of framing to enable them to report and construct news that makes two or more interpretations salient to the audience. This is much more than reporters are now called on to do, but according to Entman it would result in a far more balanced reporting than the current norm of "objectivity". Three, content analysis would become focused on identifying frames, which would then avoid treating all positive or negative messages as equally important. Without framing, Entman reasons that analysts won't pick up on the differences between the audience frames and the author's. Four, political elites may control the framing of issues, in which case the ability to frame and have that frame accepted would become a central power in a democratic country. The implication is that if the frame can be manipulated, true public opinion could be impossible to find. At the very least, Entman contends that considering the idea of framing allows a critical examination of the frames used by politicians, audiences, and reporters. Thus, frames are an avenue by which the public can influence the government, BUT the government could also influence the public. It is this

symbiotic relationship between the media, the government, and the public that Sen does not consider as much as he should.

The link between ownership structure and framing now begins to emerge. A government owned or dominant media would frame issues differently from a private one. So much so that Djankov et. al (2003) argue that a purely government owned media will not frame issues so as to fulfill a "public choice" framework that cures market failure. Instead, they find that government ownership tends to undermine political and economic freedom. This suggests that the "frame" for government owned media might be "The government is good, and anything the opposition does to hinder the government is bad." However, the San Jose Mercury News example discussed above suggests that there are market failures in the provision of information, which Djankov et.al. acknowledge, but which neither a government owned nor privately owned media might cure. The San Jose example is suggestive – both the newspaper and the dealerships were operating as businesses, and both accept the overall idea that business is a morally laudable institution. At the risk of reading too much into the example, the fact that the paper published a guide on negotiating with dealerships implies a judgment about both the audience and the dealerships. The dealers picked up on the idea that when the paper did this, it was implicitly endorsing the idea that car dealerships were untrustworthy (Shepard, 1994). It also implies that the paper made a judgment that its readers could benefit from the guide.

Murray Edelman, in pieces spaced roughly thirty years apart, suggests an idea that could be used to explain the pattern of information in both a private and government system. Edelman in his book *The Symbolic uses of Politics* (1964), explores the idea of politics as a symbol that confers intangible benefits to groups of people as opposed to a rational exercise of resource allocation and problem solving. It is clear that governments do engage in resource allocation and problem solving, so that Edelman is not saying that the symbolic and the resource allocation functions are mutually exclusive. For his idea to be coherent, these ideas have to coexist. An important theme in this work is that there is a disconnect between what governments are reported to do both legislatively and administratively in the press, and what governments are actually doing.

Edelman's conception stands in direct contrast to the idea that the press and the media adequately fulfill the informative and protective functions necessary for a working democracy. In this, Edelman highlights the crucial aspect of the audience of the press and media, and thus why ownership forms become a central consideration. In most ideal models, the press supplies information to a public that will analyze those ideas and make considered political judgments about the best policy to address some problem. But, Edelman writes:

> "The mass public does not study and analyze detailed data about secondary boycotts, provision for stock ownership and control in a proposed space communications corporation, or missile installations in Cuba. It ignores these things until political actions and speeches make them symbolically threatening or reassuring, and then it responds to the cues furnished by the actions and the speeches, not to direct knowledge of the facts" (Edelman 1964, 172).

He concludes that widely reported government actions can often serve as a symbol that quiets a perceived threat, so that the public becomes quiescent even if the problem has not been addressed. The symbolic role of government action is to provide reassurance. This

occurs through several avenues. Edelman points out that what people actually get from the government is what administrators and legislators do, rather than the promises of the law, oratory, or constitutions. Further, people assume or believe that what administrators do is actually specified by laws reflecting "the public will" so that these actions are acceptable to the public. In addition, since people can't really know what effect a law or policy will have in the future, they will substitute personal meaning for impersonal, or intersubjective, or objective meaning. They believe that officials have wider leeway to deal with problems than they actually have. People will ally themselves with those who symbolically show that they can deal with the problems, even apart from the actual result. Fourth, the achievement of a political goal by some group leads to demands for more of the same kinds of benefits, rather than contentment. Fifth, speeches gestures, and settings serve to limit people's political claims and maintain public order (Edelman 1964, 193-194).

In 1993, Edelman follows up with his article "Contestable Categories and Public Opinion" which appeared the journal *Political Communication.* Here he points out that the choice of analytical category by a news organization has far reaching consequences that are not often analyzed. Those categories become broad frames which highlight some information and exclude other information. Edelman analyzes several of these 'contestable categories' such as crime. He claims that most crime reporting is based on the prior belief or frame that crime is driven by evil people who thrive on murder, mugging, and robbery. Thus, widespread public support for tough 'crime control' measures is widely reported and helps candidates who are perceived to be 'tough on crime' win public office to enact these measures. But Edelman points out some problems with this. First:

> "At the same time it helps office holders win reelection and helps conservatives defeat social programs. The facile evocation of inherently criminal types conceals the link between an economic and social system that denies large numbers of people the means to support themselves and their families and their resort to illegal action. To break the law is in part a way of surviving and in part a form of social protest, usually the only effective way for people who lack money and status to express their anger at a social and political system that keeps them poor and dependent" (Edelman 1993, 234).

Edelman then shows how this becomes a self-fulfilling prophecy. Labeling large numbers of people as innate criminals ensures that breaking the law will remain almost the only viable option for survival. Further, this will remain the only avenue for political expression, ". . . reinforcing the controversial categorization and constructing an ever more vicious cycle of cause and effect" (Edelman 1993, 235). If reports of crime appeal to the audience and increase circulation, subscriptions or viewership, the media outlet becomes a more attractive place for advertising, based on the characteristics of the readers or viewers. Note also that the 'innate criminal' frame likely appeals to businesspeople who control advertising budgets. The existence of crime as the product of innately criminal people is very simple to understand and easy to use. It fits in one sentence that has direct emotional appeal to both audience and potential advertisers. The idea of crime arising from social, political and economic conditions is harder to convey and understand, especially if a sizable portion of the public think it excludes the possibility of the innately criminal or "evil". Again, audience considerations pay a role in "framing" considerations.

Finally, Edelman points out that the framing for a "contestable category" often serves to benefit the top layers of society at the expense of the bottom. If the press and media and the

advertisers are both classified as businesses, they will share a common outlook on a number of issues, though not all. I cannot summarize it any better than Edelman:

> "Each such label highlights some immediate, surface aspect of a governmental policy while obscuring the close links among related policies and related categories. The classification therefore misleads opinion about the origins of problems, their effects, their scope, and effective remedies. At the same time the conventional categories are effective in winning and maintaining public support for established hierarchies and inequalities, as discussed below" (Edelman 1964, 233).

Gilens (1996) asks why the face of poverty in the U.S. is usually that of African Americas in urban areas. According to Gilens surveys show that that the American public largely overestimates the proportion African-Americans among the poor, and that these perceptions result in greater opposition to welfare programs among the general public (Gilens 1996, 537). The media routinely underrepresent segments of the poor, such as children and the elderly, that might engender more sympathy from the general public, whereas working age adults that happen to be unemployed are overrepresented. Gilens concludes:

> "But current misunderstandings may pose a greater danger: that whites will continue to harbor negative stereotypes of blacks as mired in poverty and unwilling to make the effort needed to work their way out. By implicitly identifying poverty with race, the news media perpetuate stereotypes that work against the interests of both poor people and African Americans" (Gilens 1996, 538).

In another case, Ervand Abrahamian in 2003 sought to examine the way the U.S. news media reported on the September 11, 2001 attacks on the World Trade Center and the Pentagon. His basic claim is that the media by and large accepted the framing put forth by Samuel Huntington in his book *Clash of Civilizations.* The result was that the media failed to discuss the political issues of Palestine and general Arab Nationalism. Huntington has been criticized for his idea of culture as a fixed rather than fluid concept by anthropologists and social historians, but this did not prevent the mainstream U.S. media from adopting a 'clash of civilizations' framing of the issues surrounding the September 11 attacks. Abrahamian writes that a cursory glance at the US media after September 11 leaves no doubt as to:

> "Huntington's triumph. The media framed the whole crisis within the context of Islam, of cultural conflicts, and of Western civilisation threatened by the Other. Even the liberal New York Times adopted this framework, and then tried every so often to distinguish between good and bad Muslims, between the correct and incorrect interpretations of Islam, and between peaceful and violent understandings of the Koran. No doubt its editors would reassure us that some of their friends-nay, even some of their op-ed writers-are Muslim. Such nuances, however, are lost within the larger picture portraying the main threat as coming from the Muslim world" (Abrahamian 2003, 531).

In a later paragraph, Abrahamian details the fact that the political demands of Muhammad Atta and the other hijackers were not released by the FBI nor discussed in mainstream media outlets. This is important because, as Abrahamian explains, "…Al-Qaida had been incorporating into its recruitment tapes highly charged scenes from Palestine" (Abrahamian

2003, 536). Scholars and commentators who raised the issue of Palestine, as opposed to the Huntington frame, found that they were ridiculed and punished for raising the issue of Palestine. Abrahamian gives three examples – an unnamed Georgia congresswoman, an unnamed Saudi prince, and British Prime Minister Tony Blair. By contrast, a number of British and European outlets made explicit reference to the Palestinian problem in their reporting regarding September 11 and its aftermath. Abrahamian quotes a few examples; here is a sample:

> "David Hirst of the *Guardian* reported that Palestine was 'central to the crisis'. He added that, by citing Palestine, bin Laden had struck a resonating chord with much of Arab opinion; and that even 'the resolutely pro-American King Abdullah of Jordan had told the US he doubted New York would ever have happened had it addressed the Arab-Israel conflict in a more serious, less partisan, way'" (Abrahamian 2003, 537).
>
> "Eric Rouleau, travelling through the Gulf, reported for *Le Monde* that the 'consensus in the region was remarkable', and that all, from head of state to the man in the street, insisted the issue of terrorism could not be addressed without first dealing with the 'Palestinian-Israeli conflict'" (Abrahamian 2003, 537).
>
> "Fred Halliday argued in the *Guardian* that the crisis could be explained by political tensions, especially over Palestine, rather than by 'nonsense talk of clash of civilisations'" (Ibid., 538).

Abrahamian also raises the issue of conformity/acceptance of the views of the government. He points out that where the U.S. media diverged from the European, it conformed to the views of the U.S. administration. A number of scholars have decried the press' reliance on "official sources" for news reporting. Among the most prominent have been Robert McChesney and Robert M. Entman (Entman 1989, McChesney 2004). The reliance on official sources can potentially undermine the protective function of the press and the media which almost everyone agrees is tremendously important.

Along these same lines, Herring and Robinson (2003) use Noam Chomsky as an example of a scholar whose work is routinely ignored by mainstream media outlets. Chomsky has argued that institutional filters exist both in the press and in academia to filter out 'non-elite' perspectives. Herring and Robinson conclude that Chomsky is largely ignored because the institutional filters screen out people who focus on corporate power, who have a principled opposition to U.S. foreign policy and the role of the academy in supporting corporate power (Herring and Robinson 2003 553, 568).

Stories and events that challenge the accepted classifications and narratives will receive little play in the mainstream press and media. They will instead be marginalized to 'fringe' outlets. Often, if these stories and issues and their authors do appear in mainstream outlets, it could be to give the appearance of balance, or to expose dissenting viewpoints to ridicule couched as "serious discussion of the issues". If one accepts the idea made popular in the 1980s and continuing today by Reagan and Thatcher (among others) that "government is the problem" you now have a frame, or a prior belief, that since "too much government regulation hinders the operations of business and hinders economic growth" you then have a justification for deregulation in all policy areas. Proposals for government regulation in many areas will be

dismissed out of hand because of the presumed efficiency of business and ineptitude of government. Or because government is presumed to be inept, proposals to privatize many public services will get wider play.

**Section VI: Conclusion**

For a functioning democracy people need transparent discussion of polices that affect them, such as labor and capital market policy and media regulation. This is what the press and the media is supposed to provide. But if the media is structured in such a way that certain discussions are "off-limits", people can't make informed judgments about the workings of the labor market, the capital market, or the structure of the media and the press. If such limits exist, then this conflicts with the ideal of democracy.

Policies that affect the labor and capital markets are critically important because these markets determine the distribution of income. Thus, they heavily influence the kinds of freedoms that people enjoy. Sen's main focus has been on capabilities and functionings as a space for the evaluation of well-being. Sen admits that caste and class can influence a person's capabilities and functionings, thus their well-being. Martins (2006) characterizes much of what Sen has done as a "philosophical under laboring exercise," an ontological clearing of the decks, trying to find out what exists, what is important and why. Sen selects capabilities and functionings as the primary units of analysis. But the focus on capabilities and functionings as situated within the individual has diverted attention away from some of the "social" and irreducible, less individualistic, yet important aspects such as structure, process, interconnectedness, and diversity. All of these social aspects are important to Sen, but his discussion makes it easy to miss. They seem secondary to capabilities and functionings. Sen's ontological structure may be insufficiently developed in this regard. It also means that Sen and many of his readers (including me) have failed to distinguish the evaluative space that Sen uses, individual capabilities and functionings, from a more methodological concern about the basis for investigating society and economics, which is where questions about methodological individualism reside. If Sen is a methodological individualist, writers will have to carefully distinguish the evaluative space from the methodological concerns. Sen argues that freedom is tremendously important, and that freedom should be measured in the space of capabilities and functionings. Process, diversity, structure, and interconnectedness emerge as secondary elements of analysis. Sen discusses them because they have important effects on the capabilities and functionings of individual people. This reflects a problem, in that while Sen can be seen in some ways as a methodological individualist given his focus on capabilities and functionings as part of a single person, Hodgson (2007) has pointed out that the definition of methodological individualism is not at all clear. Some writers have taken methodological individualism to mean that the proper focus of study is individuals and the relations among them. For Sen, the choice to focus on capabilities an functionings which enable individual people to live the lives they value, would seem to place Sen in the camp of methodological individualism. But there is a difference – methodological individualism is typically regarded by its defenders as a *scientific* method by which the phenomena of a society are explained in terms of the laws that govern the nature of an individual human being. There is a difference between taking people as a focus of study with respect to ethics and justice as Sen does, and taking them as the proper focus of study for a scientific inquiry regarding the laws that govern both individual behavior and outcomes, and social behavior and outcomes. At the very least, this ambiguity plays out in Sen since the ideas of process,

structure, interconnectedness, and diversity might fall under the idea of the relations among individuals.

A broader construction would allow capabilities and functionings to influence process, diversity, interconnectedness and structure, and vice versa. Sen seems to be trying to improve neoclassical analysis from within the tradition, since he still uses many of the same tools such as constrained optimization, an individualist orientation, and the use of a welfare framework that is largely inspired by classical and neoclassical economic doctrine. The tension between the individualism of neoclassical economics and the framework of process, diversity, interconnectedness, and structure still remains.

The *process* of the development of the media and the press in the United States reveals the *interconnectedness* between the audience and the media. Depending on the perceived success of the press and media in conveying the information necessary for citizens to have a functioning democracy or for the press and media to make a profit leads to attempts to change the *structure* of the media and the press. Often this involves government action, revealing yet another connection between the audience, the press and the media, and the government. Now the press and media convey ideas that affect the debate over the *structure* of the press and media, and other institutions, like banks and the financial industry. The idea of the *structure* of the media and the press has very important implications for *diversity* of points of view. Almost everyone rightly acknowledges the danger of a purely government owned press, but this is a tacit admission of the idea that the structure of the press and media influence the flow of information which can either enhance or subvert democratic governance.

In practice this means that having a media structured as a private business which can be very large presents its own dangers. For example, Robert McChesney writes:

> "Most dominant media firms exist because of government granted and government enforced monopoly broadcasting licenses, telecommunications franchises, and rights to content (a.k.a. copyright). Competitive markets in the classic sense are rare; they were established or strongly shaped by the government. So the real struggle is over whose interests the regulation will represent" (McChesney 2004, p. 19).

Deregulation in this context will mean government regulation that often enhances the interests of dominant corporate players (McChesney 2004, 20). McChesney and other writers such as Isaacs (1986) detail the historical emergence of a professional journalism and the constant barrage of criticism that followed. The press and the media in the U.S. emerged through a process of historical struggle, the outcome of which was not certain at the time. However, McChesney notes that there are three planks that inform media debate to this day that emerged early on in this struggle in the United States. First, the American Newspaper Publishers Association (ANPA) took steps to ensure that coverage of the debates between the press and its often socialist and union based critics in the 1920s were either not reported, or slanted in such a way that it favorably portrayed the interests of the owners. Second, the owners used the First Amendment "freedom of speech" clause to blunt regulatory proposals that might interfere with commercial interests. Third, the ANPA called for self-regulation as the appropriate response to big, concentrated private control of communication (McChesney 2004, p. 63). The ultimate result of the struggle is ably summarized by Entman (1989) in the introduction to his book *Democracy without Citizens*:

> "In essence, the dilemma is this. To become sophisticated citizens, Americans would need high quality, independent journalism; but news organizations, to stay in business while producing such journalism, would need an audience of sophisticated citizens. Understanding this vicious circle of interdependence reveals that the inadequacies of journalism and democracy are the 'fault' of neither the media nor of the public. Rather, they are the product of a process, of a close and indissoluble interrelationship among the media, their messages, their elite news sources, and the mass audience" (Entman 1989, p. 10).

We are confronted with a world that is in many ways open and complex. We build theories to describe and explain what we observe in that world that are closed, since our minds are finite, and we limit our theories and models to include only what we judge to be relevant information. I am not sure that questions of "open systems" have implications for ideas of justice, but it seems Sen may be sending out feelers in this direction. It is possible that ideas of justice have evolved as societies have evolved, while we typically think of justice as a fixed ideal.

Although Sen explicitly discusses democracy, he neglects process, structure, diversity, and interconnectedness when it comes to the media and the press. That means that there is also an ontological shortcoming in Sen. Sen does discuss interconnectedness, diversity, individuals, and process in some places, but do we have social class and institutions explicitly considered? Or time? These are important questions since social class and institutions both reflect and influence the ongoing interplay of people and their surroundings. It seems that Sen is trying to reconcile an equilibrium framework with an evolutionary process, and I do not think that this is possible. If complex systems have properties that can't be reduced to individual components, then Sen could further modify his own framework to engage in substantive theorizing along these lines.

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**Author contact:** zinkj@morningside.edu

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# A critique of Keen on effective demand and changes in debt[1]

Severin Reissl [Kingston University, UK]



**Abstract**
In a paper for the *Review of Keynesian Economics*, Steve Keen recently provided a restatement of his claim that "effective demand equals income plus the change in debt". The aim of the present article is to provide a detailed critique of Keen's argument using an analytical framework pioneered by Wolfgang Stützel which has recently been developed further. Using this framework, it is shown that there is no strictly necessary relationship whatsoever between effective demand and changes in the level of gross debt. Keen's proposed relation is shown not to hold under all circumstances, and it is demonstrated that where it does hold this is due to variations in the 'velocity of debt'-variable he introduces. This variable, however, lacks theoretical underpinning. The article also comments on Keen's proposal that trade in financial assets should be included in effective demand, arguing that this undermines the concept of effective demand itself. It is also shown that many weaknesses in Keen's argument stem from a lack of terminological clarity which originates in his interpretation of the works of Hyman Minsky.

**JEL codes** E12, E20, E44, E51

**Keywords** effective demand, endogenous money, debt, balance mechanics

## 1. Introduction

For a few years, Steve Keen has been advancing the hypothesis that *effective demand equals income plus the change in debt*, and has provided various formulations of this argument. This article focuses on his most recent restatement thereof in the *Review of Keynesian Economics (ROKE)* (Keen, 2014a) as part of a symposium on the matter. The aim is to provide a detailed critique of Keen's argument. An analytical framework – balance mechanics - adapted from a paper co-written by the present author is used to examine Keen's claims. Two general objections will be raised against the argument in his original paper. Firstly, his "velocity of debt" is a variable lacking theoretical underpinning which, whilst necessary for the argument, is essentially left undetermined to pick up all the contingencies Keen does not take into account. It will be formally shown that there is no strictly necessary relationship between effective demand and changes in debt. Secondly, Keen introduces a questionable redefinition of key terms and his argument suffers from a lack of definitional clarity partly carried over from the work of Minsky.

We will also refer to three critiques that have appeared alongside Keen's article, one by Palley (2014), one by Lavoie (2014a), and one by Fiebiger (2014). This critique will contribute to the debate through the original application of the balance mechanics framework to Keen's hypothesis. The framework is used to show that the proposed relation in Keen (2014a) does not hold under all circumstances, which is a novel point as well as the main conclusion. It will also be shown that where the equation does hold, this is due to variations in the velocity variable. However, Keen provides no theory of what governs changes in this variable. While

[1] I would like to thank Marc Lavoie, Engelbert Stockhammer, Fabian Lindner, Johannes Schmidt, and Jeanette Findlay for their helpful comments on various drafts of this paper.

arguments similar to this point have been made by others, our analytical framework allows us to establish this result in a formal manner.

This article is structured as follows: section 2 distinguishes Keen's hypothesis from other contributions in the post-Keynesian literature. Section 3 summarises Keen's original article, his rejoinder, and the main points raised in the three previous critiques. Section 4 presents the analytical framework that will be used to examine Keen's claims. Section 5 applies the balance mechanics framework to Keen's argument and discusses his interpretation of Minsky's work. Section 6 concludes.

## 2. Keen and the post-Keynesians

The role of credit in capitalist economies is, of course, central to post-Keynesian economics. A distinctive feature of this paradigm is that analyses are set in the context of a monetary production economy (see Keynes, 1973; Wray, 1999, p. 180), which forms the basis for the long-run non-neutrality of money. Money is seen as having evolved from early credit relationships (e.g. Tymoigne and Wray, 2006) while the money supply is held to be endogenously determined by the demand for bank credit (e.g. Lavoie, 2006; Dow, 2006), with the latter view gaining increasing acceptance outwith the post-Keynesian school (McLeay, Radia, and Ryland, 2014). It is important, however, as Palley (1992) notes, not to conflate too closely the issue of money supply endogeneity and the importance of financing relationships at large, since this may lead to a misplaced focus on the money supply in macroeconomic analysis. Palley (ibid.) proposes the term 'endogenous finance' to reflect the view that attention must be paid to bank as well as non-bank credit to appreciate the "potentially enormous elasticity in the economic system's capacity to finance transactions" (ibid., p. 2) which is generated by the financial system at large. This view is also expressed by Lindner (2015).

The notion of credit-driven business cycles, of booms fuelled by credit followed by financial crises and recessions caused and prolonged by excessive indebtedness is an essential component of the post-Keynesian literature, with much of it being built on the contributions of Minsky (1986/2008) (see e.g. Lavoie, 2009; Kapeller and Schütz, 2012; Stockhammer and Michell, 2014). The most widely used modelling approach in post-Keynesian economics, stock-flow consistent (SFC) modelling, is inherently well-suited for such analyses (Godley and Lavoie, 2012). The claim investigated in this article, however, has to be clearly distinguished from such arguments. The question at issue is not *whether* levels of (private[2]) debt or changes therein can have an impact on effective demand and consequently national income, or on macroeconomic stability. On this proposition there appears to be universal agreement in the post-Keynesian literature. Whether such a connection exists in a given context is then an empirical question. For instance, Stockhammer and Wildauer (2015) find a positive effect of household debt on consumption, but a negative one upon investment (including residential investment).

Keen's hypothesis is more fundamental and bold, namely that capitalist economies are *always and everywhere* credit-driven, that there is an immutable link between changes in aggregate (i.e. all types of) debt and changes in effective demand which can be expressed in a simple relation much like the equation of exchange (M*V = P*Y). Apart from the papers we

[2] Keen's argument applies equally to both private and public debt qualitatively (Keen, 2014a, pp. 284-285), although he appears to focus on the role of private debt.

shall examine here, earlier statements of Keen's argument can be found in Keen (2009a, 2009b, 2009c, 2011a, 2011b, 2012b, 2012c, 2013, & 2014c). In addition, a significant part of the debate has taken place on blogs (see Keen, 2011d, 2012a & 2014b; Mason, 2012; V. Ramanan, 2012 & 2014; Edmonds, 2014a & 2014b).

The next section will provide a summary of Keen's article and present the most substantial points from the three critiques which appeared alongside it.

### 3. Keen's argument and previous critiques

Using the example of an increase in effective demand, which is the one he appears to focus on, Keen's argument can be summarised thus: If there is a positive difference between the present period's effective demand and the previous period's realised aggregate income, this difference has to be financed by an increase in debt. Effective demand is then equal to the previous period's income plus the change in total debt multiplied by a velocity of circulation variable (a discussion of this variable is provided below). Keen's theory can be neatly summed up in an equation used by both Lavoie (2014a, p. 322) and Palley (2014, pp. 313-314) in their critiques and also presented by Fiebiger (2014, p. 300):

$$AD_t = Y_{t-1} + v_t * \Delta D_t \quad (1)$$

Where AD is aggregate or effective demand[3], Y is aggregate income, v is the 'velocity of debt' and ΔD is the total change in the stock of all debt in the economy during the period under examination. Keen additionally divides the variable _D into different components according to the purpose for which the debt is incurred (Keen, 2014a, pp.284-285). However, equation (1) can be seen as an adequate shorthand representation of the relations presented in Keen (2014a), since Keen himself presents an almost identical relation at one point in his paper (Keen, 2014a, p. 283), the only difference being notational, and has used it in other works (e.g. Keen 2014c, pp. 12-13). All statements about equation (1) made below are valid for the more detailed relations presented in Keen (2014a), since all these relations incorporate the basic hypothesis summarised in equation (1). He further argues that since "monetary expenditure is on both goods and services and assets" (Keen, 2014a, p. 284), debt that is incurred to purchase financial assets must be included in the equation and hence be a part of effective demand.

Keen cites Pigou, Schumpeter and Minsky as antecedents to his argument. He provides a discussion of the velocity variable, a description of endogenous money creation, and a section arguing that his approach is consistent with what he views as the identity of expenditures and income. He concludes his argument by presenting some empirical data.

Palley (2014) notes that Keen's equation is deficient in assuming that agents invariably have expenditures equal to the previous period's aggregate income ($Y_{t-1}$), unless there is a change in the amount of debt (i.e. $\Delta D_t \neq 0$). As such, changes in the amount of debt become the sole

[3] For a textbook treatment of the principle of effective demand, see Lavoie (2014b, Ch. 5). Keen's article does not contain a definition of effective demand. As far as can be deduced, effective demand in period t is simply taken to be equal to total expenditures in period t. We shall adopt a slightly more nuanced definition in section 5.

factor driving changes in effective demand, to the exclusion of other typical Keynesian factors such as the distribution of income.

Fiebiger (2014) criticises Keen for a lack of definitional clarity as well as an inconsistent use of time-subscripts in his period-analysis. These deficiencies, according to Fiebiger, lead Keen to proclaim trivial statements as novel insights and serve to obscure his argument. Fiebiger laments that Keen insufficiently distinguishes between endogenous money creation through private bank credit and the impact of private sector debt at large, often appearing to identify the one with the other. Fiebiger shows that most private sector debt is non-bank credit. On this basis, he questions Keen's empirical analysis.

Lavoie (2014a)[4] points out that if $v_t$ in equation (1) is not treated as constant, then the equation becomes "a truism, a tautology, where v becomes identified after the fact, as a residual" (ibid. p. 323), a point closely related to our discussion below. Lavoie also notes that Keen performs a considerable leap from arguing that changes in debt can have a considerable influence on effective demand to claiming that effective demand equals income plus the change in debt – a distinction we also pointed to above.

The next section introduces the analytical framework we shall utilise for our critique.

## 4. Balance mechanics

The 'balance mechanics' method of analysis was devised by Wolfgang Stützel in his two major works (Stützel, 1978 & 1979) and bears resemblance to Godley's sectoral balances approach (see e.g. Godley, 1999) as well as to SFC modelling (Godley and Lavoie, 2012). While Stützel's work is not well-known today, it has maintained a number of advocates (see e.g. Schmidt, 2009 & 2012; Flassbeck, 2001 & 2011) and has attracted renewed interest in the wake of the financial crisis, which led to Stützel (1978) being reprinted. The formalisation of the balance mechanics framework as utilised here was initially undertaken by Lindner (see Horn & Lindner, 2011; Lindner, 2012, 2014 & 2015). The most recent version was developed in a manuscript by Lindner and the present author (Lindner and Reissl, 2015). The content of this section is an abbreviated version of section 1 in Lindner and Reissl, (2015), and a very similar section can be found in Lindner (2015). The balance mechanics approach is characterised by two elements. The first consists of simple accounting relationships:

The balance sheet of any economic unit (an individual, a household, a firm, etc.) consists of its assets, its liabilities and its net worth, *nw*. Assets can be divided into tangible assets, *ta*, and *gross* financial assets, *gfa*. Liabilities, *l*, are debts and equity[5]:

$$ta + gfa - l = nw \tag{2}$$

*Net* financial assets, *nfa*, are the difference between *gross* financial assets and liabilities:

$$gfa - l = nfa \tag{3}$$

[4] Some of the points made by Lavoie can also be found in his recently published textbook, in which a subsection is dedicated to the debate (Lavoie, 2014b, pp. 271-273).
[5] Stocks are here treated as liabilities for the issuer (and thus as financial assets for the holder) in line with common accounting conventions (Eurostat, 2013; Lindner, 2015).

Gross financial assets can be further split into means of payment *m* and all other financial assets, *ofa*[6]:

$$gfa = m + ofa \tag{4}$$

A unit's net worth hence consists of the value of their *net* financial assets plus the value of their tangible assets. It changes if the sum of these alters:

$$\Delta nw_t = \Delta ta_t + \Delta nfa_t \tag{5}$$

In the absence of asset price changes, *nfa*, *ta* and *nw* can only change if the quantities of financial assets and/or liabilities and/or tangible assets held changes[7].

### *4.1 Flows*

We shall clearly distinguish three classes of flows which affect the balance sheet variables discussed above.

Income, *y*, and consumption, *c*, are flows that change a unit's net worth:

$$y_t - c_t = s_t = \Delta nw_t \tag{6}$$

Saving *s* here denotes the difference between all additions and all reductions in net worth during a period. Investment (that is, by definition, a change in the quantity of tangible assets) is hence only a subcategory of saving for any *subset* of economic actors.

Revenues, *r*, and expenditures, *e*, are flows that change a unit's *net* financial assets

$$r_t - e_t = \Delta nfa_t \tag{7}$$

This equation represents a unit's balance of payments, with the current account on the left hand side and the financial account on the right hand side[8].

Payments and receipts are flows that change a unit's stock of money:

$$receipts_t - payments_t = \Delta m_t \tag{8}$$

[6] As noted in Lindner and Reissl (2015), the distinction between *m* and *ofa* will of course be subject to change and context-dependent (for instance, demand deposits are a means of payment in transactions between non-banks but not in transactions between banks). The distinction nevertheless exists and lies at the heart of any liquidity crisis.
[7] Lindner and Reissl (2015) provide a version of the balance mechanics framework incorporating asset price changes. Since this is not required for the argument presented here, we limit ourselves to a simpler version. This is hence closer to the one used by Lindner (2015).
[8] *nfa*, as indicated above, can also change if the price of financial assets changes. As noted, we abstract from changes in asset prices here.

Although these terms are often used interchangeably, it is important to make this distinction. It is possible, for example, for a transaction to give rise to income but no revenue, or a revenue but no receipt, or a receipt but no revenue. For instance, the sale of a financial asset gives rise to a receipt for the seller, but does not generate revenue since net financial assets do not change. This can hence be termed a purely financial transaction. Similarly, if a unit receives a loan, it realises a receipt but its net financial assets are not altered (although they will be altered by interest payments, which is why these, despite the common designation as 'payments', are classified as expenditures). The production of a good generates income, but does not give rise to a revenue until the good is sold. Lindner (2015) and Lindner and Reissl (2015) provide more detailed examples.

### *4.2 Groups and the aggregate economy*

The second element of balance mechanics is the division of the *aggregate* economy, that is, either a closed or the world economy, into a group and a complementary group. A group can be a single firm, a particular sector such as households, or *any* other genuine subset of economic agents as required for the problem at hand. Once a group is defined, its complementary group is the rest of the aggregate economy. It is then possible to formulate sets of statements about relations between groups, complementary groups, and the aggregate economy derived from accounting relations, using a terminology introduced by Stützel (1978):

*Partial statements* are valid for groups, while *global statements* are valid for the aggregate economy. The application of a partial statement to the aggregate economy is very often only possible through the addition of highly restrictive assumptions; otherwise it is an outright fallacy of composition. *Relational statements* describe the behaviour of the complementary group required for a partial statement to be valid for the group considered. In this way, one can avoid the possible pitfalls of drawing conclusions about the aggregate economy from partial relationships.

This approach can be illustrated by considering that, following the above equations, the income during a period t of any *genuine subset* (i.e. group) of economic actors is given by:

$$y_t = c_t + \Delta ta_t + \Delta nfa_t = \tag{9}$$

$$c_t + i_t + \Delta nfa_t = c_t + \Delta nw_t$$

The revenues and expenditures of any group j during a period can obviously differ from each other. For the aggregate economy, however, *realised* revenues and expenditures (but not necessarily payments and receipts, see Lindner (2015, p. 10)) are always exactly equal[9]:

$$0 = \sum_{j=1}^{N} (r_j - e_j)_t = R_t - E_t \tag{10}$$

Similarly, to every financial asset $fa_k$ there is a corresponding liability $l_k$, so that the aggregate economy's net financial assets as well as changes therein are always necessarily equal to zero:

[9] Throughout this article, lower case symbols denote variables pertaining to groups whilst upper case symbols denote variables pertaining to the aggregate economy.

$$(11) \qquad 0 = \sum_{k=1}^{K}(fa_k - l_k) = \sum_{j=1}^{N}(\Delta fa_j - \Delta l_j)_t = \sum_{j=1}^{N}(\Delta nfa_j)_t = FA - L = \Delta FA_t - \Delta L_t$$

Thus, while any group can save financially (*partial statement*) to the extent that the complementary group dissaves financially (*relational statement*), the aggregate economy *cannot* save financially (*global statement*), i.e. in the form of financial assets[10].

Using our definition of income for subsets derived above (equation 9) and aggregating, the aggregate economy's income is hence equal to its production during the period under examination:

$$(12) \qquad \sum_{j=1}^{N}(y_j)_t = Y_t = \sum_{j=1}^{N}(c_j)_t + \sum_{j=1}^{N}(i_j)_t + \sum_{j=1}^{N}(\Delta nfa_j)_t =$$
$$C_t + I_t + 0 = C_t + \Delta TA_t$$

Having introduced and illustrated the basic features of the balance mechanics approach, we now begin with an examination of Keen's article and develop the framework further as required for this.

## 5. Endogenous money and effective demand

Keen (2014a) begins the substantive part of his argument by constructing a set of equations describing the aggregate consumption expenditures of workers and those of capitalists, as well as investment expenditures. The volume of each of these aggregates is taken to be determined by the sum of the previous period's income (divided into wages, distributed profits, and retained profits) plus the "turnover" (Keen, 2014a, p. 277) of newly created debt *to the banking sector*[11]. For instance, the consumption expenditure of workers is here equal to the previous period's wages plus the sum of their newly incurred bank debt used for consumption expenditures times a turnover or velocity variable. Beyond the problem already noted by Palley (i.e. all sectors always spend the same amount unless debt changes), there is a more fundamental issue arising here. The velocity variables are introduced by Keen since after any sum borrowed is spent "it continues to circulate and therefore can be spent again" (ibid.).

However, any means of payment corresponding to wages (or distributed profits, or retained earnings) are apparently, in addition to being invariably spent in their entirety, only spent once (since there is no separate velocity variable attached to them). This is so since, according to Keen, changes in the velocity of *pre-existing* money balances are a "second-order process" (ibid.). In what way money balances newly created by bank lending are fundamentally different from pre-existing ones in this respect does not become clear.

[10] This argument is presented at greater length and expanded upon in Lindner's (2015) critique of the loanable funds model.
[11] Hence, the velocity variable may be defined as giving the amount of additional expenditure generated by an increase of the stock of bank debt by one currency unit.

In fact, Keen claims in section 9 of his paper that the velocity of debt variable is identical to the velocity of money. He argues that this follows from endogenous money theory, according to which "in a pure credit economy, the amount of money [...] is the initial amount (created by fiat) plus the current level of debt" (ibid. p. 283). Endogenous money theory implies no such proposition. While it indeed argues that all money is debt, it *does not* argue that all debt is money (Gardiner, 2004). The confusion arises since Keen appears to treat the terms 'debt' and 'bank debt' as equivalent. When a commercial bank extends a loan, it simultaneously creates a deposit, which is a liability of the bank to the non-bank sector. This becomes part of the money supply and thus increases the stock of means of payment. In this sense, then, bank debt is indeed money. However, there clearly are types of debt, even in a pure credit economy, which are not monetised, i.e. not generally accepted as means of payment (corporate bonds being one example). Keen even appears to recognise this at an earlier point in his paper (ibid., p. 278) but makes the argument here regardless.

Although the two variables are claimed to be identical, the velocity of existing money balances is dropped from his equation whilst the velocity of newly created money balances ('debt') is taken to determine changes in demand. This consequently entails the implicit assumptions that a) all pre-existing money balances are spent precisely once per period and are neither saved nor lent out and that b) therefore all newly created debt *must be* to the banking sector. These assumptions enable Keen to derive the proposition that any change in effective demand is equal to the "turnover of new [*bank*] debt" (ibid.). This reveals a more general problem with Keen's endeavours, namely that the need to make behavioural assumptions contradicts his previously stated intention to derive a 'law' or accounting identity[12]. An identity must hold regardless of which assumptions are made about the behaviour of agents. Of course, Keen not only wishes to construct an identity, but also wants to show that within this relation, causality runs in a particular direction, with this being implied by the time-subscripts in equation (1). This may explain why Keen appears to be going back and forth between building models using behavioural assumptions and redefining accounting concepts (see section 5.2). It will be shown below that there are cases in which Keen's equation does not hold.

### *5.1 Balance Mechanics and changes in gross debt*

We now draw upon the accounting relationships developed above to show why equation (1 or any version of it appearing in Keen (2014a)) is problematic. We shall extend the balance mechanics framework and use it to construct two sample cases which show that Keen's equation does not hold under all circumstances and that where it does hold, this is due to variations in the velocity variable. While the velocity variable often, but not always, saves the equation from returning an incorrect result, it is a theoretically empty concept which renders the relation devoid of informational content. If its value can only be identified in a tautological fashion (Lavoie, 2014b), it is difficult to see what the purpose of the theory should be, since it then can be neither prediction nor the explanation of observed phenomena[13].

[12] For instance, in the abstract to the *ROKE* paper, Keen writes that he aims to replace "the accounting truism that ex post expenditure equals ex post income with the endogenous money insight that ex post expenditure equals ex ante income plus the ex post turnover of new debt" (Keen, 2014a, p. 271). In other works, this proposition has been termed the 'Walras-Schumpeter-Minsky *Law*' (e.g. in Keen, 2011b, 2012a,b), suggesting that Keen does not merely wish to show that it is *possible* for economies to be debt-driven, but rather that his proposition will hold good under all circumstances.

[13] To simply state ex-post that the velocity has changed does not constitute a satisfactory explanation of changes in effective demand since Keen does not provide a theory of what governs changes in velocity. Changes therein could thus always be invoked in order to immunise the theory from criticism (Albert, 2012).

*5.1.1 Plans and Expectations*

To illustrate the problems with Keen's equation, we first extend the analytical framework presented in section 4. The content of this section is adapted from Lindner and Reissl (2015). An earlier version can be found in Lindner (2015). Section 4 above introduced the division of the aggregate economy into a group and a complementary group. To analyse various phenomena pertaining to the relationship between a group, its complementary group, and the aggregate economy, an excess notional demand/supply framework can be used. This is inspired by Myrdal's work on monetary equilibrium (see e.g. Myrdal, 2005) as well as Shackle's discussion of Keynesian "kaleido-statics" (Shackle, 1965) and bears resemblance to Patinkin's (1958) excess demand/supply framework.

Abstracting from taxes and transfers, revenues and expenditures during a period consist of spending on goods and services, *including* the purchase and sale of pre-existing stocks of goods, that is, tangible assets, such as inventories or real estate, P*Q & $P_{TA}$*$Q_{TA}$, labour services, measured (for example) in hours of employment *EMP*, where *W* is the wage, W*EMP, as well as interest payments on pre-existing financial assets and liabilities, INT*FV , where *FV* stands for face value and *INT* is the interest rate. While *realised* aggregate expenditures are necessarily equal to *realised* aggregate revenues, planned aggregate expenditures can obviously differ from expected aggregate revenues. With $R_{exp}$ and $E_{pl}$ denoting expected aggregate revenues and planned aggregate expenditures respectively, we can write:

$$
\begin{aligned}
&(R^{exp} - E^{pl})_t = \\
&(P * (Q^s - Q^d) + W * (EMP^s - EMP^d) + \\
&Int * (FV_{FA,t-1} - FV_{L,t-1}) + P_{TA} * (Q^s_{TA} - Q^d_{TA}))_t = \\
&\Delta NFA^{pl/exp}_t
\end{aligned}
\tag{13}
$$

The above equation shows aggregated planned/expected current account transactions. A similar equation can be formulated for financial account transactions. $\Delta NFA^{pl/exp}_t$ is equal to the *sum* of the planned/expected change in the stock of means of payment held and the difference between the planned/expected change in the quantity of other financial assets and liabilities:

$$
\Delta NFA^{pl/exp}_t = \Delta M^{pl/exp}_t + \Delta OFA^{pl/exp}_t - \Delta L^{pl/exp}_t \tag{14}
$$

Equation 14 contains all planned/expected financial account transactions, including those required to finance planned/expected current account transactions. The excess notional demand functions in the financial and current account can then be combined as follows:

$$
\begin{aligned}
&\Delta NFA_t^{pl/exp} = (R^{exp} - E^{pl})_t = \\
&(P * (Q^s - Q^d) + W * (EMP^s - EMP^d) + \\
&Int * (FV_{FA,t-1} - FV_{L,t-1}) + P_{TA} * (Q_{TA}^s - Q_{TA}^d))_t = \\
&\Delta M_t^{pl/exp} + \Delta OFA_t^{pl/exp} - \Delta L_t^{pl/exp}
\end{aligned} \tag{15}
$$

While this equation refers to the aggregate economy, a similar one can be formulated for any group. However, while any group can actually realise, *ex-post*, a planned/ expected change in its net financial assets (*partial statement*), provided that the complementary group incurs an opposite change of equal absolute magnitude (*relational statement*), this is not the case for the aggregate economy (*global statement*). If the plans and expectations expressed in equation (15) are consistent with each other when aggregated in that there is no aggregate planned/expected current account deficit/surplus, the economy is in a condition of what Stützel (1979, pp. 153-159) called "circular flow equilibrium", akin to Keynesian "expectational equilibrium" as described by Shackle (1965). It can prevail only if and as long as agents' expectations are congruent. To analyse the possible reactions to *incongruities* between plans/expectations, behavioural assumptions are required, meaning that we must go beyond "pure" balance mechanics. Using this framework we can then examine the movements of effective demand and the aggregate level of debt in various possible scenarios.

*5.1.2 Effective demand and changes in debt*

One of the most important characteristics of money from a balance mechanical perspective is that it is a medium allowing groups to run expenditure or revenue surpluses (Stützel, 1979, p.181)[14]. Consequently, if a group plans to make expenditures exceeding its expected revenues[15], either existing stocks of money in the group's possession have to be earmarked for this purpose, or the group will have to go into debt to a third party to acquire the necessary *m*. For the purpose of illustrating the problem with Keen's equation, we shall assume that our economy can be divided into two groups; one which holds an existing stock of means of payment sufficient to finance any planned expenditure surpluses (*group 1*)[16], and one which, ex-ante, would have to borrow *from a banking sector* (in keeping with Keen), which for this purpose can be part of either group, to acquire m (*group 2*).

Consider a case in which one of the groups a) expects its revenues from the sale of currently produced goods and services during the period under examination to be constant relative to the previous period and b) plans to make expenditures on such goods and services in excess of these expected revenues and also in excess of expenditures thereon realised during the previous period. The other group plans expenditures on current output equal to its revenues realised on current output in the previous period and expects its revenues on current output to be constant relative to the previous period.
It is necessary to focus on expenditures on and revenues from goods and services produced (or, even more precisely, *value added*) during the period under examination since we wish to

[14] Of course, it is not the only medium capable of so doing. One can also run an expenditure surplus if the counterparty/counterparties in the respective transaction(s) are prepared to grant some form of trade credit.
[15] Under the assumption that the amount of direct trade credit available is negligible.
[16] In a fiat money system, there will of course be a stock of liabilities somewhere in the system corresponding to this amount.

examine links between changes in debt and effective demand. A definition of effective demand should only include expenditures upon items contributing to current aggregate income. *Aggregate* income would not arise, for instance, from sales of pre-existing goods (tangible assets) since, strictly speaking, the aggregate income is generated by *production* rather than exchange. Since Keen only focuses on the determination of the magnitude of effective demand itself, and not on how precisely changes therein translate into changes in aggregate income, we can largely avoid this issue, a detailed discussion of which would go beyond the scope of this article[17]. Hence, when we speak of expenditures, revenues, expenditure surpluses or revenue surpluses in this section these terms should be taken to mean expenditures on/revenues from currently produced goods and services. Aggregate expenditures on such goods and services may be termed effective demand for our purposes[18]. $Y_{t-1}$ in equation (1) is taken to be equal to the previous period's effective demand thus defined.

We can then write for one group (regardless of whether it is group 1 or 2):

$$\Delta nfa_t^{pl/exp} < 0 = (r^{exp} - e^{pl})_t = \Delta m_t^{pl/exp} + \Delta ofa_t^{pl/exp} - \Delta l_t^{pl/exp} \tag{16}$$

and for the other group:

$$\Delta nfa_t^{pl/exp} = (r^{exp} - e^{pl})_t = 0 = \Delta m_t^{pl/exp} + \Delta ofa_t^{pl/exp} - \Delta l_t^{pl/exp} \tag{17}$$

This means that in the aggregate, plans to reduce *nfa* outweigh plans to increase *nfa*, leading to an aggregate planned current account deficit:

$$\Delta NFA_t^{pl/exp} < 0 = (R^{exp} - E^{pl})_t = \Delta M_t^{pl/exp} + \Delta OFA_t^{pl/exp} - \Delta L_t^{pl/exp} \tag{18}$$

If the group holding means of payment (group 1) is the one planning a current account deficit, it plans to finance this by reducing its stock of *m*. If the other group (group 2) is the one planning to run a deficit, it plans a change in liabilities by the amount of borrowing expected to be required, while the change in its stock of money arising therefrom and the planned change in *m* for running its current account deficit cancel out.

As established above, the aggregate economy cannot realise a current account deficit and hence the *realised ΔNFA* must *always* be zero. While it is clear that the individual units'/groups' plans as set out above are incongruent in the aggregate (since $\Delta NFA^{pl/exp} \neq 0$), without additional assumptions, the framework does not allow one to predict what the

[17] For some views on this matter see Hartwig (2002) and Allain et al. (2013).
[18] Strictly speaking, the examples which follow assume that no revenue or expenditure surpluses on 'non-effective demand items' are realised. While this assumption is undoubtedly highly unrealistic, it allows us to pinpoint very precisely the problem with Keen's hypothesis

consequences of this will be. The framework does, however, give the possibility of examining various possible outcomes. We shall consider two simple cases.

***Case 1***

Consider the case in which group 1 successfully realises an expenditure surplus[19] (as well as, by assumption, current expenditures in excess of previous expenditures), which implies that group 2 necessarily realises a revenue surplus of the exact same size:

$$(\Delta nfa_1)_t = (r_1 - e_1)_t < 0 \tag{19}$$

$$(\Delta nfa_2)_t = (r_2 - e_2)_t > 0 \tag{20}$$

$$|\Delta nfa_1|_t = |\Delta nfa_2|_t \tag{21}$$

Cet. par. group 1's *nfa* will fall by the amount of its expenditure surplus while group 2's *nfa* will increase by that amount. By assumption, group 1 finances its expenditure surplus by depleting its pre-existing stocks of *m*. Consequently, group 2 finds that its holdings of *m* have increased. The absolute amount of debt does not change as a consequence of the realised current account balances. By assumption, aggregate expenditures (here = effective demand) have risen relative to the previous period, and so, therefore, have aggregate revenues. At the same time, however, the level of gross debt has not changed so that the term *ΔD* in equation (1), which is equivalent to our term *ΔL*, is zero. Hence, even if the velocity variable became arbitrarily large, Keen's equation would show that effective demand had not changed at all and would hence predict that aggregate income should remain constant. Table 1 summarises these results[20].

Quite apart from these considerations, debt could also just as well decrease if group 2 uses the *m* to pay off any pre-existing debt that it might have, or if the *m* is transferred back to group 1 through some purely financial transaction (that is, a transaction which only affects the financial account, e.g. the sale of a pre-existing financial asset) and consequently used by that group reduce any pre-existing debt that it might have. Debt could, of course, also *increase* if it is incurred to finance any other financial account transactions which may take place. All of these effects would be picked up by variations in Keen's velocity variable (in the possible case where debt decreases but effective demand rises, the velocity would have to become negative).

[19] We choose this example case since it is well suited for showing the problematic nature of Keen's equation. More generally there is of course no necessary relationship whatsoever in the aggregate between the size of any revenue or expenditure *surpluses* and the volume or growth of effective demand, as Stützel (1979) demonstrates at length.
[20] Note that the first three rows show changes in the magnitude of flows relative to the preceding period, whereas the last three rows show changes in stocks, i.e. flows, without reference to the previous period. For the last three rows, the magnitude of the flow in the preceding period is of no consequence.

| Table 1 | | | |
|---|---|---|---|
| | Group 1 | Group 2 | Aggregate Economy |
| Change in revenues | $r_t^1 - r_{t-1}^1 = 0$ | $r_t^2 - r_{t-1}^2 > 0$ | $R_t - R_{t-1} > 0$ |
| Change in expenditures | $e_t^1 - e_{t-1}^1 > 0$ | $e_t^2 - e_{t-1}^2 = 0$ | $E_t - E_{t-1} > 0$ |
| Change in effective demand | $AD_t^1 - AD_{t-1}^1 > 0$ | $AD_t^2 - AD_{t-1}^2 = 0$ | $AD_t - AD_{t-1} > 0$ |
| Change in debt | $\Delta d_t^1 = 0$ | $\Delta d_t^2 = 0$ | $\Delta D_t = 0$ |
| Change in net financial assets | $\Delta nfa_t^1 < 0$ | $\Delta nfa_t^2 > 0$ | $\Delta NFA_t = 0$ |
| Change in means of payment | $\Delta m_t^1 < 0$ | $\Delta m_t^2 > 0$ | $\Delta M_t = 0$ |

***Case 2***

Another possible case is that in which it is group 2 that plans and realises an expenditure surplus, i.e. the precise opposite from the situation depicted in equations (19) and (20). By assumption, group 2 has to borrow from the banking sector (increase its liabilities *l*) to acquire the *m* necessary to finance its current account deficit. Group 1 sees an increase in its *nfa* and receives the *m* borrowed by group 2. If group 1 simply holds the additional money and no other transactions of any kind take place, our analysis ends here. In this case, the absolute level of debt has increased by an amount equal to group 2's expenditure surplus. Effective demand has increased as well. This result, summarised in table 2, appears to be in line with Keen's argument at first sight.

However, if group 1 uses all the acquired *m* to decrease its own debt (if it has any), overall debt will not change by the full amount of the expenditure surplus or even not at all. The same outcome will occur if the *m* is transferred back to group 2 in a purely financial transaction and then used by that group to pay off the debt just incurred[21]. On the other hand, absolute levels of debt could also increase through purely financial transactions by a far greater magnitude than group 2's expenditure surplus while the changes in *nfa* for both groups remain the same. Again, all these possible contingencies would, if they obtained, be reflected in fluctuations of the velocity variable.

[21] Recall that the two groups as we have defined them are not assumed to be in any way homogeneous, so that this possibility is not as unlikely as it may appear.

| Table 2 | | | |
|---|---|---|---|
| | Group 1 | Group 2 | Aggregate Economy |
| Change in revenues | $r_t^1 - r_{t-1}^1 > 0$ | $r_t^2 - r_{t-1}^2 = 0$ | $R_t - R_{t-1} > 0$ |
| Change in expenditures | $e_t^1 - e_{t-1}^1 = 0$ | $e_t^2 - e_{t-1}^2 > 0$ | $E_t - E_{t-1} > 0$ |
| Change in effective demand | $AD_t^1 - AD_{t-1}^1 = 0$ | $AD_t^2 - AD_{t-1}^2 > 0$ | $AD_t - AD_{t-1} > 0$ |
| Change in debt | $\Delta d_t^1 = 0$ | $\Delta d_t^2 > 0$ | $\Delta D_t > 0$ |
| Change in net financial assets | $\Delta nfa_t^1 > 0$ | $\Delta nfa_t^2 < 0$ | $\Delta NFA_t = 0$ |
| Change in means of payment | $\Delta m_t^1 > 0$ | $\Delta m_t^2 = 0$ | $\Delta M_t > 0$ |

**Implications**

The conclusion to be drawn from the analysis above is that in the aggregate, changes in absolute levels of debt bear *no strictly necessary* relationship whatsoever to the level of effective demand. We have identified one case in which Keen's equation does not hold. In the other, it only does so through variations in the velocity variable. However, Keen's paper contains no theory of how this variable is determined. Indeed, it would be surprising if it did since, being a concept similar to the velocity of money, Stützel's criticism of the latter applies to the 'velocity of debt'. It is worth quoting from Stützel's (1978, p. 236) discussion of the velocity of money in a credit economy (own translation)[22]:

> "[...] it is not apparent how one should conceive of a 'velocity' of means of payment under such circumstances - since there is no fixed supply of means of payment which change hands more or less often. The means of payment are there rather created ad hoc, and disappear again soon thereafter. 'Change of hands' or 'frequency of use' – all this presupposes an object which exists in the one hand and still exists in the other, an object which before and after use is identical. [...] [The concept] breaks down precisely in those cases in which we are most in need of clear monetary theoretic foundations, namely when stocks of means of payment change through monetisation and demonetisation of financial assets."

It may be possible to measure the values of the other variables appearing in Keen's equation and to label the residual the "velocity" of debt, but any insight gained therefrom will be minimal. The difficulty is that in contrast to net debt, gross debt can in principle always be reduced through an equal reduction of assets (although note the complications potentially arising from the paradox of liquidity (Lindner and Reissl, 2015; Dow, 1987)) and can also theoretically increase without bounds without directly affecting net debt. The distinction

[22] A worthwhile and more general discussion of what Stützel terms the "naive quantity theory" of money can be found in Stützel (1979, Ch. 4).

between debt incurred for the purpose of making expenditures in excess of revenues and all other changes in debt is necessarily artificial and the magnitude of changes in debt per period is not sufficiently determined by the size of planned and/or realised expenditure surpluses. In this sense, debt is merely a residual[23], and ex-post changes in the absolute level of debt allow no conclusions about the likely volume or growth of effective demand (and, by extension, aggregate income) or even about whether expenditure or revenue surpluses have occurred and to which extent. This is not to imply that changes in debt cannot have an influence on effective demand or aggregate income. Rather, what it implies is that a 'black box'-type-relation is unable to capture this notion other than, at best, in a tautological fashion. Keen has demonstrated (e.g. Keen, 2014d) that it is perfectly possible to construct models in which there is a stable link between debt and effective demand. However, it was demonstrated above that while changes in debt may well closely correspond to changes in effective demand, this is not necessarily so from a pure accounting perspective. Keen appears to recognise this in section 10 of his paper, but attempts to navigate around the problem in a questionable fashion.

### *5.2 Keen's inclusion of "speculation" in financial assets*

The previous section demonstrated that it is not possible to determine movements in the aggregate level of indebtedness from changes in effective demand alone. Keen appears to acknowledge this in section 10 of his paper when he writes that "by far the major use of credit creation today is to fund speculation in the FIRE [finance, insurance and real estate] sector" (Keen, 2014a, p. 284). He attempts to rectify this problem by claiming that a purchase of financial assets should be classified as an expenditure and be counted as part of effective demand. In section 4 of this article, we set out to define very carefully what is meant by the term "expenditure", as distinct from "payment" and "consumption". It is a transaction which alters the net financial assets of the unit undertaking it. This is surely a reasonable and uncontroversial definition.

Keen's redefinition would mean to effectively eliminate the accounting distinction between financial assets on the one hand and non-financial assets, goods, and services on the other, since the purchase or sale of either would have to be recorded as a current account transaction if it gave rise to revenue/expenditure. This appears to be a rather arbitrary redefinition of terms particularly as it still does not establish a link between debt and *effective demand*, properly defined as a variable which determines aggregate income. This point is also made by Fiebiger (2014), but it is worth elaborating upon. *Aggregate* income would still be equal to aggregate production and a change in the number of purchases and sales of existing financial assets, although under this redefinition giving rise to expenditures and revenues, would not *in and of itself* have any influence on aggregate income. Keen, however, appears to make precisely this claim, given that total expenditure is now taken to include 'expenditures' on financial assets, but that this sum still appears to correspond to effective demand in that the level of these expenditures is taken to *determine* aggregate income.

The root of this problem is an insufficient distinction between income and revenues, as becomes clear in section 12 of Keen's paper. All he demonstrates is that a debt-financed increase in (redefined) aggregate expenditure gives rise to an equal amount of (redefined) revenue. Indeed, it is claimed that the volume of expenditures per period is *equal* to income during that period, a proposition that is surely not generally true (as is also noted by Stützel,

[23] Which does not mean that debt levels cannot grow to excessive levels.

1979, p.274)[24]. For instance, in a hypothetical economy in which units only produce for their own consumption and investment, or even in one where trade is exclusively conducted through barter, aggregate income would differ from zero, since it would be equal to that economy's production, whilst revenues/expenditures would be nil. In a modern monetary production economy, on the other hand, total gross expenditures and revenues recorded over a period would be expected to be substantially greater than aggregate income, given that the purchase and sale of, for example, intermediate goods also gives rise to expenditures and revenues. Keen's redefinition would sever the link between effective demand and aggregate income which is a basic characteristic of post-Keynesian economics. The next section will show that the lack of terminological clarity in Keen's article stems in part from his interpretation of Minsky's work.

### *5.3 Keen's reading of Minsky*

Keen states that several authors held positions similar to his own. He lists Pigou, Schumpeter and Minsky, drawing in particular on the work of the latter to formulate his own argument. For his derivation of the hypothesis from Minsky, Keen mainly relies on the former's earlier work, especially the article *Can "It" Happen Again?* (originally published in 1963 and reprinted as chapter 1 in Minsky, 1982) and the book *John Maynard Keynes* (1975/2008).

He begins by quoting from Minsky (1982, Ch. 1). There, Minsky derives a condition that is equivalent to the one developed above, namely that *realised* sectoral financial balances necessarily have to sum to zero (i.e. $\Delta NFA_t = 0$). However, Minsky goes on to state that this must be the outcome of "market processes" (ibid. p. 6) which ensure that this condition is fulfilled and that "ex-ante saving and investment plans are reconciled" (ibid. p. 6). Minsky, as other writers from all schools of thought, interprets the S = I accounting identity as an equilibrium condition that must somehow be 'produced', commonly through changes in interest rates or income depending on the analyst's theoretical outlook. We shall argue that this notion can be misleading.

#### *5.3.1 The Saving-Investment Identity*

Equation (12) above which is reproduced here shows that the income of the aggregate economy is equal to its production:

$$\sum_{j=1}^{N}(y_j)_t = Y_t = \sum_{j=1}^{N}(c_j)_t + \sum_{j=1}^{N}(i_j)_t + \sum_{j=1}^{N}(\Delta nfa_j)_t = \tag{22}$$

$$C_t + I_t + 0 = C_t + \Delta TA_t$$

Drawing on the earlier definition of saving (equation 6) and the recognition that the net worth of the aggregate economy can only change through changes in its stock of tangible assets (equation 11), it follows that:

[24] This is also the reason why our definition of effective demand is more specific than Keen's.

$$C_t + \Delta TA_t = C_t + \Delta NW_t = C_t + S_t \tag{23}$$

$$S_t = \Delta TA_t = I_t \tag{24}$$

These relations imply that, in a macroeconomic sense, investment *is* saving, but also that saving *is* investment. The quantities appearing on the two sides of the S = I equation are two different ways of denoting what is in fact one and the same variable, and not two distinct quantities that through some mechanism come to be equal to each other. It then becomes clear that the identity cannot be an equilibrium condition. To be an equilibrium condition, there would have to be a possibility for it to not hold. In fact, the identity will hold at *any* point in time, regardless of whether or not the current plans of individual economic units are congruent when aggregated. It also holds regardless of how agents behave, and regardless of whether or not expectations are fulfilled (see also Lindner, 2015). Thus, even if, to use more conventional terminology, "planned investment" and "planned saving" differ in magnitude, actual investment and actual macroeconomic saving will be equal at any point in time because they are the same thing[25]. The preceding discussion shows why it is vital to define precisely what is meant by the term 'saving' in any particular context (see also Stützel and Grass, 1988, p. 365). One can easily construct cases in which the *financial saving* of a group is arbitrarily large whilst investment equals zero, or *vice-versa* (Lindner, 2015). This terminological issue in turn besets Keen's interpretation of Minsky's *John Maynard Keynes*.

*5.3.2 Transcending Keynes?*

In the passage from *John Maynard Keynes* (Minsky, 1975/2008, pp. 131-134) quoted by Keen, Minsky constructs "the bare bones of a model" (ibid. p. 133) showing how investment is financed. The formulation, however, is terminologically imprecise. Minsky constructs "budget constraint[s]" (ibid. p. 131) for households and firms, and assumes that some portion of (apparently previously created) household financial savings *in the form of means of payment* m are available to finance investment, that is, presumably, they can be borrowed by firms or acquired through share issues[26]. According to Minsky, any investment exceeding intermediated household (financial) savings has to be financed by "some combination of an increase in the money supply and of a decrease in the money holdings in portfolios, i.e. by an increase in velocity" (Minsky, 1975/2008, p.132)[27]. "Money holdings in porfolios", however, is an imprecise or too general term in this context. It does not become clear what the conceptual distinction between these and financial savings in the form of m is meant to be. The former would comprise *any* money balances held by units, *including* the financial savings in the form of m of *all* sectors, as well as any other money balances acquired through purely financial

[25] Behavioural assumptions are needed to theorise about how units are likely to react to incongruent plans/expectations but these are independent of accounting identities which will hold even if these assumptions do not contain any equilibrating mechanisms.
[26] Keen (2014a, p. 274) notes that any investment exceeding this amount has to be "debt-financed". Why borrowing from households does not create debt he does not say. This is another instance where 'debt' and 'bank debt' are not distinguished.
[27] Note the distinction between Keen's conclusion that bank lending, i.e. an increase in the money supply, is strictly required and Minsky's more nuanced position.

transactions[28]. Minsky uses the concepts of "saving", "money holdings", "household saving", and what would correspond to financial saving in the terminology introduced above without sufficient differentiation.

That the terms "saving" and "household saving" are also treated interchangeably by Keen is shown when he interprets Minsky's statement that "the externally financed investment must exceed the savings of households" (Minsky, 1975/2008, p.133) to mean that "investment therefore [has] to exceed savings" (Keen, 2014a, p. 274), appearing to suggest that the recognition that the volume of aggregate investment can differ from the value of household financial saving in some way contradicts the S = I identity. This becomes clear when he claims that Minsky's work

> "[t]ranscends Keynes on both 'income equals expenditure' and 'savings equal investment', with Keynes's identities applying in the abstraction of equilibrium, but Minsky's applying in the (normally) growing economy in which we actually live." (ibid. p. 275)

It is obvious that Keen treats the saving-investment identity as an equilibrium condition. In addition, he asserts that an economy in equilibrium cannot be growing. However, it is easily seen that the "circular flow equilibrium" presented above does not imply stationarity as Stützel (1978) demonstrates at length in his critique of Walrasian general equilibrium. Even although the economy is unlikely to ever actually be in such an equilibrium, in principle it could be, and at the same time be either growing, shrinking, or stationary as long as expectations are congruent. The S = I identity will hold whether or not the economy is in equilibrium of any description, and regardless of whether or not it is stationary. It says nothing about how investment is financed. Keen may sometimes over interpret the works he utilises as a foundation for his own argument, while these works themselves suffer from terminological imprecisions. These imprecisions can, as demonstrated above, consequently also be found in Keen's own argument.

Keen presents some empirical data to support his argument. Fiebiger (2014) provides an adequate critique of this and all that remains to note is that the evidence cannot resolve the problems raised here, since they are not foremost of an empirical nature. One further issue is that Keen sees his analysis as closely related to the "credit impulse", a concept developed by Michael Biggs (see also Keen, 2011c). This is defined as "the change in new credit issued as a percentage of GDP" (Davies, 2008), and is found to be closely correlated with growth in demand and GDP in many instances (Biggs, Mayer, and Pick, 2010). It should be noted, however, that this concept is developed in the context of a *model* and no claim is made to the effect that it reflects a relationship which necessarily holds or that it contradicts existing economic accounting identities. In this respect, it must be clearly distinguished from Keen's analysis. Keen has since written a rejoinder in which he replies to Palley, Lavoie, and Fiebiger (Keen, forthcoming). This will be published in the October 2015 issue of the *ROKE*.

[28] It is true, however, that a given amount of financial savings in the form of *m* can finance a potentially infinite volume of transactions, provided that the "velocity of circulation" becomes large enough (Lindner, 2015; Stützel, 1979; Wicksell, 1936).

## 6. Summary and conclusion

This article has provided a critique of Steve Keen's argument that effective demand equals income plus the change in debt, drawing upon a framework of analysis derived from the work of Wolfgang Stützel. The framework was applied for the first time to this issue, in the context of an in-depth discussion of Keen's most recent restatement of this proposition (Keen, 2014a).

With regard to the substantive part of Keen's argument, we provided a balance mechanical analysis of the relationship between effective demand and changes in debt, arguing that there is no necessary relationship whatsoever between these variables. Specifically, we made a novel contribution in showing that Professor Keen's proposed relation does not hold under all circumstances, and that it holds in others mainly through the introduction of and variations in the 'velocity of debt'-variable. What is presented in Keen's paper hence does not prove his proposition, in that he does not succeed in deriving a relation which necessarily holds.

Professor Keen's velocity of debt variable, although necessary to (in most cases) prevent his equations from returning an incorrect result, lacks theoretical underpinning and thus its predictive and explanatory value is questionable. We also argued that Keen's redefinition of effective demand to include the purchase of financial assets does not appear fruitful since it severs the link between effective demand and aggregate income which is a key element of post-Keynesian economic analysis.

The debate around Keen's hypothesis has nevertheless raised interesting points. In particular, it would be desirable to obtain empirical evidence on the extent to which (if at all) different types of lending (for instance bank credit on the one hand and non-bank credit on the other, say for consumption or investment purposes) differ in their impacts upon demand and growth. Stockhammer and Wildauer (2015) also note a lack of empirical literature on such issues. However, the existing theoretical framework as well as existing economic accounting identities appear sufficient to accommodate any such evidence. In addition, the debate also serves as a reminder of the importance of definitional clarity in economic arguments and thus recommends the balance mechanics framework as a method to examine both existing and new theories to ensure internal consistency.

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**Author contact:** severin.reissl@googlemail.com

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# Commodities do not produce commodities: a critical review of Sraffa's theory of production and prices

Christian Flamant[1] [France]



**Abstract**
This paper revisits once more Sraffa's well-known book *Production of commodities by means of commodities*, and does so by digging up to its very foundations, i.e. its most basic assumptions regarding the nature of production (section 1). This leads to analyzing the definitions of the different categories of goods appearing in Sraffa's book: basic goods, subsistence goods, consumption goods and fixed capital goods. The paper shows why this classification is wrong. It explains why subsistence goods should not be considered as intermediate goods (section 2), that consumption goods are final goods which are not part of a surplus, and that there is no surplus of intermediate goods (section 3). It shows then that the way Sraffa introduces fixed capital goods through joint production does not allow for the existence of a surplus for this kind of goods (section 4), and leads to several contradictions (section 5). These contradictions entail some serious consequences for the Standard system: neither the definition of basic goods nor the notions of surplus and of Standard commodity can be upheld (section 6). It comes therefore as no surprise that the problems created by the introduction of land or other non-produced means of production cannot be resolved (section 7). As developed in section 8, all these limitations explain why Sraffa's system has remained over the years such a puzzle, on which nothing has been built: in particular the system is incompatible with a Keynesian theory of money. Finally section 9 proposes briefly an alternative view of production as a transformation process.

**Keywords** Sraffa, commodities, fixed capital, price theory, production theory

In 1960, when Sraffa published *Production of commodities by means of commodities*, it was perceived by a number of economists as a kind of theoretical bomb. Indeed it hit a heavy blow to the neo-classical theory of distribution, by showing that in a system with multiple heterogeneous goods it was impossible to define fixed capital as a factor of production of which the marginal productivity was determining the rate of profit. However, doing so implied keeping some assumptions corresponding to the neo-classical paradigm, as regards the very nature of production and of the goods involved in this process, in particular fixed capital. To what extent this was done unknowingly is difficult to say, but this preservation brought about a number of flaws.

After recalling briefly the background of Sraffa's approach, this paper will show how these flaws have emerged from the very beginning of the analysis, because of a blurred definition of production, consumption, and an inaccurate classification of the goods involved in these processes. On this basis, the introduction of fixed capital and of non-produced means of production, like land and natural resources, cannot but lead to various contradictions and inconsistencies, which will then be reviewed.

## 1. Sraffa's approach: production as a circular process

[1] I have a PhD in Economics from the University of Paris I Panthéon-Sorbonne. I retired three years ago, after a career as a country director in the French Development Agency, which involved being seconded for three years to the IMF in Washington (1982-85), and three years to the OECD in Paris (1998-2001).

In Appendix D of *Production of commodities by means of commodities,*[2] Sraffa connects his conception of production to the old classical economists Quesnay and Ricardo who regarded the system of production and consumption as a circular process. He even adds that this conception, which he develops in his book, is 'in striking contrast to the view presented by modern theory, of a one-way avenue that leads from factors of production to consumption goods'.

Sraffa says that his system is a generalization of that of Ricardo wherein wheat is both a factor of production and consumer good, which allows one to define a surplus, irrespective of the values or prices, and to determine the rate of profit regardless of them. In his system, what he calls the basic goods are generally playing the role of wheat, when, through the construction of the standard commodity, they appear in the same proportions in the means of production and the net product, which thus seems to validate his reasoning by generalizing the Ricardo's case to a system with multiple heterogeneous goods.

It was important to start by recalling this, because, as far as science is concerned, the field of validity of a scientific theory is generally constituted by the field delimited by its own assumptions, the first of them consisting in the definition of its concepts. It is also generally admitted that, for a theory to be considered as scientific, there is a need for consistency, both internally and externally. By this we mean that the theory's assumptions must not contradict themselves, which is the internal consistency, and that the assumptions must have a coherent link with the reality which the theory wants to describe, which is the external consistency.

Everybody will certainly acknowledge that the definition of production is a very important assumption, a fundamental one indeed, and in this regard it should normally have appeared, not in an appendix at the very end of *Production of commodities…*, but on the contrary in an introduction, at the very beginning of the book. However, and quite strangely, this is not what Sraffa does. Before starting to analyze his theses, let us state again that for Sraffa production means production of a surplus, and that to be able to compare this surplus to the means of production, there is an absolute need for the commodities to appear both in the means of production and in the surplus, which is therefore a forced corollary to his circular conception of production.

## 2. Production for subsistence

It is difficult to understand why Sraffa put back to the end of his book something as fundamental as his definition of production, but maybe the reason was that he did not want to put it too close to the first chapter of the book, entitled "Production for subsistence", because in this three-page chapter, there is no surplus, which seems completely contradictory to this definition of production. Indeed what Sraffa wants to show is that there can be a price system, even when there is no surplus. But can there be any production? Certainly not by Sraffa's own definition, unless we realize that the title of the chapter means that there is some kind of "individuals" or "producers" behind the scene, which barely survive (subsist), by the consumption of some of the commodities that are produced.

[2] Sraffa, 1960.

Saying that, however, which Sraffa implies when he writes that the system includes "the necessaries for the workers", means that on the left-hand side of the equations (like also on the right-hand side) some of the means of production are in fact consumption goods, or more precisely subsistence consumption goods, i.e. some kind of goods that are just sufficient to allow the "producers" to survive.

However this raises another difficulty, which has to do with the definition of consumption, something which does not appear in Sraffa's book. Let us therefore give a definition, and then discuss it. This definition is borrowed from Wikipedia (French version), and indicates that:

> "…consumption characterizes the act of an economic agent (consumer) that uses (final consumption) or transforms (intermediate consumption) goods and services. This use or transformation causes the immediate (non-durable goods) or progressive (durable goods) destruction of the items consumed. From a general point of view, consumption (value-destroying) opposes production (value-creating)."

This definition is both interesting and misleading. Interesting, because it establishes a distinction between the production process as an intermediate process, involving intermediate goods and services, and final consumption as a final process. But this definition is also misleading, because it tends to consider nevertheless both processes as consumption, since both would cause the destruction (whether productive or final) of the goods involved. The definition introduces however another distinction between final consumption, which "uses", and intermediate consumption, which "transforms".

What we would like to argue is that this distinction is not a subtle one, but a fundamental one, which should lead economists to reserve the use of the word "destruction" for only the goods which are used for final consumption. A good reason for that is in fact given by the very last sentence of this definition, pointing out that consumption, which is value-destroying, opposes production, which is value-creating. It is indeed logical that a process, like final consumption, which causes the immediate or progressive destruction, and in fact the disappearance of the consumption goods involved, be value-destroying, whereas conversely it is not at all logical that a process which is value-creating, like production, would cause the destruction of the intermediate goods involved. On the contrary, and if we want to stay connected to reality, it is easy to recognize that these goods used in the production process are not really destroyed in the sense that they would definitively disappear, because they are only transformed in the course of this process.

These explanations are not esoteric ones, and we do not want to split hairs on this question, but they are necessary in order for the concepts used to have a connection with the real world. In the real world indeed, final consumption is definitely a destruction. This is obvious for all the non-durable goods, like for instance food, for which there is simultaneity between consumption and destruction, this destruction being also a complete disappearance. But this is also the case for durable goods, even if this destruction can be a very long process for certain goods: in the end there is a complete impossibility for such a durable good to continue to be used as it was initially and during its whole life span.

On the contrary, in the case of intermediate goods, like all the raw materials, they most often disappear in the production process in their initial form, but only to reappear under another form at the end of this process, which means literally that they are not destroyed, but only

transformed. This is so because their substance is still there, incorporated in the final goods of which they have become an element or a part. Furthermore, in a value-creating process, it is logical for the value of these intermediate goods not to disappear, but to be transferred to the value of the goods in which they become incorporated.

Evidence of this can be derived from the fact that at the end of the life span of a durable consumption good it is more and more frequent that it can be dismantled and recycled, which allows for many of the raw materials, i.e. the intermediate goods, to reappear and be transformed again in new production processes, where they are reincorporated into new goods. Within the production process itself, there are often some tailings, scraps or residues from these intermediate goods, and most of the time, in particular each time that these intermediate goods are valuable, they do not disappear but are recovered to be put back in the process, rather than being wasted. Therefore the word “destruction" is clearly inappropriate to name what happens to intermediate goods in the course of the production process, since they do not disappear completely, but on the contrary can reappear either during this process or at the end of the life span of the final consumption goods in which they are incorporated. It is only their original shape or form which are partially modified (rather than destroyed), to be transformed into other ones.

All this explains that final consumption goods cannot at all be treated conceptually like intermediate goods, since these last ones are not consumed but only transformed in the production process, and as such are not the object of an “intermediate” or “productive” consumption, but of a productive transformation. Therefore final consumption goods should not in any case be put on the left-hand side of the equations of the production system, which represents what enters into the production process, even if these goods are “means of subsistence”, called also sometimes “wage-goods”.

Let us conclude that the analysis performed in this very first chapter of *Production of commodities by means of commodities*, devoted to “production for subsistence”, is seriously flawed. Indeed there is no surplus, and therefore there should be no production, according to Sraffa’s own definition of production. Even if one thinks that there is a kind of notional surplus, in the form of subsistence goods which would be both on the left and on the right-hand side of the equations, this would be contradictory to the demonstration, which has just been carried out, that consumption goods by their very nature are final goods which come out of the production process and as such can never enter into this process. This should be kept in mind when we now go further into the analysis of *Production of commodities by means of commodities*.

## 3. Production with a surplus

It is a little ironic in this context to observe that it is in the following chapter of *Production of commodities by means of commodities*, entitled “Production with a surplus” that Sraffa writes that the introduction of a surplus makes “the system become self-contradictory”. But this is because the allotment of the surplus, which is supposed to be made by a uniform rate of profit, cannot be determined before the prices, and *vice-versa*. However Sraffa quickly resolves the difficulty by explaining that in fact both are determined simultaneously by the same mechanism.

The interesting thing in this chapter is rather that it shows that the emergence of the surplus has one effect which is the appearance, as part of this surplus, of a new class of products, "which are not used, whether as instruments of production or as articles of subsistence, in the production of others". Sraffa names them "luxury goods".

Building upon the demonstration performed in the previous section, it can immediately be observed that, strictly speaking, this definition of luxury goods applies in fact to all consumption goods. This follows because we have shown that the fact that a consumption good be a subsistence good does not in itself transform it into an intermediate good, which belongs to a totally different category of goods, those that can be put on both sides of the equations representing a production process. It follows from this fact that as far as final consumption goods are concerned, no surplus can be determined as a difference between the quantities of these goods which are on the right-hand side and the quantities supposed – wrongly, to be on left-hand side of the equations.

To be sure, there are some particular goods or services which can be in the same physical form, both means of production in the form of intermediate goods (circulating capital), and final consumer goods. They are mostly fluids (water, energy), or some services. But electricity itself does not produce electricity: we know that this is not its use in the production process that makes it reappear for a larger amount at the end of this process. Even in this not so usual case, the total quantity of this particular kind of goods or services produced during a period totally disappears during the same period either as intermediate consumption or as final consumption, without therefore the apparition of a surplus or net product.

In this respect, and to be more precise, even the example of wheat is misleading, because in the real world wheat in the form of seeds (as an input) is increasingly a processed product which has undergone some treatments, or even has been genetically modified etc., and therefore is different from wheat as a pure consumer product. This last one is itself eaten only after being transformed (conditioned, etc.), and this in a way which makes it a different product from wheat which has just been harvested. Let us also point out that for most agricultural products other than cereals, grains or seeds are in any case very different from harvested products.

Having arrived at this stage, and putting aside fixed capital for the time being, to adhere to Sraffa's approach, we must understand that there is no surplus either for intermediate goods: certainly the quantities of intermediate goods used in the production of these intermediate goods themselves are smaller than the total quantities of these goods which are produced. But it is obviously because the rest of these intermediate goods are used in the production process of final consumption goods or fixed capital. Moreover, in a self-replacing state, where Sraffa repeatedly locates his theory, there cannot be any place for stockpiles of intermediate goods, which are produced in the exact quantities needed for both their own production and the production of final goods. Therefore in a given period the total quantity of each of the intermediate goods which enters the production process, and appears on the left-hand side of all the equations of the production system using this intermediate good, is exactly equal to the quantity which comes out of the system, and appears on the right-hand side of the equation of the industry producing this good in the same system.

## 4. The introduction of fixed capital

To begin with the definition of fixed capital, given at the beginning of Chapter X of *Production of commodities by means of commodities* (§73), Sraffa does not elaborate a lot, and limits itself to writing that:

> "…we shall regard durable instruments of production as part of the annual intake of a process, on the same footing as such means of production (e.g. raw materials) as are entirely used up in the course of the year; while what is left of them at the end of the year will be treated as a portion of the annual joint product of the industry."

There is therefore no doubt that fixed capital is considered in his book as a particular kind, or a sub-species, so-to-say, of intermediate goods, with the only difference that the life of the components of fixed capital is longer than the life of intermediate goods, which disappear (are transformed) in the production process at the same time as they transfer their value to the goods produced. Fixed capital is indeed made of "durable instruments", or machines, which implies that their use in the production process is a progressive one which lasts up to the end of their life span, during which they progressively transfer their value, up to the end of the production process in which they enter. The only difference with circulating capital seems therefore for Sraffa only a question of time, having to do with the longer durability of their life span and therefore of their participation in a production process. If one wonders why time is so important, the only coherent explanation is that the rate of profits is defined not only as a percentage, but as a percentage per unit of time (in fact, the year).

At a conceptual level, it is however extremely confusing to restrict the differences between both types of capital to just this single element of time. Indeed, as we have already pointed out earlier, intermediate goods participate in the production process in such a way as they are effectively and entirely transformed in this process, where they can no longer be found under their initial form at the end of it, because their substance itself has been incorporated in the final goods which they have contributed to produce. In other words they enter into the process, but do not come out of it.

One must immediately recognize that this is not at all the case for fixed capital goods, which in the real world do not participate in the same way in the production process, whatever their durability and independently of the duration of this participation. Indeed fixed capital goods never disappear in the production process, where their true role is not to be incorporated in the structure of final goods, but on the contrary to participate in the transformation of the intermediate goods, which is an extremely different thing. In the real world, the tangible and visible role of fixed capital is not to transfer its value to the products, or to deserve the payment of a profit rate, but to help increase the productivity of the main actor of the production process, which is human labor.

Since the whole treatment of fixed capital by Sraffa is based on the particular question of the age of machines, as we shall see below, it is also important to note that in the real world there is no such thing as a once and for all clearly defined age of a machine, which would remain the same during its whole participation in the production process. In *Production of commodities by means of commodities*, we are clearly at a technical level, but even at this level there is no such thing as a predefined life span or age of whatever machine or piece of

equipment, since this age will depend on many factors, like the intensity of the use of the machine.

A machine working eight hours a day with a single shift obviously will not have the same life span as exactly the same one working 24 hours a day with several shifts. The quality of maintenance, which can vary from a firm to another due to multiple factors, as well as during its own life time, can also greatly alter the real life duration of an equipment. Furthermore most machines are not even used during the whole duration of their nominal life time, for the well-known reason that they quickly become obsolete. New and cheaper or more 'productive' machines are indeed produced each year and after a few years make production with older machines become no longer competitive. Hence the replacement of machines becomes indispensable, even a long time before the day when they would have been worn out. The result is that in the real economic world the composition of a collection of machines and the way they are used vary continuously.

From a theoretical point of view all this is all the more annoying in that the whole treatment of fixed capital by Sraffa, in § 76 of his book, using a method first developed by Torrens[3], consists in establishing a sub-system based on as many equations as there are separate processes which correspond to the successive ages of a given machine. And 'the quantities of means of production, of labor and of the main product are equal in the several processes in accordance, with the assumption of constant efficiency during the life of the machine'. This is hardly compatible with the fact that neither the life span nor the efficiency of a machine can ever be determined at any given point of time.

Nevertheless this is not the main criticism that can be made of the treatment of capital by Sraffa. To consider it, let us recall that for each machine, there is a sub-system having as many equations as the successive ages of this machine, for age 0, 1, 2,...*n*, where *n* is the lifetime of each machine. Each of the *n* equations represents the joint production of good G and of a machine of age 0 to *n*–1 (on the left-hand side) and of age 1 to *n* (on the right hand side). This sub-system covers a whole range of years, as many as the life span of the machine. With a proper treatment, Sraffa then removes *n*–1 equations corresponding to the machines of intermediate ages to finally obtain a single equation containing only the newly-produced machine, of age 0. This equation is the following (see § 76 of the book):

$$M_0 p_{m0} \frac{r(1+r)^n}{(1+r)^n - 1} + (A_g p_a + \ldots + K_g p_k)(1 + r) + L_g w = G_g p_g$$

The first term represents the annual depreciation of the machine, i.e. the value supposed to be transferred by the machine to the final good G for a given year *n*.

However, when we come back to a whole system of production for a single given year, we therefore turn, as Sraffa does in § 83:

> "from the standpoint of the life-progress of a single machine to the stand point of a complete range of *n* similar machines each being one year older than the preceding one, and thus forming a group such as we might find in a self-replacing system. The requirement that the life-sum of the depreciation quotas should be constant and independent of the rate of profits is now

[3] Torrens (1821) see pp. 28-29, where Torrens introduces the notion of "residue of capital".

> embodied in the fact that under all circumstances such a group is maintained simply by bringing in a new machine each year."

All this is quite coherent and means that in this self-replacing production system, we have *n* machines in operation (from age 0 to age *n*–1), with on the left-hand side of the n equations like the one above n different depreciations. As Sraffa clearly demonstrates also, and this demonstration is right, the price of the machines of the intermediate ages can vary with the rate of profits, but for a given rate, as it appears from Figure 6 (in § 83), the sum of these different prices is always equal to the initial value of the machine $p_{m0.}$

Up to now, everything might seem correct, but a problem arises when we realize that, when we come to the calculation of the production prices, we are no longer in the sub-system in which it was innocuous to make appear *n* different machines of age 0 to *n*–1 (the machine of age *n* being withdrawn from the production process). Indeed, in a self-replacing state there is one and only one machine, of age 0, which is produced in a given year, with its own equation representing the conditions of its production. In this equation the quantity of the machine $M_0$ of age 0 (since it is new) appears on the right-hand side. And for a good G, and/or any other good in the production process of which this machine is used, including its own, there are in total as many equations for each good as the number of years *n* corresponding to the life span of this machine $M_0$.

Turning now to the way this whole system works, on the left-hand side of each of these equations there is a value

$$M_0 p_{m0} \frac{r(1+r)^n}{(1+r)^n - 1},$$

which represents the contribution to production or the "transfer of value" of these machines of age 0 to *n*–1 to the price of the goods that they help produce. We also know that the sum of these depreciations is $M_0 p_{m0.}$ But we are now in the real system itself, where only new machines of age 0 are really produced each year, each of them with its equation of production, and no longer in the sub-system where there was joint production of the machines of various ages. This implies that there are no equations corresponding to the real production of machines from age 1 to *n*, because these machines have in fact been produced previously, in earlier periods. This means that on the right-hand side of all these equations these machines of age 1 to *n* cannot and do not appear.

The interesting thing is that, as a consequence of this situation, and for the whole production system, when we sum up all the equations in which a machine Mo appears, we have on the left hand-side a value $M_0 p_{m0}$ corresponding to the sum of the depreciations, and on the right hand side exactly the same value $M_0 p_{m0}$ of the newly produced machine $M_{0.}$ This signifies clearly that, whatever the life span of the machines, in a self-replacing state the value of the quantity of the machines which is produced in each period corresponds exactly to the quantity which is supposed to "disappear" in the production process, where this value is supposed to be transferred to the value of the goods that they contribute to produce, to the tune of the total depreciation affecting the same machines of various ages.
The inescapable conclusion of this analysis is that there is no such thing as a surplus for the machine M, nor for any machine, since the demonstration performed so far can obviously be generalized. Although all this can easily be understood intuitively, since in a self-replacing

state there is no net production of fixed capital, but only its replacement, we have therefore analytically established a very important result: in the Sraffa system, and as long as the fixed capital is supposed to transfer its value to the goods produced, **there is no surplus of fixed capital**. This means reciprocally that, supposing that there is a surplus, it cannot include any capital good.

## 5. The contradictions of Sraffa's system with fixed capital

At the point where we have arrived, we cannot but observe that we face a double contradiction: indeed Sraffa defines production as a circular process (meaning that what comes out of the process also enters or rather re-enters into it) through which a surplus is created.

However, what is to some extent circular in the production process, as exposed in *Production of commodities…*, is the production of intermediate goods and fixed capital, this last one being assimilated to a particular type of intermediate good with a span of life longer than the production period, because both are supposed to enter into and come out of the same production process. This explains why they appear on both sides of the equations describing this process. But at the same time, in a self-replacing state, where the whole Sraffa system is located, and as we have already showed, there is no such thing as a surplus of either intermediate goods or fixed capital, because fixed capital is itself a kind of intermediate good, and therefore there should be no production according to Sraffa's definition.

As for consumption goods, we have already showed that these goods do not enter into the production process, but are destroyed (either instantaneously or more or less quickly, if they are durable) in the consumption process. It is clear therefore that there is no circular production process concerning consumption goods. However, since these consumption goods cannot be found on the left-hand side of the equations describing the process, but appear necessarily on the right-hand side, the difference between both sides, for consumption goods only, is necessarily made of the whole production of these consumption goods. One might possibly say that it constitutes a "surplus", although it would be an artificial one, because for the process as a whole the quantities of intermediate goods should normally be deducted from this "surplus", in order to obtain the true surplus of the system. But this is obviously impossible, because of the heterogeneity of the goods on both sides of the equations.

This brings us to a paradox: it is the Standard net product which has to be divided between wages and profits, but because what might be called a surplus, and constitutes this net product, is made only of consumption goods, then these profits should be devoted entirely to buying consumption goods! More importantly, this obviously contradicts the statement made by Sraffa (at the end of § 29), according to which "the rate of profits in the Standard system thus appears as a ratio between quantities of commodities irrespective of their price". Indeed there is no such thing as a ratio between consumption goods and intermediate goods!

Another contradiction comes from the fact that Sraffa's system is built in such a way that:

> "…the ratio of the net product to the means of production would remain the same whatever variation occurred in the division of the net product between

wages and profits and whatever the consequent price changes" (see § 28 of *Production of commodities* …).

But, even with all other parameters remaining unchanged, if the rate of profit changes from one period to another during one of the n periods corresponding to the life span of a machine, the depreciations in the value of this machine already registered during the preceding periods will naturally remain unchanged, but the amount of the depreciations that will take place in the following periods, after the change in the rate of profit, will also change. It follows that the sum of the n depreciations for a given machine will no longer be equal to the value of the machine, but will be lower or higher.

The same phenomenon would take place each time that the actual life span of a given machine would become shorter or longer than the original or nominal one. In both cases, either because of a change in the rate of profit or in the real life span of a machine, the resulting change in the overall amount of the depreciations will change the proportions in which the machine enters in the production process, and therefore the nature of the Standard system and the whole price system! This is indeed not compatible with Sraffa's system.

Before going further, let us go back to the definition of fixed capital as a kind of "long life" variety of intermediate goods, since we can now better realize that this vision is incorrect. Indeed what appeared on the left hand side of the equations, and that we did not questioned, has to be revisited, since it is clear that it was not the machine itself, but a purely virtual element, i.e. its depreciation, which varies, as Sraffa explains, both with the age of the machine and with the rate of profit. The only thing which does not vary, as we already pointed out, is the sum of the depreciations for the n machines of age 0 to $n$–1 in operation for a given period, which is always equal to $p_{m0}$ but only for a given rate of profit. This virtual quantity introduces an irreducible element of heterogeneity with the other intermediate goods: although they disappear in the process in their initial form, but only to be transformed, intermediate goods enter into it as real goods, and not virtual ones.

## 6. The consequences for the Standard system

### *6.1 The notion of basic goods*

An important conclusion that we can draw from these observations is that most goods are not basic goods, whose main property, as defined by Sraffa in § 6 of *Production of commodities…* is that they "…enter (whether directly or indirectly), in the production of all commodities". Indeed, since these goods are also produced, it means that one has to find them both on the left and right-hand side of the equations defining the system of production. We have showed that consumption goods do not meet this criterion, but at this stage we must admit that it is also the case for fixed capital goods. Indeed it is not these goods themselves, but only their depreciation that enters into the production process, and this depreciation, as defined by Sraffa, is not a tangible element, which can be put on the left-hand side of the equations in a non-contradictory manner. From this we must derive that fixed capital goods have to be considered as final goods, which like consumption goods can be found on the right-hand side, but not on the left-hand side of the equations.
In fact this corresponds to the treatment applied to depreciation by Keynes, who devotes the whole appendix of Chapter 6 of the *General Theory* to the question of what he calls "user cost". He defines the user cost "…as the reduction in the value of the equipment due to using

it as compared with not using it", and indicates that aggregate income, equivalent to aggregate supply price, is equal to A – U, or "as being net of aggregate user cost"[4]. It is clear that this user cost is quite similar to what Sraffa calls "the annual charge to be paid for interest and depreciation" for a machine, and that as we have seen, unlike Keynes, he includes wrongly in the production cost.

As a result, the only goods that can be found on both sides of the equations are clearly the intermediate goods, strictly defined as goods that disappear (in the sense only of being transformed) within the production process, where they can be used in the production of any other good (final or intermediate) as well as in their own production (directly or indirectly). They are thus the only goods that can be called basics in the sense that Sraffa gives to this word. There is however no reason why there should be any surplus of these intermediate goods, which are produced for each of them in the same total quantity as the sum of the quantities used in all the various industries, as Sraffa calls them.

### *6.2 The notion of surplus*

To be sure, some particular goods might prima facie be considered as basic goods, with an amount produced even greater than the amount used as an input (ignoring the differences already mentioned between their nature as an input and as an output). This is the case of some agricultural products. But it is because there is a biological mechanism of organic production which as such does not come obviously from spontaneous generation, but precisely from the transformation of elementary goods, free or not. Indeed, using Lavoisier's formula, who has no reason to be false in economy, "nothing is lost, nothing is created, everything is transformed." These elementary goods are the oxygen and carbon in the air, nitrogen, potassium and phosphorus in soils, among others, which thanks to the biological mechanism of photosynthesis (among other processes at work), allow to harvest some agricultural products in higher quantities than those which have been sown. But in terms of material balance, the overall process is balanced, and it cannot logically be otherwise.

The same thing is true for production in its economic sense. Even for agricultural products, apart from the part that is self-consumed by small individual producers, products sold on the market for final consumption are not formally those harvested, because they have passed through various successive stages of preparation, packaging and transportation, which make them different from those goods which have been harvested, so that for them the concept of the surplus as a difference is not appropriate. As for mineral raw materials, it is clear that there can no more be any surplus in the form of any directly consumable good for any ore whatsoever.

These observations have an important consequence on the very nature of what can be called a surplus. They do not prevent from considering that production is a circular process, at least for the goods that are part of the rightly-named "circulating capital". In their case, one could even imagine that there is a surplus, but that would only be true for the subsystem, necessarily incomplete, which produces the circulating capital with circulating capital, since only a portion of the circulating capital is used in its own production process.

However, at the level of the production system as a whole, all the circulating capital is used: the portion that is not directly used for the production of the circulating capital itself obviously

[4] Keynes, 1936. See Appendix on user cost in Chapter 6: The Definition of Income, Saving and Investment.

enters in the production of final goods: consumer goods and fixed capital. And this circulating capital is always fully utilized: even in the case of expanded reproduction, the circulating capital produced in excess during a period compared to that produced during the previous period is fully used in the increased production of various goods, be they intermediate or final, during this same period. Indeed production prices are actually reproduction prices, which concern only a single period, during which there cannot be any surplus of intermediate goods (assuming the absence of stockpiles).

As for final goods, since they do not enter as such in the production process, they exist only as an output of the system, and not as an input. Therefore, it is true that we might think of a difference at an individual level between the output and the input: since for each of them this input is zero, the total quantity produced might be considered as a kind of individual surplus. But if we did so we would forget to deduct all the intermediate goods that are on the left-hand side of the equation of the system, and that have actually entered, directly or indirectly, into the production process of this final good. Similarly, at the level of all of these final goods, this is not true either, because at this global level all of the intermediate goods which enter as inputs into the whole production process have to be deducted from the whole output, which is impossible due to the heterogeneity of both types of goods. As a consequence, a so-called surplus cannot be quantified, and has therefore no meaning.

### *6.3 The notion of Standard commodity*

Sraffa devotes Chapter IV of his book to the Standard commodity, which he defines as a commodity that would not itself change in value when the distribution between wages and profit changes. He notes in § 24 that the perfect composite commodity that could play this role:

> "…is one which consists of the same commodities (combined in the same proportions) as does the aggregate of its own means of production."

In § 26 he calls the set of equations taken in the proportions of the Standard commodity, the Standard system. He continues by saying that:

> "…in any actual economic system there is embedded a miniature system which can be brought to light by chipping off the unwanted parts",

and he adds that: "…this applies as much to a system which is not in a self-replacing state as to one which is". He then: "…takes as unit of the Standard commodity the quantity of it that would form the net product of a Standard system employing the whole annual labor of the actual system", calling it "the Standard net product."

Finally in § 28 Sraffa defines as the Standard ratio:

> "…the rate by which the total product of the Standard system exceeds its aggregate means of production, or the ratio of the net product to the means of production of the system", underlining that:
>
> "… the possibility of speaking of a ratio between two collections of miscellaneous commodities without need of reducing them to a common measure of price arises of course from the circumstance that both collections

> are made up in the same proportions – from their being in fact quantities of the same composite commodities."

It is easy to see that all this demonstration can be carried out only because the very first assumptions made by Sraffa establish an *ad hoc* classification of the goods, where all the goods, apart from the luxury goods as he names them, can in effect play both roles of means of production and of final products, which entitles them to being basic goods. This is what leads him to his particular treatment of fixed capital goods. However, we have showed that this classification is wrong, and that the only goods which are simultaneously means of production and products of the system are the intermediate goods part of the circulating capital, but that there cannot be a surplus of them, because they are transformed in the process of production of the final goods.

It follows therefore that in an actual economic system where no confusion is made between the different types of goods, it is impossible to define either a Standard commodity such as Sraffa's, or a Standard system, or a Standard net product, or a Standard ratio. Moreover Sraffa tells us in § 43 that:

> "…the last remaining use of the Standard net product is as a medium in terms of which the wage is expressed – and in this case there seems to be no way of replacing it."

Consequently the fact that there is no such thing as a Standard net product implies in particular that the wage cannot be expressed in terms of this medium. Therefore the relation of proportionality r = R (1 - w) between the wage and the rate of profits established by Sraffa, and at the heart of his theory, cannot exist.

## 7. The intractable problem of land and natural resources

An additional problem arises with the introduction of non-produced means of production, such as land and mines, in Sraffa's system, because this makes it again reach its conceptual limits. Indeed, in the same way that goods appearing only as products but not as means of production – such as consumer goods, are not basics, and cannot be part of the standard commodity, conversely land, or more specifically in this case the different land qualities, are among the means of production used to produce agricultural products, but obviously are not part of the product. They are not basic goods, but their existence implies the payment to their owners of a rent which is part of the production price.

When an agricultural product, such as wheat, is produced by several lands of different qualities (fertilities), to determine a price system including the price of this product (wheat), implies that the rent be removed from the system of equations, which would include otherwise more unknowns than equations. This in turn implies that the equation used for the production of wheat in the system of equations is that which corresponds to the land without rent, i.e. the least "fertile" land, but which yields however the average rate of profits. The rent of other more "fertile" lands, with a lower production cost per unit, can then be obtained as a differential rent. It is also clear that the least fertile land is one for which the production cost per unit of output is the highest, or conversely that which produces the lowest amount for a given production cost.

The problem, long known (and recognized by Sraffa himself), is that the determination of the least fertile land depends on the cost of production, i.e. on the price system. Fertility is not an absolute, exogenously given and intrinsic quality of the land, but a relative parameter, which itself depends on the price system. The introduction of land and generally of non- produced means of production and of their income, that constitutes rent, drives the system into a circular reasoning: to determine the price system, we must know which one of the different lands is the land without rent, i.e. the least "fertile" one, which implies to know the price system.

At a second level, the price system varies depending on the variation of the rate of profit or of the wage level. As a result, for different levels of the rate of profit and wages, we necessarily get different price systems, which leads to changes in the production cost of all goods produced with non-produced means of production, such as land or natural resources. These modifications in the price system in turn change the order of land fertility or of the 'productivity' of these natural resources.

Again, we see that "fertility" cannot be defined as a parameter which would be independent of distribution. The equation defining the method of production for the "marginal" land or natural resource can vary with distribution. Therefore the system of equations defining the methods of production when using the least fertile land or other non-produced 'marginal' resources does not remain the same when distribution changes, which implies that the corresponding Standard commodity also varies. Therefore, since the rate of profit or the level of wages are defined in terms of the Standard commodity, it is the very notion of a variation in this rate of profit or level of wages that becomes irrelevant, because it is by definition impossible to compare two different Standard commodities: it is clear that each Standard commodity consists of heterogeneous goods in different proportions, each set corresponding to a different system of equations.

It must therefore be acknowledged that Sraffa's theory fails to provide a coherent conceptual framework which would be able to deal in a non-contradictory or non-circular manner with non-produced means of production and rent, in a way that would maintain the internal consistency of this theory.

## 8. Conclusions on the Sraffa system and Standard commodity

The Sraffa system is a brilliant construction, which had the great merit to dismantle the neoclassical theory of distribution for which wages and profits are determined by the marginal productivity of labor and capital at the equilibrium. It shows well that when multiple heterogeneous goods and production are introduced, wages and profits have nothing to do with any "marginal productivity", but have to be defined as a share of a net product. It nevertheless results from the above demonstration that the system faces insurmountable problems, in fact partially recognized by Sraffa himself, especially when fixed capital and non-produced means of production are introduced in the system.

Moreover, as soon as a price system is needed to express and determine a state of distribution, and to the extent that the price system itself reflects a state of distribution, we fall into a circular reasoning: we must know the price system to measure the distribution, but one must know the distribution to determine this system. Sraffa resolves this dilemma by defining an invariable Standard of value, which is invariable with respect to distribution, and in which

distribution can therefore be expressed independently of prices. This invariable Standard is the Standard commodity, which leads to the well-known formula r = R (1 – w). But this is achieved by paying a heavy theoretical price:

- The Standard commodity is in fact a composite aggregate of heterogeneous goods, which are by definition basic goods, thus appearing to the right and left of the equations giving the prices. This Standard commodity made of basic goods allows to some extent to reason, with all the limitations which have been reported, as if we were in the universe with a single good of the neoclassical theory or the Essay on Profits of Ricardo[5], of which 'Production of commodities…' constitutes an attempt of generalization;

- Any change in the composition of the Standard commodity is a change of system which is unintelligible, since it is impossible to compare two different Standard commodities, i.e. to sets of different heterogeneous goods. Each Standard commodity corresponds to a period during which the methods of production cannot change : in the real world this implies that such a period must be extremely short ;

- Since production is generally a continuous process, with a continuous change in the methods of production and therefore in the Standard commodity, this prevents from considering this Standard of value as a unit of measure for money, which has to link the present to the future. This makes it impossible to introduce into this system a money with Keynesian characteristics, meaning that its elements are pure numbers without dimension, or scalars[6];

- Therefore a change in distribution becomes unintelligible as soon as the methods of productions change by the slightest amount, since the composition of the Standard commodity changes simultaneously;

- While prices are expected to ensure the reproduction of the system, no mechanism is provided to connect the expense of wages and profits to this reproduction, unless we assume that workers like capitalists share the same set of basic goods in the same proportions, which is absurd;

- One could even say that the system cannot be strictly speaking the capitalist system, since the difference between workers and capitalists is suppressed by the fact that what they share is in fact the same Standard commodity.

## 9. An alternative view: production as a transformation process

What has been established in this paper is that all the problems encountered by Sraffa's theory cannot but come from its very roots, i.e. from his initial assumption that production is a circular process, which leads Sraffa to an erroneous definition and classification of the goods which are part of this process, either as entering into it or as coming out of it. While Sraffa thinks rightly that there is no such thing as a "productivity" of capital, this is what leads him to consider fixed capital goods as if they were intermediate goods, and to put the 'depreciation'

[5] Ricardo, 1951.
[6] That Keynes's units of measure were not compatible with a Standard of value made of heterogeneous goods was shown in Flamant, 1975.

of capital on the left of his equations, which implies that fixed capital transfers its value to the products, an assumption rejected by Keynes.

Does this mean that production must therefore be regarded, as Sraffa also said to characterize the alternative view, as "a one-way avenue that leads from factors of production to consumption goods"? This paper does not fully validate this view either. It has showed indeed that production is a transformation process only for intermediate goods, and that part of these goods are used in their own production, which is indeed a circular process. However the remaining part of intermediate goods is transformed into final goods, that are either consumption goods or fixed capital goods, and for this very reason never enter again to be transformed in the production process once this transformation has occurred and is over.

It has been shown also that fixed capital, while it plays an indispensable role in the production process, by helping to transform intermediate goods, is not itself transformed in this process. It is not either a factor of production in the sense that it would have a measurable "productivity", independent of distribution and of the price system. Therefore production can only be defined as a work process that takes place in the context of specific social relations, where wages are paid in money, and in which fixed capital plays an important role, but as a catalyst which as such is present and unchanged at the beginning as well as at the end of the production process, and increases in considerable proportions the productivity of labor.

All these flaws explain why the Sraffa's system cannot be a solution to the Marxist problem of the transformation of values into prices of production, which has been wrongly expressed and therefore left unsolved by Marx. This is not surprising, because Marx, like Torrens and Sraffa, also thought that fixed capital transferred its value to the product.[7]

Let us conclude that, on the basis of the above analysis, commodities do not produce commodities. Labor, helped by capital as a catalyst, produces commodities. Maybe Sraffa was a little aware of that, which would help explain the enigmatic character of his subtitle to *Production of commodities*…: "Prelude to a critique of economic theory".

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[7] Flamant, C. (2014). provides a comprehensive analysis of these questions. Chapter 14 exposes a coherent price theory (pp.159-184).

**Author contact:** cflamant1@gmail.com

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# Economic consequences of location: European integration and crisis recovery reconsidered

Rainer Kattel[1] [Tallinn University of Technology, Estonia]



> Henry crosses the room. Stamp, stamp stamp in his riding boots; he is ready for *la chasse*. He turns, rather slowly, to show his majesty to better effect: wide and square and bright. 'We will pursue this. What constrains me?' 'The distance,' he says (Hilary Mantel, *Wolf Hall)*.

The European Union as a whole has not recovered from widespread financial cum fiscal crisis that emerged in 2008. However, as is well known, this does not mean that some countries or even regions have not left recession behind. Typical official political answer for why some have recovered involves a combination of well-applied austerity measures (indicates correct choices once the crisis hit) and relatively less corrupted elites (indicating healthier political economy prior the crisis). There are ample reasons to doubt this official line of reasoning, most of them pinpointing to financial and fiscal architecture of the Union as fundamentally faulty and at fault. Essentially these doubting arguments take two often interrelated forms: either the European crisis is caused and perpetuated by balance of payment imbalances between surplus and deficit countries without a clearing union, or by the lack of (transparent) lender of last resort.[2] Simply put, European architecture assumes all countries within the Europe Union can be successful with exports based development strategy; everybody just needs to be competitive enough to manage in good and bad times – without the help from exchange rate management or lender of last resort. In what follows, I argue that under such circumstances what becomes important for economic success and failure are accidental features of a country and not the ones based on political and especially policy choices. And more precisely, under above mentioned specific European circumstances geographic location – distance from core European economies – becomes a key determinant in how countries fare in Europe. However, geography is not a policy choice, it's an accident.

Location as an important feature in economic development is obviously not a new argument. From Johann Heinrich von Thünen's *Der Isolierte Staat* (1826) to modern research on economic agglomerations by Jane Jacobs (1984) and Ann Markusen (1996) to regional innovations systems studies (Asheim and Gentler 2006) and to explaining the rise of the West as location based historical development (Morris 2010) and, most recently, to research on global value chains (Gereffi 2013; Ernst 2009) – location is seen as one of the key economic factors in all the mentioned avenues of economics. This short paper does not pretend to add to any of these research strands. Rather, the paper assumes primacy of human agency (choices made by entrepreneurs and policy makers – available to researchers as institutional facts and interactions) and it aims to show under which circumstances and how location becomes to dominate over human agency, that is, over policy choices.

[1] This note was originally prepared for Network Ideas conference in Chennai, India, January 2015. I am grateful to Björn Asheim for his comments on an earlier draft.
[2] For the former type of argument, see Kregel 2011; for the latter, see Mitchell 2015.

Analytically, the paper is based on what could be dubbed a Schumpeter-Minsky-Kregel institutional framework.[3] Any economic unit (company, country) can be institutionally (in the sense of various interactions it has and rules that govern these interactions) viewed from both its innovation profile (its technological, managerial, etc capabilities; well established in Schumpeterian line of research, see Schumpeter 1912, 1939 and 1942) and from financial profile (also already present in rudimentary form in Schumpeter's analysis but later substantially further developed by Minsky (1986a; 1986b) and by Kregel, particularly in the sense of international institutional dimension (2004)). According to Minsky, economic unit can be either in hedged (all its liabilities are well covered by assets), speculative (it has to sell some of the assets or borrow to make position, that is to cover liabilities) or Ponzi (neither selling of assets or borrowing is enough to cover liabilities) financial position. This institutional framework can be expressed in a greatly simplifying figure as follows (Figure 1):

**Figure 1.** Analytical framework

<table>
<tr><td></td><td>Financing position of economic unit</td><td></td></tr>
<tr><td></td><td rowspan="3">Hedged<br><br>Speculative<br><br>Ponzi</td><td></td></tr>
<tr><td>Innovation profile of economic unit</td><td>Financial profile of economic unit</td></tr>
<tr><td></td><td></td></tr>
</table>

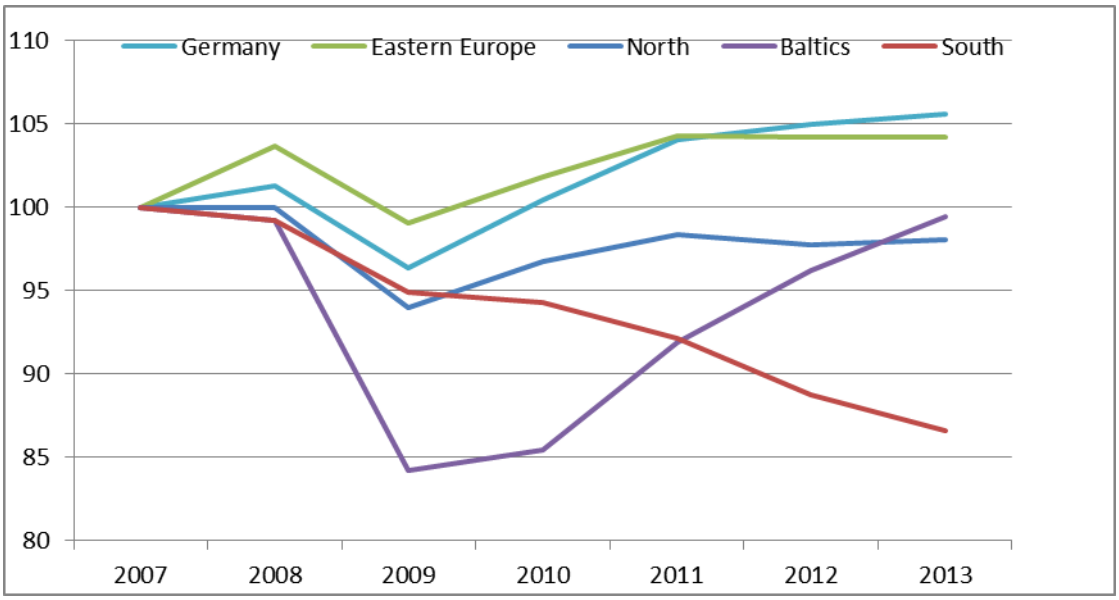
Within this framework, economic unit's financing position (health of its balance sheet, in other words), depends both on changes in innovation profile (e.g., licensing new technology, setting up new factory) and financial profile (e.g., changes in interest or exchange rates). Geography and location have played a marginal role in such analysis. In what follows, I try to show that at least within the European context, location has become a huge factor in determining health of balance sheets (of countries and companies).

## I Post-crisis Europe: deceptive simplicity

One of the first things in terms of location one notices is that Europe has indeed become a region of different growth (or crisis recovery) speeds. More precisely, we can see three different sets of countries as depicted on Figure 2.[4]

[3] See also Burlamaqui and Kattel 2014 for more detailed discussion.
[4] Here and on following figures not all EU or eurozone countries are depicted; in order to keep figures less clattered, the figures look at Germany and diverse regions within the EU: Northern European (Netherlands, Finland, Denmark, Sweden), Southern European (Greece, Italy, Spain, Portugal), Eastern European (Czech Republic, Hungary, Poland, Slovakia and Slovenia) and Baltic (Estonia, Latvia, Lithuania) countries. Here and on other figures regional figures are based on simple averages.

**Figure 2.** Gdp per capita since 2007, selected European regions (averages), in 1990 gk$, 2007=100.




Source: The Conference Board Total Economy Database™, January 2014, http://www.conference-board.org/data/economydatabase/ calculations by the author.

We can see a three tier Europe emerging:

*First*, Germany and Eastern European economies – tightly knit together via Germany's transport equipment production networks[5] – experienced virtually no crisis (with the exception of Hungary);

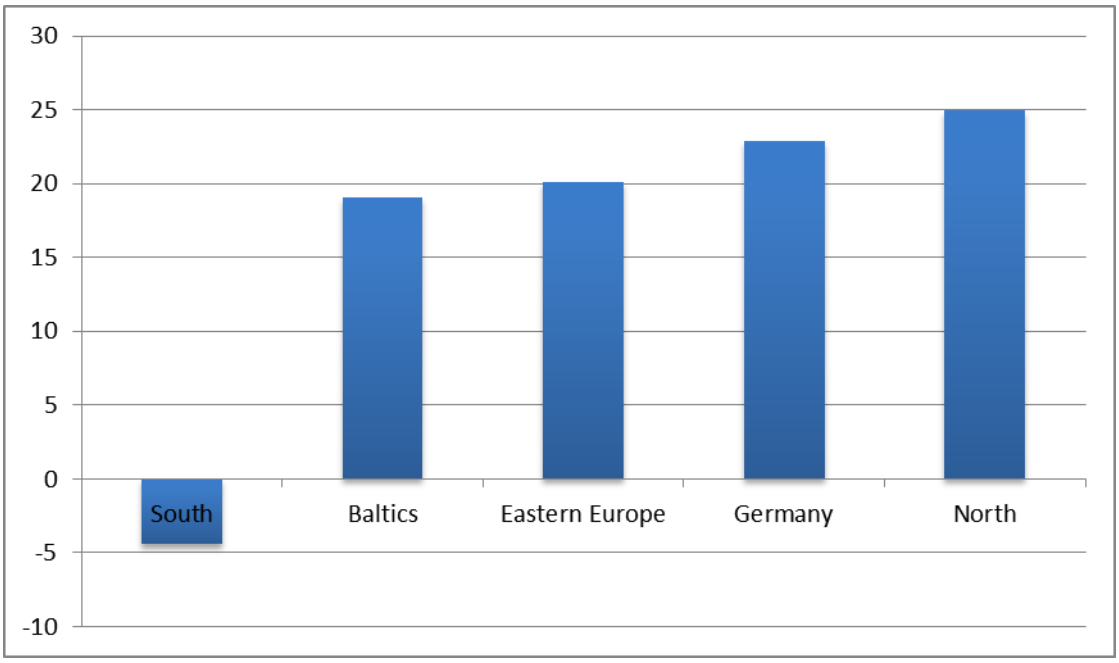
*Second*, Northern Europe and Baltics – knit together via electronics and tourism value chains of Northern Europe – have converged around similar growth rates after deep shocks in the Baltics in 2009-2010;[6] and

*Third*, Southern Europe, with low levels of exports and accordingly without significant intra-European value-chain interdependence (see further below), are in continuous slow decline.

There seems to be also a obvious culprit – austerity is killing the South; all other regions under consideration here have rather noticeably increased government expenditures from 2007 to 2013 (latest year available), as we can see from Figure 3.

[5] For a detailed discussion, see IMF 2013.
[6] Kattel and Raudla 2013 offer further details; see also Reinert and Kattel 2013.

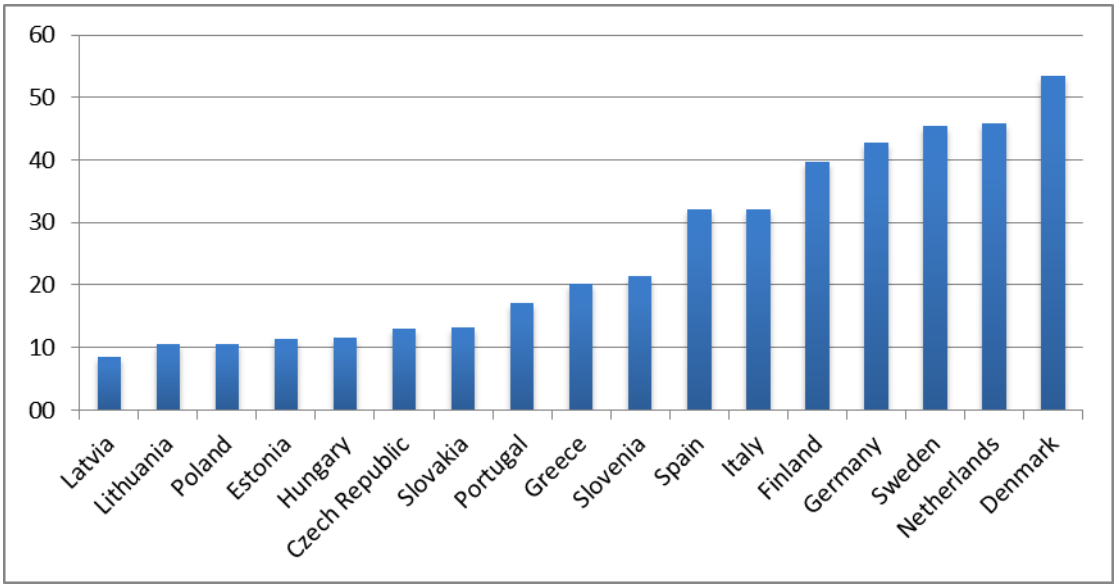
**Figure 3.** Growth of government expenditure in selected European regions, 2007-2013, current prices.




Source: Eurostat; calculations by the author.

If we think of labour productivity as a proxy for competitiveness of an economy, then this impression that the Southern countries suffer under artificial external constraints (i.e. why they do not increase government spending), is only strengthened. In terms of labour productivity, Europe looks a rather linear ladder going upwards, as we can see on Figure 4: countries grow gradually more productive from the Baltics and Eastern Europe over Southern Europe towards Germany and Scandinavia.

**Figure 4.** Real labour productivity per hour worked, selected European economies, 2013.



Source: Eurostat.

However, this straightforward picture – remove fiscal and monetary shackles and the South will catch up with the North – is deceptive. In other to get a better and more complex understanding, we need to also understand innovation and financial profiles of European economies, in the sense depicted above in the analytical framework.

## II Innovation and financial profiles of European economies

Both innovation and financial profiles of economies are obviously highly complicated and complex issues. In what follows, I use therefore rather simplified proxies to get a quick and somewhat birds-eye view on these issues.

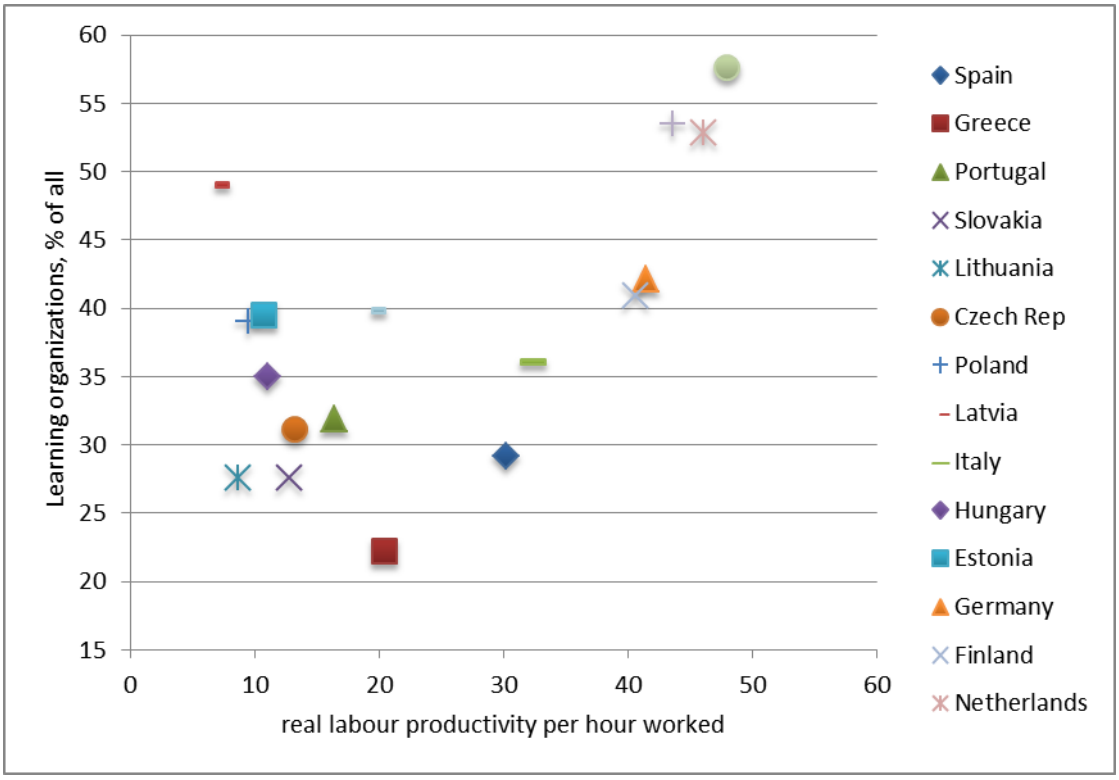
In terms of innovation, we know that most companies (or economic units) innovative incrementally, learning from daily activities to avoid mistakes, waste materials and time, and finding slightly better, faster ways of creating products and services, or servicing clients.[7] What we thus need to understand is how do companies behave in different economies, what sort of routines are dominating within companies. Holm and Lorenz have utilised the European Working Conditions Survey – which is based on individual interviews with employees about working conditions – to come up with a taxonomy of organisations.[8] (Holm an Lorenz 2014) Their taxonomy is based on the way work is organised at the shop level: how hierarchical are decision making processes (for instance, when something goes wrong, who decides how and what should be done?); how complex are tasks; how much team work there is, etc. And they show that there are four key types of organisations: from discretionary learning based organisations over lean and tayloristic organisations to simple organisations. Particularly the former are interesting for the purposes of the current paper as these organisations – called learning organisations hereafter – are geared towards continuous and incremental learning and innovations. (See also Holm et al 2010) To put it very simply: the more there are such learning organisations in an economy, the more innovative the economy is. If we plot productivity and learning organisations data from European economies, we get a surprising picture, see Figure 5.

Instead of a linear catching up path – as labour productivity data would suggest –, we see rather a veritable valley of death as we proceed from low productivity countries towards high productivity countries. The gulf between low and high productivity countries is filled with countries were innovations are not that important for companies and where more hierarchical organisation types prevail. In other words, as Eastern European and Baltic economies are highly integrated with German and Northern European economies respectively, this is also reflected in their innovation profiles as these are converging, albeit without being accompanied by productivity growth. The channel for such convergence is, on the one hand, high share of foreign ownership (FDI, see next figure), and, on the other hand, tightly interwoven trade networks. Southern European countries seem to have distinctly different innovation profile and hence integration patterns.

[7] Community innovation surveys periodically conducted in European countries offer ample empirical proof, see http://ec.europa.eu/eurostat/web/microdata/community_innovation_survey for datasets and questionnaires. For a theoretical background, see Nelson and Winter 1982 and their discussion of various routines and capabilities.

[8] As there have been numerous waves of the survey, Holm and Lorenz's taxonomy is based on "33 187 interviews distributed across 81 country-waves". (2014, 5)

**Figure 5.** Learning organizations and labour productivity, 2010.

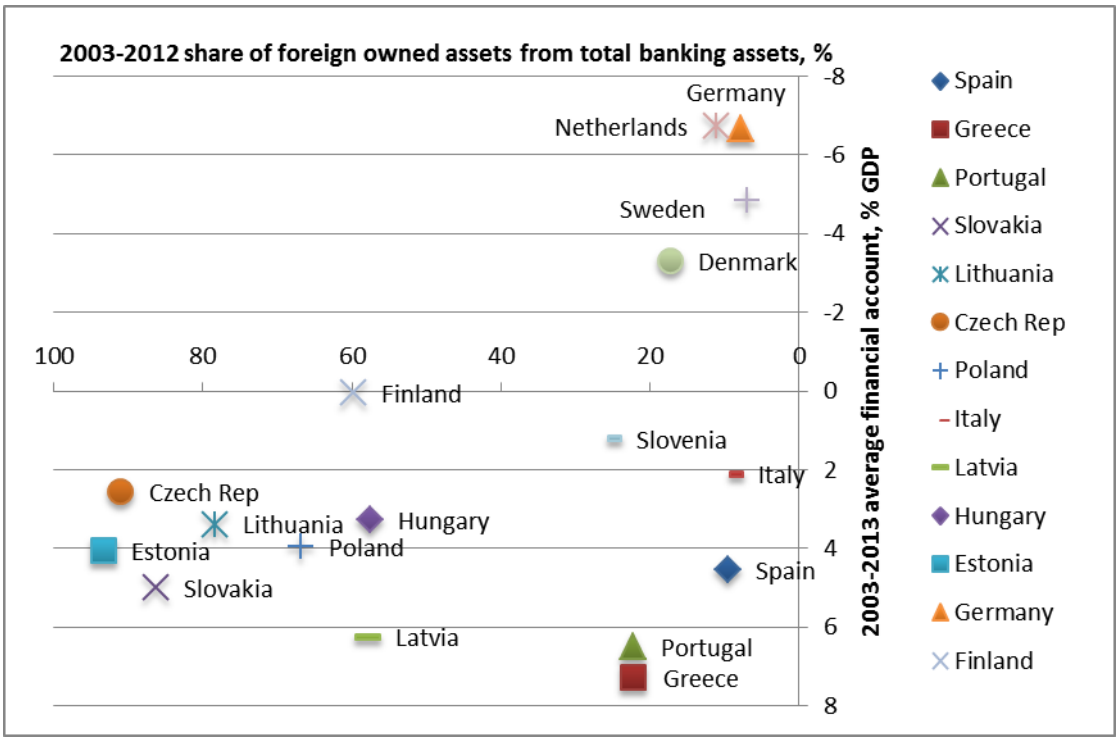



Source: Eurostat; Jacob Holm.[9]

In terms financial profile, Europe is in a rather unique situation as countries are strongly constrained in their fiscal policies and eurozone countries lack monetary policy entirely; in addition, free movement of goods and services means that simultaneously most countries are highly integrated with each other. Accordingly, in order to gauge country financial profiles, we can look at financial account (capital flows) and at foreign ownership of banking assets as proxies for where does financing come from and who makes financing decisions. Figure 6 does this.

[9] I am grateful for Jacob Holm for sharing his datasets. Holm et al 2010 have also calculated the share of learning organisations for 2005, differences are not large.

**Figure 6.** Financial account and share of foreign owned banking assets, ten year averages, selected European economies.




Source: Eurostat; ECB reports (2003-2007), ECB consolidated banking database (2008-2012); calculations by the author.

Also in financial profiles we see regions with distinctly different profiles: Germany and other Northern economies have low shares of foreign ownership and are exporting capital; South is the exact mirror image of the North as it has low foreign ownership and is importing capital; Eastern European and Baltic economies have extremely high shares of foreign ownership and massively import capital. Particularly latter two regions – Eastern Europe and Baltics – have financial profiles with extremely constrained financial decision making spaces: what gets funded is decided somewhere else.[10]

### III Location as destiny?

Looking at the European map, it is somewhat obvious to think that geography should play a crucial role, at least in some more apparent cases. Thus, for instance, it would come as a great surprise if Finland and Estonia (distance between capital cities – 80km) were not strongly integrated economically. What speaks for it even more is that these two countries share a long-term political past (both were incorporated into Tsarist Russia until World War I) and strong cultural affinity (both languages belong to the same language family).[11] On the other hand, it can be argued that entire point of economic policy making is to overcome disadvantages (e.g. remote location, or natural resource abundance) and utilise advantages

[10] One could also discuss here public investment programmes (into infrastructure, R&D, etc), however these are typically few orders of magnitude lower than financing of investments by private sector.
[11] See Boschma 2005 on different types of proximity.

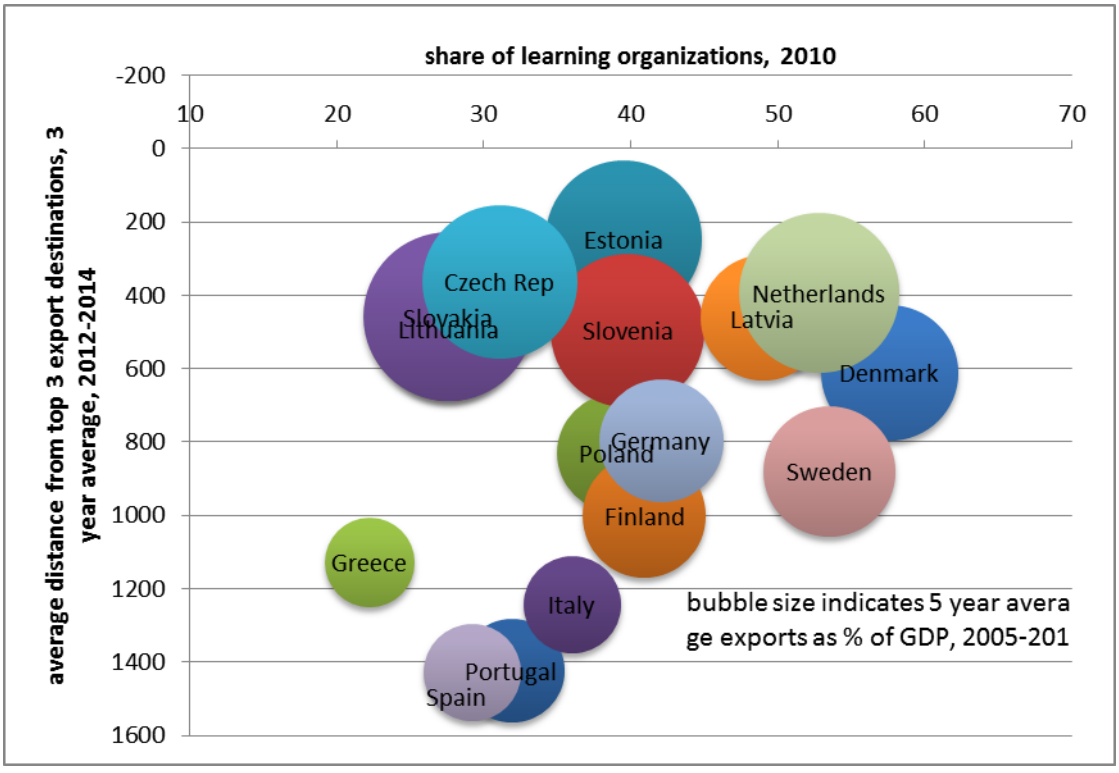
(e.g. vicinity to large markets, or highly educated labour force). What is interesting is how location and policy mix.

Famously, von Thünen's 19th century model showed that they do not: as argued by Reinert 2013 and Fuijta and Krugman 1995, von Thünen's model indicates that the farther a location is from increasing returns activities of the city at the centre of isolated state, the more primitive economic activities become.[12] Conversely, Mukand and Rodrik (2002) have shown how in the Eastern European and former Soviet Union context policy ideas are copied with different earnestness: countries closer to Brussels tend to mimick policy ideas more closely (and gain according economic benefits) than countries in far periphery (who thus retain larger policy space and could potentially benefit from this), and those in the middle faring worst as they somewhat feebly attempt to mimic core countries without clear economic benefits.

If we add location as a variable to innovation and financial profiles described above, we get indeed a picture reminiscent of von Thünen's circles of decreasing returns. (It is important to note that in what follows dynamics within a country are not considered.) As a proxy for location I have taken a very simple measure: average distance to three top export partners (distance between capital cities; over past 3 years up to 2014).

Figure 7 shows innovation profiles with location figured in and Figure 8 does the same for financial profiles.

**Figure 7.** Innovation profiles and location, selected European economies




Source: Eurostat; Jacob Holm; calculations by the author.

[12] Fuijta and Krugman 1995 model under what circumstance there will emerge another city, i.e another agglomeration of increasing returns activities.

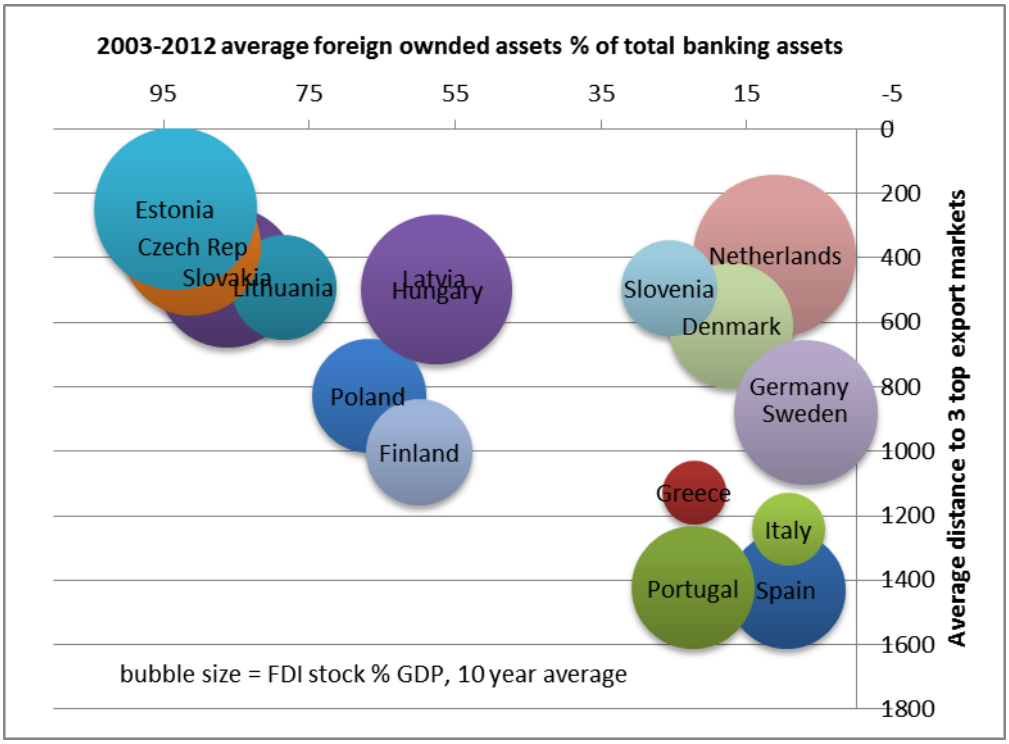
In the case of innovation profiles, we can in fact see modern version of von Thünen's (half-) circles: in the core we have Northern European economies, closely surrounded by Eastern European and Baltic economies (first half circle), while the Southern economies remain at quite a distance (second half circle). In the case of financial profiles, we see again regional groupings emerging clearly and again distance making a big difference, in this case in the much higher levels of foreign financial ownership and levels of FDI stock (only outlier is Slovenia that groups with the Northern core economies). This leads us to venture that potential financial instability sources are quite different at the opposite ends of financial von Thünen's circles in Europe: what threatens the South is not what threatens the East (see more below).

We can draw two tentative conclusions from these location based figures:

First, modern von Thünen circles in Europe do not express increasing distance from increasing returns activities but rather decreasing returns to integration: the farther a country is from core surplus and capital exporting economies, the less returns (in terms of companies mimicking innovation behaviour of the core economies) it reaps from integration. This is also expressed in lower exports and export potential as indicated through much lower FDI.

Second, under these circumstance it seems particularly non-sensical for countries farther from the core – the Southern European economies – to follow similar structural and other policies as those in the core and its Eastern and Baltic satellites as they likelihood of reaping economic benefits seems rather low (as Mukand and Rodrik 2002 predicted, albeit in a somewhat different context).

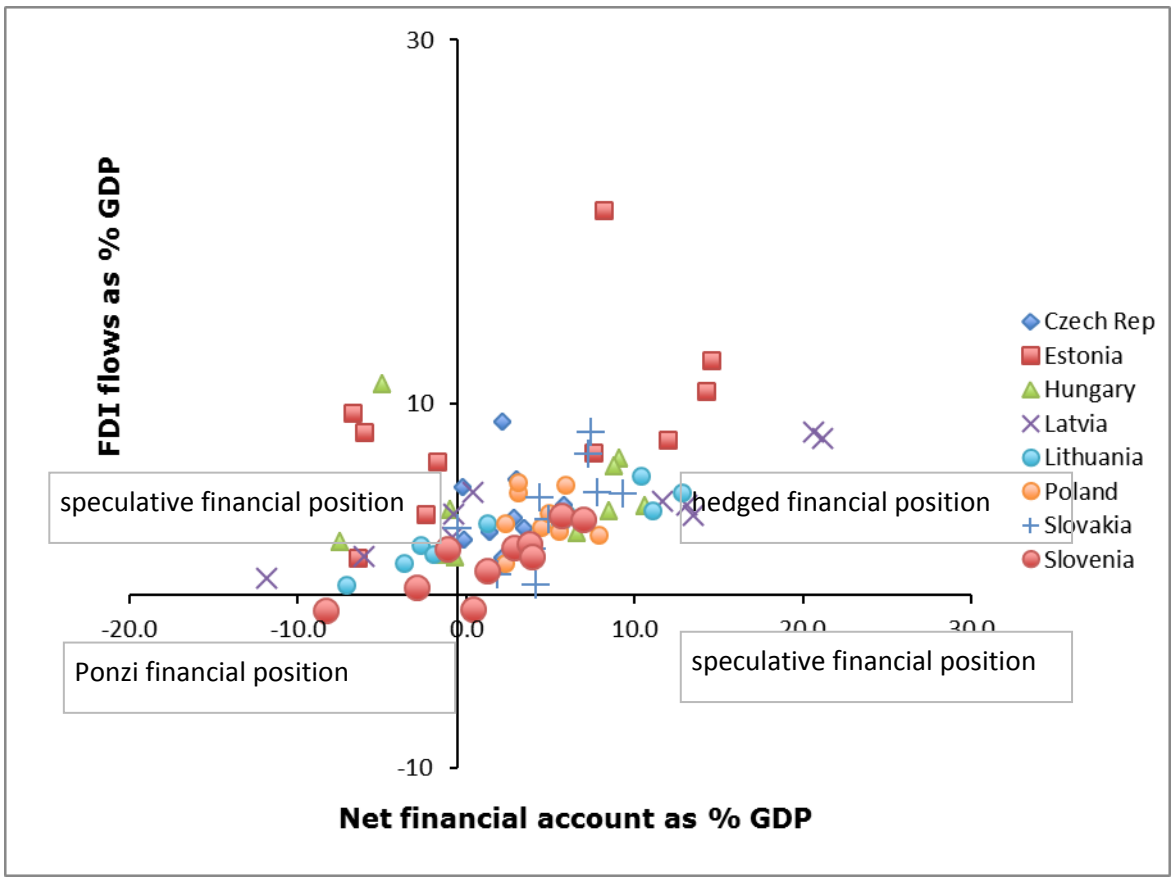
**Figure 8**. Location and financial profiles, selected European economies.




Source: Eurostat; ECB reports (2003-2007), ECB consolidated banking database (2008-2012); calculations by the author.

In the case of satellite economies of Eastern Europe and Baltics, it is interesting to observe that during the crisis they did not experience significant capital outflows (which would have doomed these economies to a severe shock). However, following Jan Kregel's work (2004), we can construct a simple formula to see how vulnerable these economies are to external shocks. Kregel argues that countries relying on foreign borrowing to pay for their imports – in other words, countries with large current account deficits, such as Eastern European and especially Baltic economies – can experience self-reversal of their growth strategies when the rate of incoming capital is lower than interest on existing foreign borrowing. If that is the case, these countries move into Ponzi financing position (as described above). Figure 9 does a simple exercise along these lines, looking at financial account and FDI flows in Eastern European and Baltic economies over the past decade.

Figure 9. Financial stability in Eastern Europe and Baltics, 2004-2013




*Source: Eurostat.*

As we can see, during most of the period, these economies oscillated between speculative and hedged financing positions. This suggests that while these economies are highly integrated into core European financial networks, reversal of capital flows can in fact quite easily happen. In other words, while innovation profiles of these countries suggests close mimicking of core countries' profiles, without increasing labour productivity (and translating it into higher wages and stronger domestic demand), Eastern European and Baltic economies remain in a rather speculative financing position: their growth depends on flows and stocks of capital that these economies themselves are not in charge of.

**IV Implications**

This brief note shows above all that in a world based on trade and financial openness and where development strategies are increasingly foreign savings based (in form of borrowing and exports), location –vicinity to main export partners – becomes to dominate innovation and financial profiles of countries and companies. In effect, polices become secondary. Success or failure becomes a matter of geographical accidents. Geography becomes destiny.

If this is halfway true then farther European periphery has hardly any realistic hope of converging with the core in terms of its innovation profiles – that is, in terms of its competitiveness. In essence, periphery in the South needs to overcome location bias forced upon it by rules of the game of the European Union. In other words, these economies need changes in the rules of the game. Given the EU's fiscal constraints on countries (meaning governments in the South cannot massively increase investments into the real economy and productive infrastructure), the most realistic option these countries have is to change rules governing their financial sectors and induce in such a way higher investments into the real sector.

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**Author contact:** rainer.kattel@ttu.ee

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# Global production shifts, the transformation of finance and Latin America´s performance in the 2000s

Esteban Pérez Caldentey[1] [Economic Commission for Latin America and the Caribbean]



**Abstract**
There are two main distinguishing features that characterize the performance of Latin American in the 2000s in relation to its past history. During the 2000s Latin America witnessed one of the most significant expansions of the last thirty years. At the same time, LA's recovery from the effects of the Global Financial Crisis (2007-2009), the most important crisis since the Great Depression, was V shaped. This paper argues that Latin America´s (LA) performance in the 2000s in good and bad times is explained by the way in which capitalism organizes production and finance. The focus is placed in part on the global production shifts of multinational corporations to move industries, production and employment across the globe taking advantage of cheaper production costs, expanding markets and the increasing importance of production chains. During the 2000´s decade China became a hub for developed country corporate production restructuring. Another contributing factor is the increased integration of the real and financial spheres as epitomized by the use of commodities as financial assets and collaterals. At a more general level the analysis questions the widely held perception that developed economies have lost pre-eminence at the global level and that the distribution of world economic and political power is shifting towards the developing world.

## Introduction

There are two main distinguishing features of the performance of Latin American in the 2000s in relation to its past history. During the 2000s Latin America (LA) witnessed one of the most significant expansions of the last thirty years. At the same time, LA's recovery from the effects of the Global Financial Crisis (2007-2009), the most important crisis since the Great Depression, was V shaped.

This paper argues that Latin America's performance in the 2000s in good and bad times is explained by a process of global production restructuring and a greater integration between the real economy and finance. The process of global production restructuring refers to a trend of multinational corporation networks to move a wide variety of industries, production and employment across the globe taking advantage of cheaper production costs, expanding global markets and the increasing importance of global production chains. Due to its size, strategic location, favorable tax treatment and open door policy, China became a linchpin of this transformation.

The global production restructuring movement has been a key contributor to the increase in the demand for raw materials, commodities and other inputs which constitute some of the major exports of Latin American countries. The available empirical evidence shows that a significant part of Chinese imports and exports do not respond to the demands and

[1] Economic Commission for Latin America and the Caribbean. The opinions here expressed are those of the author and may not coincide with those of the institutions with whom he is affiliated. The author wishes to thank Manuel Cruz for his contributions to the ideas developed in the paper.

possibilities of the domestic Chinese economy but rather to the needs of foreign multinational corporations operating, under very favourable conditions, in China.

At the same time that the restructuring of global production intensified in the 2000s, the financial sector became intertwined with the real economy. This is illustrated by the trends observed in the commodities market in the same period. Commodities took on an increasing role as financial assets which affected their price trends and their volatility. Part of this consisted in the use of commodities as collaterals to obtain loans and liquidity.

The relation between both changes in production and finance and Latin American performance in the 2000s decade is not coincidental. During this time Latin American economies benefitted from high commodity prices and high export demand which had important positive effects on its external accounts and also its fiscal position. More to the point these softened Latin America´s external constraint. In fact, the regional performance in the period running from 2003 to 2007 is atypical in the sense that it is the first time that Latin America experienced a high growth with a surplus in its current account at the regional level. Moreover, during this time Latin America also benefitted from easy access to liquidity resulting from the increased interrelation between commodity prices and finance.

The paper is divided into five sections. The second section briefly describes Latin America´s performance during the 2000s. The third and fourth sections analyze, respectively, the restructuring of global production and the transformation of finance. The fifth section concludes.

**Latin America in the 2000s: a different performance in good and bad times**

During the period 2003-2007 Latin America witnessed one of the most significant expansions over the last thirty years. The regional average per capita growth rate reached 2.8 percent, surpassing not only that of the 1980s lost decade and that registered during the free market structural reform era (1991–2000; 1.3 percent), and was only surpassed by that of the 1970s (4.4 percent).

**Table 1:** GDP per capita growth in Latin America and the Caribbean, 1971–2013

| Period | GDP per capita |
|---|---|
| 1971 - 1980 | 4.4 |
| 1981- 1990 | -0.3 |
| 1991 - 2002 | 1.3 |
| 2003 - 2007 | 2.7 |
| 2008 - 2009 | -0.2 (-2.7% for 2009) |
| 2010 - 2013 | 2.7 |

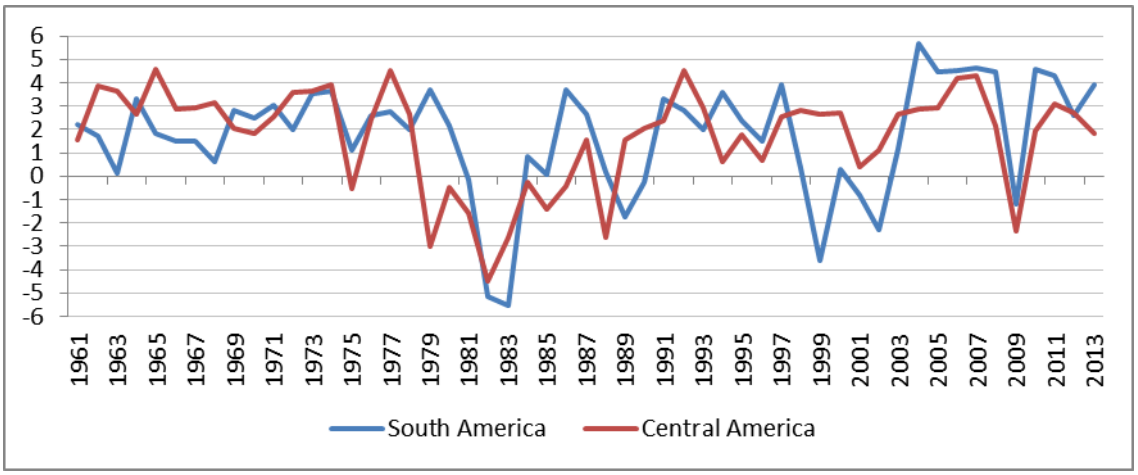
Source: World Development Indicators, World Bank (2015)

This vigorous expansion was interrupted by the Global Financial Crisis (2007-2009) whose effects did not spare the countries of Latin America. In line with the impact of the crisis worldwide, Latin American countries witnessed, on average, a decline in the regional GDP

per capita growth rate of -2.7% for 2009. At the national level 10 out of 18 (or 55% of the total) Latin American economies experienced output contractions.

From a comparative sub-regional perspective the effects of the crisis are far from homogeneous and were felt with much greater intensity in Central America than in South America. On average the rate of growth in 2009 plunged by -2.3% on average for Central America (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua) and -1.8% if Panama and the Dominican Republic are included. South America also registered a contraction but with lesser intensity than Central America as can be seen in Figure 1.

**Figure 1**: Rates of growth of GDP for South and Central America 1961-2013 (Averages)




Source: World Development Indicators, World Bank (2015)

However as clearly shown in Figure 1, both sub regions were able quickly to bounce back and regain the levels in the rates of growth that had prevailed in the pre-crisis period. In fact the short duration of this last crises episode and the swift recovery distinguishes the impact of the Global Financial Crisis episode (2007-2009) from other crises including the 1980's Debt-Crisis (1980), the Mexican Crisis (1994-1995) and the Asian-Russian-Argentine crises (1998-2002).

**Global shifts and the restructuring of world production**

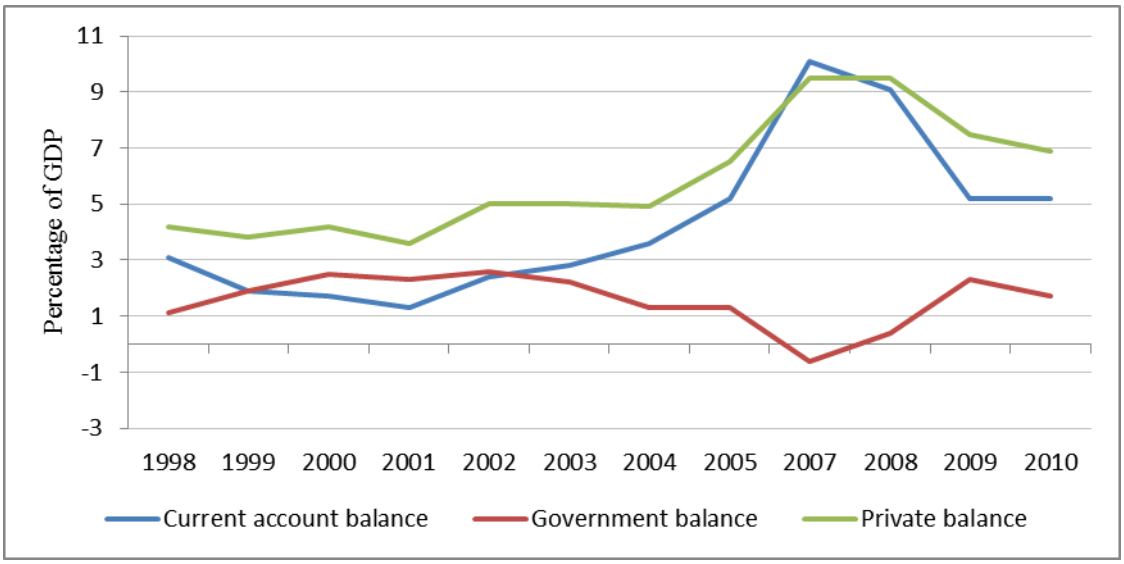
The performance of Latin American countries and in particular of commodity exporting countries during the 2000's decade responds to the increasing importance of multinational corporation (MNC) production networks and to the way countries have positioned themselves within these networks. The formation of global production chain networks stretch across a number of developed countries and developing regions as reflected by the rising importance of intermediate inputs in world trade. According to the World Forum (2012) intermediate inputs represent half of the goods imported by the OECD and three-fourths of the imports of the larger developing economies such as China which is the main trade partner of some of the countries in Latin America. In addition, for some economies intermediate inputs constitute an important share of exports. The OECD reports that the imported intermediate input content represents on average 25% of the OECDs exports and 20% of the European Union extra regional exports. In the case of the developing world China is one of the countries whose exports have one of the highest import content.

In the last three decades the imported input content has evolved alongside China's growth in trade, openness and consolidation as a world economic power. Currently China's economy is one the six largest economies of the world. China represents 8% of world GDP; 17% of world investment, 5% of world final consumption, and 10% of world exports (measured in constant 2005 dollars).

Since the start of economic reforms in 1979 and until very recently, China's real gross domestic product (GDP) increased at an annual average rate of 10% expanding its real GDP 14-fold. As part of the reform process which included among others the decentralization and partial deregulation of trade, and the establishment of development zones run by free market principles with the objective to import foreign direct investment (FDI) and high technology imports, China opened up its economy to external trade and finance.[2] As part of these outward oriented initiatives China joined the World Trade Organization (WTO) in 2001 which resulted in reductions in tariff and non-tariff barriers.[3]

This 'open door policy' led to a significant increase in trade and changed the country's composition of aggregate demand as well as its sources of funding. Imports and exports which represented less than 10% of GDP in 1978 amounted on average to 60% in the 2000s decade. A decomposition of aggregate demand from 1998 to 2011 in its different components shows that the external sector is the main driver of growth. Currently China is the world's second largest exporter and remains the third largest importer of goods and services.[4]

**Figure 2:** China. Decomposition of aggregate demand into the financial balances of the government, private sector and the current account. 1998-2010 (Percentages of GDP).




Source: On the basis of WTO (2007 and 2012)

[2] According to WTO estimates in 2003, 60% of the country's GDP is generated by private sector activity.
[3] According to the WTO the average applied NMF tariff rate was reduced from 35% in 1994 to 15.6% in 2001 and to 9.7% in 2005 and has remained around that level. Duty free tariff lines accounts for roughly 9% of more than half of all tariff lines have tariff rates above zero and below 10%.. Import quotas and trading rights were discontinued in 2004 and import prohibitions and licensing have bee reduced progressively.
[4] This excludes intra-EU trade). (WTO, 2012, p. ix)

A significant part of the growth of trade that has accompanied China's open door policy is explained by the expansion of inward processing. Inward processing is defined as "the customs procedure under certain goods can be brought into a customs territory (free trade zones or special economic areas) conditionally relieved from payment of import duties and taxes, on the basis that such goods are intended for manufacturing, processing or repair and subsequent exportations"(General Administration of Customs of the People's Republic of China, 2011).[5] The available data shows that on average inward processing exports and imports represented 54% and 40% of the total (both processing trade and ordinary (or non-processing trade)) respectively.

**Table 2:** China. Ordinary and inward processing exports and imports as percentage of total imports and exports. 1995 and 2000-2010.

| | Ordinary exports | Ordinary imports | Inward processing exports | Inward processing imports |
|---|---|---|---|---|
| **1995** | 48 | 33 | 50 | 44 |
| **2000** | 41 | 44 | 55 | 41 |
| **2001** | 42 | 47 | 55 | 39 |
| **2002** | 42 | 44 | 55 | 41 |
| **2003** | 42 | 45 | 55 | 39 |
| **2004** | 41 | 44 | 55 | 40 |
| **2005** | 41 | 42 | 55 | 42 |
| **2006** | 43 | 42 | 53 | 41 |
| **2007** | 44 | 45 | 51 | 38 |
| **2008** | 46 | 51 | 47 | 33 |
| **2009** | 44 | 53 | 49 | 32 |
| **2010** | 46 | 55 | 47 | 30 |
| **Average (2000-2007)** | 42 | 44 | 54 | 40 |
| Average (2008-2010) | 45 | 53 | 48 | 32 |

Source: General Administration of Customs of the People's Republic of China, 2011

The two major components of processing trade include 'process with assembly' and 'process with import materials' which for 2010 represented 22.8% and 40% of imports and exports respectively followed by *entrepot* trade by bonded area and warehousing trade (4.3% and 2.2% ; 7.8% and 2.3% of imports and exports).[6] The differences between process with assembly and import materials of trade lie in the reduced cost of the former relative to the

[5] China has different types of free trade zones: special economic zones (SEZ), economic and technological development zones (ETDZ), high technology industrial development zones (HTIDZ) and exports processing zones (EPZ). In 2010, there were 150 special economic zones. In terms of the processing of imports the most important types of zones include the EPZ and the ETDZ. Both accounted for more than 23% of the processing of imports for that year.

[6] Chinese Customs recognize 19 types of trade regimes these include: ordinary trade, international aid, donation by overseas Chinese, compensation trade, goods on consignment, border trade, equipment for processing trade, goods for foreign-contracted project, goods on lease, equipment/materials investment by foreign-invested enterprise, outward processing, barter trade, duty-free commodity, warehousing trade, entrepot trade by bonded areas, equipment imported into export processing zone. In the case of the assembly regime "Chinese companies import raw materials and parts from foreign companies free of cost, assemble or process the raw materials and parts into finished goods domestically in mainland China, and then export the finished goods to foreign companies and receive only a processing charge." In the case of processing "Chinese companies import raw materials and parts from foreign companies for value, assemble or process the raw materials and parts into finished goods domestically in mainland China, and then sell the finished goods to foreign companies."
http://www.yusen-logistics.com/china/english/law/trade/about.html

latter. The process with assembly regime does not incur raw material, intermediate costs and payment of import duties. However, the process with import materials regime has become since the 1990s the most used type of trade regime.

Processing trade is carried out mainly with both Asian and Western economies. In total terms more than half of imports for processing originate in Asian countries (17% from the Republic of Korea, 17% from Taiwan, 17% from China itself, 15% from Japan and 15% from ASEAN) and about 10% from Western countries (5% from the European Union and 6% from the United States). On the exports side, Western and Asian countries account for more than 40% of China's processing exports (22% and 20% for the European Union and the United States; 22%, 9%, 7% and 5% for Hong Kong, Japan, ASEAN and Korea).

The decomposition of China's processing imports by industry show that high technologically intensive imports such as electrical machinery and equipment, machinery and mechanical appliances, and optical photographic instruments account for the bulk total imports (64%). For its part natural resource based imports including mineral fuels, plastics, copper, iron and steel, and rubber represent 18% of the total.

Latin American economies do not represent an important trade partner for this trade regime in total terms. However, these have also contributed to the expansion of processing trade through the provision of specific products including both non-natural and natural resource based products. The former include integrated circuits, electrical capacitators, electrical machinery and parts, semi-conductors, machinery parts and accessories and textiles. The latter and by far the most important category comprises mostly commodities including soya beans, oil, nickel, zinc, tin, iron, wood, meat, textiles, wool, and copper.

**Table 3:** Latin America and the Caribbean: main products exported to China. Averages 2006-2008.

| Country | 5- product | First | Second | Third | Fourth | Fifth |
|---|---|---|---|---|---|---|
| | Total | product | product | product | product | product |
| Argentina | 93% | Soya beans (55%) | Soya bean oil (24%) | Crude Oil (10%) | Leather (3%) | Poultry offal (2%) |
| Bolivia (Plurinational State of) | 82% | Tin ores (27%) | Unwrought tin (19%) | Crude Oil (17%) | Wood (12%) | Ores, non-ferrous (7%) |
| Brazil | 81% | Iron Ore (44%) | Soya beans (23%) | Crude Oil (6%) | Iron ore agglomerates (5%) | Chemical wood pulp (3%) |
| Chile | 93% | Copper (50%) | Copper ores & concentr. (31%) | Chemical wood pulp (6%) | Iron Ore (3%) | Meat offal (2%) |
| Colombia | 97% | Crude Oil (50%) | Other ferro- alloys (40%) | Non-ferrous metal waste (5%) | Leather (3%) | Lactams (0.5%) |
| Costa Rica | 99% | Integrated Circuits (96%) | Piezoelectric crystals (1%) | Semiconductors (1%) | Electrical Resistors (0.3%) | Electr. switch apparatus (0.2%) |
| Cuba | 100% | Nickel mattes (71%) | Unrefined Sugar (20%) | Ores, non-ferrous (7%) | Crude Oil (1%) | Non-ferrous metal waste (1%) |
| Ecuador | 98% | Crude Oil (94%) | Non-ferrous metal waste (3%) | Wood (1%) | Smallwares & toilet articles (0.5 | Meat offal (0.5%) |
| El Salvador | 96% | Electrical capacitors (54%) | Non-ferrous metal waste (38%) | T-shirts (2%) | Coated textiles (1%) | Desperdicios plásticos (1%) |
| Guatemala | 94% | Unrefined Sugar (42%) | Crude Oil (23%) | Zinc ores & concentr. (14%) | Non-ferrous metal waste (8%) | Desperdicios plásticos (6%) |
| Honduras | 92% | Zinc ores & concentr. (34%) | Non-ferrous metal waste (33%) | Lead ores & concentr. (10%) | Desperdicios plásticos (8%) | T-shirts (7%) |
| Mexico | 37% | Integrated Circuits (13%) | Copper ores & concentr. (8%) | Machine parts & access. (7%) | Electrical capacitors (5%) | Semiconductors (5%) |
| Nicaragua | 85% | Non-ferrous metal waste (41%) | Desperdicios plásticos (19%) | Aquatic invertebrates (9%) | T-shirts (8%) | Leather (7%) |
| Caribbean Countries b/ | 89% | Alumina (65%) | Wood (9%) | Non-ferrous metal waste (7%) | Crude minerals (4%) | Ships & vessels (4%) |
| Panama | 78% | Ships & vessels (39%) | Leather (16%) | Meat offal (13%) | Frozen fish (6%) | Desperdicios plásticos (4%) |
| Paraguay | 81% | Cotton (31%) | Wood (26%) | Leather (24%) | Desperdicios plásticos (7%) | Non-ferrous metal waste (5%) |
| Peru | 83% | Copper ores & concentr. (39%) | Meat offal (16%) | Crude Oil (10%) | Lead ores & concentr. (9%) | Iron ore & concentr. (8%) |
| Dominican Rep. | 87% | Other ferro- alloys (68%) | Non-ferrous metal waste (11%) | Electric machinery & parts (8%) | Machine parts & access. (2%) | Electr. switch apparatus (2%) |
| Uruguay | 81% | Soya beans (46%) | Chemical wood pulp (13%) | Wool (9%) | Greasy wool (8%) | Leather (5%) |
| Venezuela (Bolivarian Republic of) | 64% | Crude Oil (51%) | Iron Ore (9%) | Iron or steel granules (2%) | Crude minerals (1%) | Artificial fibres (0.5%) |

**Source:** Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the United Nations Commodity Trade Database (COMTRADE).

b/ On the basis of the data available for each country.

c/ Includes Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saint Lucia, Suriname and Trinidad and Tobago. Product classification based on SITC revision 3 at the 4-digit level

Latin American economies have become some of the top exporters to China for some of these commodities. In the case of copper, Chile ranks as the main exporter to China of copper ores and concentrates (36% of total imports) followed by Peru. Chile is also an important exporter of copper generated from smelting processes (blister/anodes) and of refined copper (38% of total imports).[7]

Chile and Peru as well as the other copper exporting developing countries play a significant role in the copper global supply chain and more specifically in the earlier stages of raw material extraction (mining, concentration) and processing (smelting, refining, fabrication). The secondary stages including material processing (smelting, refining, fabrication), and product manufacturing take place in China. The final stages which involve consumption and recovery (product use, recycling infrastructure, and landfill disposal) are carried out in China and through China in other regions and countries (Europe, United States and other countries in Asia).

Recent data for the case of copper for 2013 shows that 46% of copper imports are undertaken by trade modes associated with processing trade rather than ordinary trade. As expected all copper exports are classified within trade regimes other than ordinary trade.

**Table 4:** China. Refined copper imports and exports by trade regime (September, 2013)

| | **Imports** | **Exports** |
|---|---|---|
| General trade | 53.0 | 0.0 |
| Storage of transit goods in bonded warehouses | 21.2 | 38.4 |
| Inbound and outbound goods in bonded areas | 18.3 | 13.1 |
| Feeding processing trade | 6.5 | 48.5 |
| Processing and Assembly Trade with Supplied Materials | 1.0 | 0.0 |
| Total | 100.0 | 100.0 |

Source: Shanghai Metals Markets. Copper Monthly. 2013.

On the other side of the transaction while the importance of China as an export destination varies widely among Latin American countries, it ranks, along with the Asia-Pacific region among the main trade partners for some of the economies of South and Central America.

The firms that actually engage in this type of trading mode are not in their majority of Chinese origin. In fact more than half of the firms that process imports are foreign and 17% are joint Chinese-foreign ventures. Only 20% of the firms are purely Chinese owned (state-owned private enterprises).

[7] Other main exporters include Australia, Mongolia and Kazakhstan for ores and concentrate, Namibia and Finland in the case of blister/anode and Japan and Kazakhstan for refined copper. See Five Winds International, 2011.

**Table 5:** Proportion of imports by ownership of firms, 2010 (in percentage of total)

| Firm type | Processing | Ordinary | Total |
|---|---|---|---|
| State-owned enterprise | 12.24 | 41.23 | 28.16 |
| Sino-foreign contractual joint venture | 0.66 | 0.44 | 0.54 |
| Sino-foreign equity joint venture | 15.53 | 14.14 | 15.22 |
| Foreign invested enterprise | 58.76 | 20.7 | 37.86 |
| Collective enterprise | 1.42 | 3.45 | 2.54 |
| Private enterprise | 10.17 | 20 | 15.57 |
| Other including foreign company's office in China | 0.01 | 0.01 | 0.01 |

Source: Yu and Tian (2012, p.33, Table 8.13)

The establishment of foreign owned firms is not particular to China and has occurred in a number of developing countries including Mexico, China, India, and other Asian counties. It is part of a corporate restructuring strategy explained by cheaper production costs, expanding global markets and the need to increase and deepen insertion into global production chains.

The availability of data on changes in the location of production is limited and there is no monitoring system to track production shifts around the globe or even at the country level. A study commissioned by the USA-China Economic and Security Review Commission (2004) which focused on the relocation of productive activities from the United States into China with some data for other countries, shows that in 2004, the greater part of production shifts to China originated in developed countries (the United States (38%), United Kingdom (15%), Continental Europe (21%), Australia, Canada and New Zealand (4%), and Japan (15%)). The same trend is found to exist for other preferred locations of production restructuring including India, other Asian countries, Mexico, other Latin American countries and Eastern Europe. Developed economies account for more than 90% of the production shifts to these destinations.

Global production shifts are not specific to any particular industry or product line but rather occur across a wide spectrum of industries and products. This is illustrated in table 6 which shows global production shifts out of the United States by industry and destination. As can be seen from table 6 the industries or lines of production that have relocated comprise from aerospace, to chemicals to textiles and wood and paper. Note that in the particular case of the United States, the industries include those that exported products of Latin America to China including metals, wood, and textiles.

**Table 6:** Global production shifts out of the US by industry and destination country

| | China | India | Other Asia | Mexico | Other Latin America | Eastern Europe | All Other |
|---|---|---|---|---|---|---|---|
| Aerospace | 33% | 0% | 67% | 0% | 0% | 0% | 0% |
| Apparel and footwear | 39% | 0% | 11% | 33% | 11% | 6% | 0% |
| Appliances | 47% | 0% | 21% | 26% | 0% | 5% | 0% |
| Auto parts | 17% | 20% | 0% | 49% | 2% | 12% | 0% |
| Automobiles | 33% | 0% | 0% | 33% | 33% | 0% | 0% |
| Chemicals and petroleum | 50% | 16% | 9% | 9% | 6% | 6% | 3% |
| Communications/Information technology | 4% | 39% | 23% | 0% | 27% | 0% | 7% |
| Electronics/electrical equipment | 48% | 5% | 24% | 9% | 0% | 11% | 3% |
| Finance, insurance, and real estate | 6% | 88% | 6% | 0% | 0% | 0% | 0% |
| Food processing | 0% | 0% | 38% | 25% | 13% | 0% | 25% |
| Household goods | 33% | 0% | 20% | 20% | 13% | 0% | 13% |
| Industrial equipment and machinery | 36% | 7% | 4% | 36% | 0% | 10% | 7% |
| Metal fabrication and production | 44% | 0% | 11% | 26% | 11% | 4% | 4% |
| Plastics, glass and rubber | 28% | 0% | 4% | 36% | 4% | 16% | 12% |
| Sporting goods and toys | 89% | 0% | 11% | 0% | 0% | 0% | 0% |
| Textiles | 42% | 0% | 0% | 13% | 29% | 0% | 17% |
| Wood and paper products | 44% | 13% | 0% | 33% | 11% | 11% | 0% |

Source: Bronfenbrenner and Luces (2004, Table 15, p.70).

An additional and significant piece of evidence that illustrates the importance of the restructuring of production is that for obvious reasons it involves well established multinational corporations mostly in the manufacturing sector (with some exceptions) and that United States based multinational corporations constitute a significant proportion of the total. The study cited above found that the majority of the restructuring firms have been in operation for more than two decades and in some cases closely to fifty years. U.S. based multinational corporations represent on average more than half of the total and more than 70% in the cases of production restructuring to Latin America. In the particular case of China the study found that U.S.-based multinational companies represented 60% of the total. More recent information in the case of China for 2012 shows that as a result of its 'open door policy' more than 650,000 foreign entities have been approved to operate in the country.[8]

This overall evidence clearly shows that global re-structuring has become a 'pervasive phenomenon.' China due to the sheer size of its market, and economic transformation including its outward orientation and 'open door policy' to foreign investment and incentives firm location, is an important part of this story. But as Bronfenbrenner and Luce (2004, p. 78-79) remark, it is only part of the story:

> "…it is a story of the world's largest multinational corporations buying and selling companies and pieces of companies, opening and closing plants,

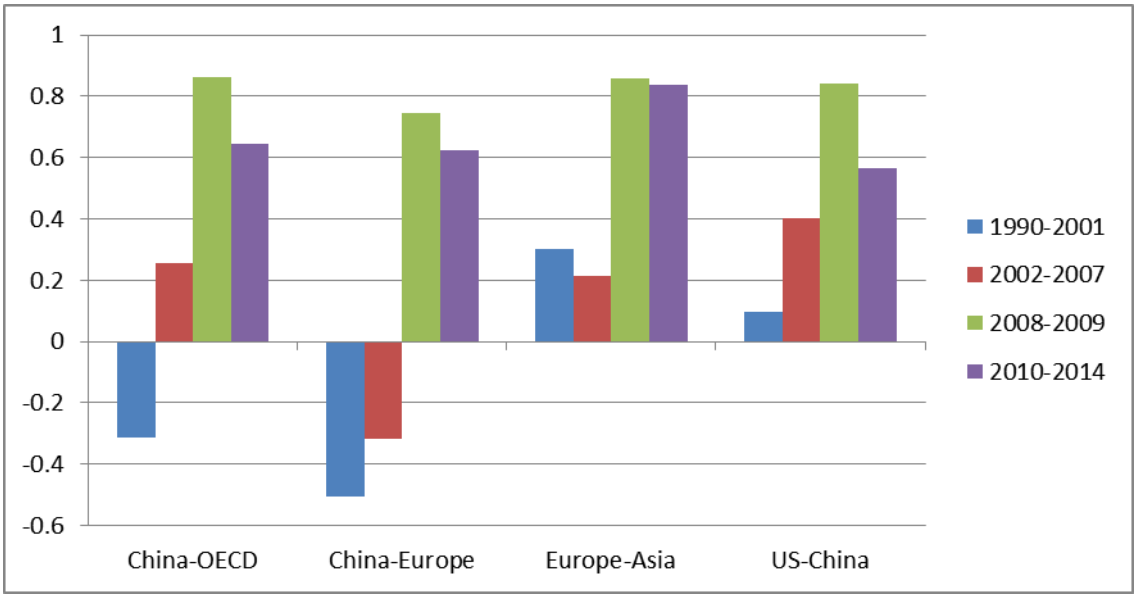
[8] PWC (2012).

> downsizing and expanding operations, and shifting employment from one community to another, all around the world. With no particular loyalty to country, industry, community of product, what our data suggest is that this global race to the bottom is driven by several unifying factors: the search for ever cheaper production costs, accessibility to expanding global markets, and the flexibility that comes from diverse supply chains in an ever more volatile global economic and political climate."

In the same way, the United States and the restructuring of Corporate America have played a key and leading role in this transformation but there are other developed countries that are following a similar strategy around the globe.

Bronfenbrenner and Luce (2004) and other authors indicate that major changes in the restructuring of production took place in the 2000s which coincide precisely with a period within which different countries, including Latin American ones, developed and developing alike, increased their degree of co-movement and synchronicity across time (see Figure 3).

**Figure 3:** Moving average correlation coefficient (5 year window) of the normalized GDP for China-OECD, China-Europe, Europe-Asia and US-China. 1990-january to 2014-may (monthly data)




Source: Authors own on the basis of OECD (2015)

An analysis of the synchronicity of the Latin America business cycle with that of the United States, Europe and China yields the same results. The synchronicity between one country/region (say region i) and a reference region (say States, Europe and/or China) (region r) is computed as (Mink, Jacobs, de Hahn, 2012),

$$(1)\varphi(t) = \frac{1}{n}\sum_{i=1}^{n}\frac{g_i(t)\,g_r(t)}{|g_i(t)\,g_r(t)|}$$

Where, $g_i(t)$ and $g_r(t)$ represent the rates of growth of country/region i and that of the reference country/region r. The synchronicity indicator $(\varphi(t))$ measures the fraction of the time during a given period that country/region i is in the same cycle phase as country/region r.

The available data for the period 1990-2012 show that Latin America and the Caribbean, and all of its sub regions degree of synchronicity with all reference regions considered (United States, Euro Zone and China) tends to rise over time and in particular staring in the 2000's decade. Between 1990 and 2002, the degree of LA's and of its sub regions cycles is synchronous with that of the United States and Europe more than 70% of the time on average. But during the 2003-2007 period the degree of synchronicity between LA and the United States increases to 89% and similar increases are recorded for LA and Europe (89%) and LA and China (87%).

**Table 7.** Synchronicity between the business cycle Latin America and the Caribbean and its sub-regions (and Mexico) with that of the United States, the Euro Zone and China (1990-2012)

| | Latin America and the Caribbean | South America | Central America | Mexico |
|---|---|---|---|---|
| **United States** | | | | |
| 1990-1994 | 74 | 68 | 85 | 80 |
| 1995-2002 | 73 | 72 | 78 | 75 |
| **2003-2007** | **89** | **99** | **80** | **100** |
| 2008-2009 | 57 | 45 | 73 | 75 |
| 2010-2012 | 83 | 92 | 80 | 100 |
| Average | 75 | 75 | 79 | 86 |
| **Euro Zone** | | | | |
| 1990-1994 | … | … | … | … |
| 1995-2002 | 73 | 72 | 78 | 75 |
| **2003-2007** | **89** | **99** | **80** | **100** |
| 2008-2009 | 64 | 58 | 80 | 88 |
| 2010-2012 | 68 | 74 | 67 | 70 |
| Average | 74 | 76 | 76 | 83 |
| **China** | | | | |
| 1990-1994 | … | … | … | … |
| 1995-2002 | 69 | 64 | 77 | 77 |
| **2003-2007** | **87** | **87** | **86** | **90** |
| 2008-2009 | 64 | 68 | 60 | 50 |
| 2010-2012 | 75 | 76 | 71 | 78 |
| Average | 74 | 74 | 74 | 74 |

Source: Pérez Caldentey and Titelman (2014)

Overall the available evidence thus shows that far from decoupling from the business cycle of developed and developing countries such as China countries, Latin America remains very much coupled to their fluctuations of economic activity. In this sense it is an indication of the degree to which Latin American performance is tied to the phenomenon of global shifts and the global restructuring of production.

### The transformation of finance

Concomitantly with the restructuring of global production of the 2000s, another change that took place within the global economy during this time, and that has had a significant impact for Latin America's development, is the increased interrelation and interdependence between

the real and the financial spheres of economic activity. This is exemplified by the recent trends observed in the commodities market.

In the case of Latin America and more precisely, South America, commodities are, on the one hand, an important component of real activity. Commodities are a major export (more than 50% of the total in several countries). These contribute substantially not only to balance of payments stability but are also a main source of government revenue. In some cases the government revenue earned from commodities far surpasses that of other sources of public income. In addition, the evolution of the price of commodities is also tied to the gross formation of fixed capital Finally, the sectors of economic activity that depend on commodities explain a large share of the generation of output and income, and of FDI inflows.

On the other hand, commodities have taken on an increasing role as financial assets in the sense that prices respond to changes in expectations about future demand conditions rather than to actual supply and demand market conditions. Some of the manifestations of the growing role of commodities as financial assets include the growth in activity in commodity future markets including commodity derivatives, the strengthening of the co-movement among different commodity prices and between commodities and stock markets, and the use of commodities as collaterals for loans and credit.

Between 1995 and 2012 the number of outstanding contracts on commodity exchanges increased from 36.6 to 182 million for futures, and from 373.6 million to 2.1 billion for options. Similarly between 1998 and 2014, the volume of over-the-counter (OTC) commodity derivative contracts expanded from US$ 4.3 billion to $2.2 trillion (notional amounts outstanding). Currently commodity derivatives represent less than 0.3% of the total across all asset classes and exchange commodity futures and options represent roughly 14% of their total sum (FCA, 2014).

The growing role of commodities as financial assets is also illustrated by the fact that commodities show over time a higher degree of association (correlation) with traditional financial assets such as equities. Table 7, below, shows the cross-correlations between the returns and volatilities of and between different commodity indices (agriculture, energy, industrial metals, livestock, precious metals and non-energy), the Dow Jones AIG and Standard and Poor Commodity Indices (DJAIG, GSCI), and with equity indices,

including the Dow Jones Industrial Average (DJIA), Standard and Poor's 500 (S&P500). The correlations were computed for the period 1991-2000, 2001-2007, 2008-2009 and 2010-2014 on a monthly basis. The results show that both in the case of returns and volatilities the percentage of statistically significant correlations (at 1%, 5% and 10% levels) increases over time.[9]

For the first period considered (1991 to 2000) the percentage of statistically significant correlations and volatilities reached 37.8% and 20%. For the second period, these increased to represent 55.6% and 28.9% of the total. In the last period analyzed the proportion of significant correlations and volatilities is even higher, 75% and 66.7% of the total respectively.

[9] Following Buyuksahin, Haigh and Robe (2010a), 'the rate of return on the I[th] investable index in period t is equal to $r_t^I = 100Log(\frac{P_t^I}{P_{t-1}^I})$ where $P_t^I$ is the value of the index I at time t. The volatility of an index in period t is $(r_t^I - \bar{X})^2$, where $\bar{X}$ is the mean value of $r_t^I$ over the sample period.'

**Table 8:** Monthy Cross correlation between returns and volatilities of commodity and equity indices (1991-2000, 2001-2007, 2008-2009 and 2010-2014)

**Monthly Returns Correlations, Jan 1991 to Dec 2000**

| | DJIA | S&P500 | DJAIG | GSCI | Agriculture | Energy | Ind. Metals | Livestock | Prec. Metals | Non-Energy |
|---|---|---|---|---|---|---|---|---|---|---|
| DJIA | 1.00 | | | | | | | | | |
| S&P500 | 0.91*** | 1.00 | | | | | | | | |
| DJAIG | 0.10 | 0.06 | 1.00 | | | | | | | |
| GSCI | 0.02 | 0.02 | 0.86*** | 1.00 | | | | | | |
| Agriculture | 0.12 | 0.12 | 0.46*** | 0.26*** | 1.00 | | | | | |
| Energy | -0.01 | 0.01 | 0.74*** | 0.96*** | 0.04 | 1.00 | | | | |
| Ind. Metals | 0.13 | 0.05 | 0.39*** | 0.19** | 0.08 | 0.10 | 1.00 | | | |
| Livestock | 0.06 | 0.01 | 0.23** | 0.19** | 0.12 | 0.05 | 0.04 | 1.00 | | |
| Prec. Metals | -0.02 | -0.07 | 0.27*** | 0.11 | 0.00 | 0.05 | 0.20** | 0.04 | 1.00 | |
| NonEnergy | 0.14 | 0.09 | 0.58*** | 0.35*** | 0.80*** | 0.09 | 0.34*** | 0.59*** | 0.14 | 1.00 |

**Monthly Returns Correlations, Jan 2001 to Dec 2007**

| | DJIA | S&P500 | DJAIG | GSCI | Agriculture | Energy | Ind. Metals | Livestock | Prec. Metals | Non-Energy |
|---|---|---|---|---|---|---|---|---|---|---|
| DJIA | 1.00 | | | | | | | | | |
| S&P500 | 0.94*** | 1.00 | | | | | | | | |
| DJAIG | 0.14 | 0.16 | 1.00 | | | | | | | |
| GSCI | -0.05 | -0.03 | 0.86*** | 1.00 | | | | | | |
| Agriculture | 0.23** | 0.20* | 0.37*** | 0.12 | 1.00 | | | | | |
| Energy | -0.11 | -0.08 | 0.79*** | 0.98*** | 0.00 | 1.00 | | | | |
| Ind. Metals | 0.44*** | 0.45*** | 0.50*** | 0.30*** | 0.10 | 0.21* | 1.00 | | | |
| Livestock | -0.03 | -0.05 | 0.04 | -0.03 | 0.03 | -0.10 | 0.07 | 1.00 | | |
| Prec. Metals | 0.03 | 0.07 | 0.51*** | 0.35*** | 0.20* | 0.30*** | 0.37*** | -0.07 | 1.00 | |
| NonEnergy | 0.34*** | 0.31*** | 0.56*** | 0.26** | 0.79*** | 0.10 | 0.59*** | 0.35*** | 0.41*** | 1.00 |

**Monthly Returns Correlations, Jan 2008 to Dec 2009**

| | DJIA | S&P500 | DJAIG | GSCI | Agriculture | Energy | Ind. Metals | Livestock | Prec. Metals | Non-Energy |
|---|---|---|---|---|---|---|---|---|---|---|
| DJIA | 1.00 | | | | | | | | | |
| S&P500 | 0.98*** | 1.00 | | | | | | | | |
| DJAIG | 0.39* | 0.50** | 1.00 | | | | | | | |
| GSCI | 0.47** | 0.56*** | 0.94*** | 1.00 | | | | | | |
| Agriculture | 0.30 | 0.37* | 0.82*** | 0.66*** | 1.00 | | | | | |
| Energy | 0.44** | 0.54*** | 0.89*** | 0.99*** | 0.54*** | 1.00 | | | | |
| Ind. Metals | 0.55*** | 0.59*** | 0.86*** | 0.78*** | 0.61*** | 0.74*** | 1.00 | | | |
| Livestock | 0.37* | 0.39* | 0.41** | 0.51** | 0.18 | 0.51** | 0.32 | 1.00 | | |
| Prec. Metals | 0.11 | 0.13 | 0.51** | 0.39* | 0.57*** | 0.30 | 0.32 | 0.39* | 1.00 | |
| NonEnergy | 0.42** | 0.48** | 0.91*** | 0.78*** | 0.95*** | 0.67*** | 0.80*** | 0.33 | 0.63*** | 1.00 |

**Monthly Returns Correlations, Jan 2010 to Jun 2014**

| | DJIA | S&P500 | GSCI | Agriculture | Energy | Ind. Metals | Livestock | Prec. Metals | Non-Energy |
|---|---|---|---|---|---|---|---|---|---|
| DJIA | 1.00 | | | | | | | | |
| S&P500 | 0.98*** | 1.00 | | | | | | | |
| GSCI | 0.72*** | 0.73*** | 1.00 | | | | | | |
| Agriculture | 0.41*** | 0.39*** | 0.57*** | 1.00 | | | | | |
| Energy | 0.70*** | 0.71*** | 0.97*** | 0.39*** | 1.00 | | | | |
| Ind. Metals | 0.71*** | 0.75*** | 0.73*** | 0.44*** | 0.64*** | 1.00 | | | |
| Livestock | -0.07 | -0.04 | 0.07 | -0.25* | 0.10 | 0.06 | 1.00 | | |
| Prec. Metals | 0.15 | 0.19 | 0.52*** | 0.36*** | 0.44*** | 0.46*** | -0.03 | 1.00 | |
| NonEnergy | 0.55*** | 0.56*** | 0.75*** | 0.92*** | 0.57*** | 0.73*** | -0.04 | 0.55*** | 1.00 |

One, two or three stars indicate that an estimate is statistically significantly different from zero at the 10%, 5% or 1% level, respectively.

**Correlations of Monthly Adjusted-Return Volatilities, Jan 1991 to Dec 2000**

| | DJIA | S&P500 | DJAIG | GSCI | Agriculture | Energy | Ind. Metals | Livestock | Prec. Metals | Non-Energy |
|---|---|---|---|---|---|---|---|---|---|---|
| DJIA | 1.00 | | | | | | | | | |
| S&P500 | 0.91*** | 1.00 | | | | | | | | |
| DJAIG | 0.12 | 0.20** | 1.00 | | | | | | | |
| GSCI | 0.06 | 0.08 | 0.78*** | 1.00 | | | | | | |
| Agriculture | -0.01 | 0.05 | 0.37*** | 0.11 | 1.00 | | | | | |
| Energy | 0.02 | 0.03 | 063*** | 0.94*** | 0.06 | 1.00 | | | | |
| Ind. Metals | -0.02 | -0.12 | 0.05 | -0.03 | -0.03 | 0.00 | 1.00 | | | |
| Livestock | -0.03 | 0.01 | 0.14 | 0.04 | 0.05 | -0.04 | -0.06 | 1.00 | | |
| Prec. Metals | 0.09 | 0.05 | 0.05 | 0.06 | -0.05 | 0.08 | 0.02 | -0.08 | 1.00 | |
| NonEnergy | 0.01 | 0.07 | 0.33*** | 0.09 | 0.77*** | 0.03 | 0.09 | 0.29*** | -0.03 | 1.00 |

**Correlations of Monthly Adjusted-Return Volatilities, Jan 2001 to Dec 2007**

| | DJIA | S&P500 | DJAIG | GSCI | Agriculture | Energy | Ind. Metals | Livestock | Prec. Metals | Non-Energy |
|---|---|---|---|---|---|---|---|---|---|---|
| DJIA | 1.00 | | | | | | | | | |
| S&P500 | 0.86*** | 1.00 | | | | | | | | |
| DJAIG | 0.06 | -0.07 | 1.00 | | | | | | | |
| GSCI | 0.02 | -0.06 | 0.72*** | 1.00 | | | | | | |
| Agriculture | 0.02 | -0.02 | 0.28*** | 0.08 | 1.00 | | | | | |
| Energy | 0.03 | -0.04 | 0.64*** | 0.97*** | 0.03 | 1.00 | | | | |
| Ind. Metals | 0.06 | 0.02 | 0.18 | 0.01 | -0.08 | -0.01 | 1.00 | | | |
| Livestock | 0.24** | 0.19* | -0.02 | -0.06 | -0.13 | -0.02 | 0.01 | 1.00 | | |
| Prec. Metals | -0.09 | -0.12 | 0.13 | -0.01 | 0.01 | -0.04 | 0.41*** | -0.06 | 1.00 | |
| NonEnergy | 0.21* | 0.11 | 0.42*** | 0.09 | 0.63*** | 0.01 | 0.39*** | -0.06 | 0.32*** | 1.00 |

**Correlations of Monthly Adjusted-Return Volatilities, Jan 2008 to Dec 2009**

| | DJIA | S&P500 | DJAIG | GSCI | Agriculture | Energy | Ind. Metals | Livestock | Prec. Metals | Non-Energy |
|---|---|---|---|---|---|---|---|---|---|---|
| DJIA | 1.00 | | | | | | | | | |
| S&P500 | 0.93*** | 1.00 | | | | | | | | |
| DJAIG | 0.55*** | 0.69*** | 1.00 | | | | | | | |
| GSCI | 0.56*** | 0.76*** | 0.93*** | 1.00 | | | | | | |
| Agriculture | 0.34* | 0.41** | 0.77*** | 0.60*** | 1.00 | | | | | |
| Energy | 0.50** | 0.70*** | 0.87*** | 0.99*** | 0.53*** | 1.00 | | | | |
| Ind. Metals | 0.64*** | 0.83*** | 0.85*** | 0.88*** | 0.83*** | 0.83*** | 1.00 | | | |
| Livestock | 0.39* | 0.55*** | 0.59*** | 0.67*** | 0.27 | 0.64*** | 0.67*** | 1.00 | | |
| Prec. Metals | 0.50** | 0.68*** | 0.74*** | 0.83*** | 0.40* | 0.80*** | 0.81*** | 0.61*** | 1.00 | |
| NonEnergy | 0.58*** | 0.73*** | 0.94*** | 0.87*** | 0.84*** | 0.79*** | 0.87*** | 0.59*** | 0.75*** | 1.00 |

**Correlations of Monthly Adjusted-Return Volatilities, Jan 2010 Jun 2014**

| | DJIA | S&P500 | GSCI | Agriculture | Energy | Ind. Metals | Livestock | Prec. Metals | Non-Energy |
|---|---|---|---|---|---|---|---|---|---|
| DJIA | 1.00 | | | | | | | | |
| S&P500 | 0.95*** | 1.00 | | | | | | | |
| GSCI | 0.72*** | 0.74*** | 1.00 | | | | | | |
| Agriculture | 0.28** | 0.35** | 0.45*** | 1.00 | | | | | |
| Energy | 0.72*** | 0.72*** | 0.94*** | 0.21 | 1.00 | | | | |
| Ind. Metals | 0.53*** | 0.60*** | 0.69*** | 0.69*** | 0.46*** | 1.00 | | | |
| Livestock | -0.04 | -0.06 | 0.04 | 0.02 | 0.07 | -0.06 | 1.00 | | |
| Prec. Metals | 0.14 | 0.20 | 0.26* | 0.36*** | 0.14 | 0.54*** | 0.09 | 1.00 | |
| NonEnergy | 0.41*** | 0.48*** | 0.65*** | 0.88*** | 0.38*** | 0.89*** | -0.04 | 0.53*** | 1.00 |

Source: Authors own on the basis of Bloomberg (2014).

One, two or three stars indicate that an estimate is statistically significantly different from zero at the 10%, 5% or 1% level, respectively.

These results throw severe doubt on the explanation that investment in commodity futures offers an opportunity to hedge equity risk. The diversification benefits of commodity futures view is based on two assumptions. The first is that commodities and stocks yield similar returns over time so that they are adequate investment substitutes. The second is that that commodities and stocks are, in terms of levels and volatilities, either not correlated or negatively correlated over time so that investing a part of the portfolio in commodities lowers its total risk.[10]

[10]This view has been advanced by Gorton and Rouwenhorst (2004) and more recently by Buyuksahin, Haigh and Robe (2010b). Gorton and Rouwenhorst find for a 45 year period running from July 1959 to the end of 2004 that 'the average annualized return to a collateral investment in commodity futures (5.23%) is comparable to the return on the SP500 (5.65%) and that both outperformed corporate bonds (2.22%)'. Also both authors sustain that commodity futures have a lower volatility that stocks (with standard deviations of 3.47 and 4.27 respectively). Finally the coefficient of correlation between commodity futures and stocks are statistically insignificant (0.05 and -0.06 on monthly and quarterly basis). These results are corroborated by Buyuksahin, Haigh and Robe for the period January 1991 to May 2008. These authors also find that there is no co-movement between the returns and volatilities of equities and commodities suggesting that 'commodities have retained their role as a portfolio

A more realistic explanation is that investment in commodities can present substantial profit opportunities. Commodity futures trading as well as the derivative industry, and in particular, the derivatives on mortgage backed securities, expanded significantly around the time of the burst of the bubble dot com and the ensuing stock market crash in the early 2000s. This may indicate the fact that commodities futures along other derivatives became a portfolio asset class, as other financial investments such as equities lost their profitability lure.

Also the highly liquid-low interest environment that prevailed before the Global Financial Crisis combined with the high rate of return of commodity futures relative to equities from 2004 to 2008 provided an incentive to invest in commodities. According to Bhardwaj (2010), between January 31, 2004 and June, 2008, commodity futures' rate of return (19.5%) more than doubled that of equity (6.0%). Finally, the commodity investment option was sanctified by Gorton and Rouwenhorst (2004) who showed that the risk of investing in commodities was lower than that of equities. Thus, investing in commodities yielded a high rate of return to investment and with a lower risk relative to other investment alternatives.[11]

Finally, another recent illustration of the consideration of commodities as a financial asset is the use of commodities as collaterals in financing deals to raise and invest liquidity. This has become a general practice for a wide range of commodities including gold, copper, iron ore, and to a lesser extent, nickel, zinc, aluminum, soybean, palm oil and rubber. Some of the most illustrative examples are available in the case of China where financing commodity deals occur in the presence of capital controls and a significant positive local to foreign interest rate differential.[12]

The most simple financing deal consists, in general terms, in a domestic company using a warrant of a commodity (a document issued by logistic companies which represent the ownership of the underlying asset, in this case a commodity) to borrow a foreign exchange short-term loan. The warrant is then sold for cash in the domestic market and the proceeds are invested in an asset yielding a higher rate of return than the interest to be paid on the foreign exchange loan (due to the significant positive local to foreign interest rate differential, i.e. the difference between a US letter of credit interest and a Chinese wealth management asset). The asset is then liquidated and the foreign loan is paid. [13]

This procedure can be made continuous to earn recurrent returns as follows: a domestic company using a warrant of a commodity (a document issued by logistic companies which represent the ownership of the underlying asset, in this case a commodity) to borrow a short-term loan in foreign exchange. The warrant is then sold (i.e., exported) by the company to an offshore subsidiary and receives the equivalent of the value of the warrant in foreign exchange. In this way foreign exchange in brought into the country circumventing any existing

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diversification tool' (p. 4). Using a longer time series (August 1959-April 2009) Bhardwaj (2010) concludes that the correlation between the US equities and commodity returns has increased over time (much in line with our results presented above). The correlation coefficient for both equals roughly 0.15 and 0.37 for the periods August 1959-April 2009 and January 2001-April 2009.

[11] Besides the hedging hypothesis investment in commodities is rationalized in terms of the search for yield which refers to choosing riskier assets when the return on safe assets is low. In the case of commodities however Gorton and Rouwenhorst (2004) along with other research provided the intellectual foundation for showing that the search for yield did not apply to commodities. In a low interest rate environment the rate of return on some 'safe assets' such as commodities can be very high relative to other investment alternatives.

[12] See Credit Suisse (2014a, 2014b), Goldman Sachs (2014), Morgan Stanley (2014) and Tang and Zhu (2014).

[13] According to Goldman Sachs (2014, p. 13) "the commodity- related outstanding FX borrowings are roughly 31% of China's short-term FX loans (duration less than a 1 year)."

capital controls. The foreign exchange is then converted to local money and invested in asset yielding a higher rate of return than the interest to be paid on the foreign exchange loan (due to the significant positive local to foreign interest rate differential). The company then obtains a new foreign exchange loan and buys a warrant from the offshore subsidiary and then sells the warrant again bringing in foreign exchange. With the proceeds the company pays the first loan but in this case does not need to liquidate the investment. The process of buying and selling warrants between the domestic company and the offshore subsidiary is repeated to pay back the second foreign exchange loan.[14]

The profits that can be made through these financial deals depend on the velocity of circulation, the volume of the commodity in inventory, and the spot unit price of the commodity. The velocity of circulation refers to the frequency of rolling the trade forward and depends on the excess benefit or cost of owning the asset, i.e., on the roll yield. The volume of the commodity in inventory depends on the demand for commodity as collateral. Finally, the spot price of the commodity depends on the conditions of demand (or more precisely excess demand) in the market for that particular commodity.

These effects of these variables and their interrelationships on profits and returns can be ascertained by expressing the real return on a commodity (or risk premium) as a function of the collateral return, the spot return and the roll return. That is,

$$(2) R_{rcr} = R_c + R_{spot} + R_r$$

Where, $R_{rcr}$= real commodity return, $R_c$=collateral return, $R_{spot}$ =spot return, and $R_r$= roll return.

The collateral return refers to the interest income earned on the investment of the value of the collateral needed to purchase the commodity or in the above case the commodity warrant.

Traditionally the collateral return is equated with the yield on a short-term US treasury bill since the normal practice is to avoid high levels of risk, invest in a highly liquid asset and preserve the capital value of the investment. However, in the particular where commodities themselves are used as collaterals for loans, the collateral return is equal to the domestic-foreign currency interest rate differential. That is,

$$(3)\ R_c = \alpha(r_d - r_f)$$

Where,

[14] More complicated financing deals involve more than one loan per unit of copper with staggered due dates (Credit Suisse, 2014a and 2014b). Goldman Sachs (2014, p.11) explains the commodity collateral financing deal as follows: “While commodity financing [round tripping] deals are very complicated, the general idea is that arbitrageurs borrow short-term FX loans from onshore banks in the form of LC (letter of credit) to import commodities and then re-export the warrants (a document issued by logistic companies which represent the ownership of the underlying asset) to bring in the low cost foreign capital (hot money) and then circulate the whole process several times per year. As a result, the total outstanding FX loans associated with these commodity financing deals is determined by: the volume of physical inventories that is involved, commodity prices and the number of circulations. Our understanding is that the commodities that are involved in the financing deals include gold, copper, iron ore, and to a lesser extent, nickel, zinc, aluminum, soybean, palm oil and rubber.”

$r_d$ = return on domestic assets; $r_f$ = interest on foreign denominated loans and α>0.

The spot return is the difference between the expected spot price of a commodity in the future at time t+i ($S_{t+i}$) and the price of the same commodity in the present (at time t) ($S_t$).

$$(4) R_{spot} = \frac{S_{t+i} - S_t}{S_t}$$

The spot return depends on the demand and supply of the stocks of a commodity. As the supply stock of a commodity is fully inelastic, the spot return depends on the expected change in the demand for that given commodity (Davidson, 1978, 2008; Choski, 1984). As a result the spot return can be expressed as function of (expected) excess demand in the commodity market ($EXD^e$).

$$(5) R_{spot} = \beta EXD^e, \text{ where ß>0.}$$

The roll return captures the differences in prices along a commodity term structure and is in fact the carry return for holding a commodity contract. It can be simply be defined as the difference between the price for commodity contract in the 'nearby future at time t+i ($F_{t+i}$) and the current or most recent future at time t ($F_t$)' (Hannan, 2015). That is,

$$(6) R_r = \frac{1}{T}\left(\frac{F_{t+i} - F_t}{F_t}\right)$$

Where T = time horizon. For analytical purposes T=1.[15]

Contrary to the spot price, the future price of a commodity contract reflects flow-supply considerations. As a result the elasticity of the future price to changes in demand is much lower than that of the spot price (Choski, 1984; Davidson, 1978, 2008).

Equations (4) and (6) also allow seeing the effects of backwardation and contango on the real commodity returns. Other things being equal, backwardation ($S_v > F_v$) leads to positive returns ($R_{rcr} > 0$) and increases in the spot price over and above its future price translate into an increase in returns $\Delta R_{rcr}$>0. A situation of contango ($S_v < F_v$) has the opposite effect, $R_{rcr} < 0$ and $\Delta R_{rcr}$<0. Under this scenario positive returns require that the interest rate differential and/or excess commodity demand must offset the negative effect of contango.

Substitution of (5), (4) and (3) into (2) yields,

$$(7) R_{rcr} = \alpha \Delta r_{diff} + \beta EXD^e + \frac{F_{t+i} - F_t}{F_t}$$

Equation (7) states that commodity real returns under the scheme of financing involving commodities as collateral for loans, depends on the domestic-foreign interest rate differential ($\Delta r_{diff}$), on the (expected) excess demand for the commodity and on the commodity term structure.

[15] According to Hannan, $F_{t+i}$ converges towards the expected spot price $S_{t+i}$ so that $\frac{F_{t+i}-F_t}{F_t}$ converges towards $\frac{S_{t+i}-F_t}{F_t}$, which is the definition for the risk premium found in Gorton and Rowenhorst (2004) in the absence of the return on collateral.

$$(8)\Delta R_{rcr} = \frac{\delta f}{\delta \Delta r_{diff}} \Delta\left(\Delta r_{diff}\right) + \frac{\delta f}{\delta\left(\frac{F_{t+i} - F_t}{F_t}\right)} \Delta\left(\frac{F_{t+i} - F_t}{F_t}\right) + \frac{\delta f}{\Delta EXD^e} \Delta EXD^e$$

Where $f = \left(\Delta r_{diff},\ F_{t+i}, EXD^e\right)$

Assuming backwardation as the norm and that the relationship between $F_{t+i}$ *and* $F_t$ remains stable over time, equation (7) can be expressed as,

$$(9)\Delta R_{rcr} = \frac{\delta f}{\delta \Delta r_{diff}} \Delta\left(\Delta r_{diff}\right) + \frac{\delta f}{\Delta EXD^e} \Delta EXD^e$$

Equation (9) shows that rising real commodity returns depend on the increase in the interest rate differential and increased excess demand in the commodity market.

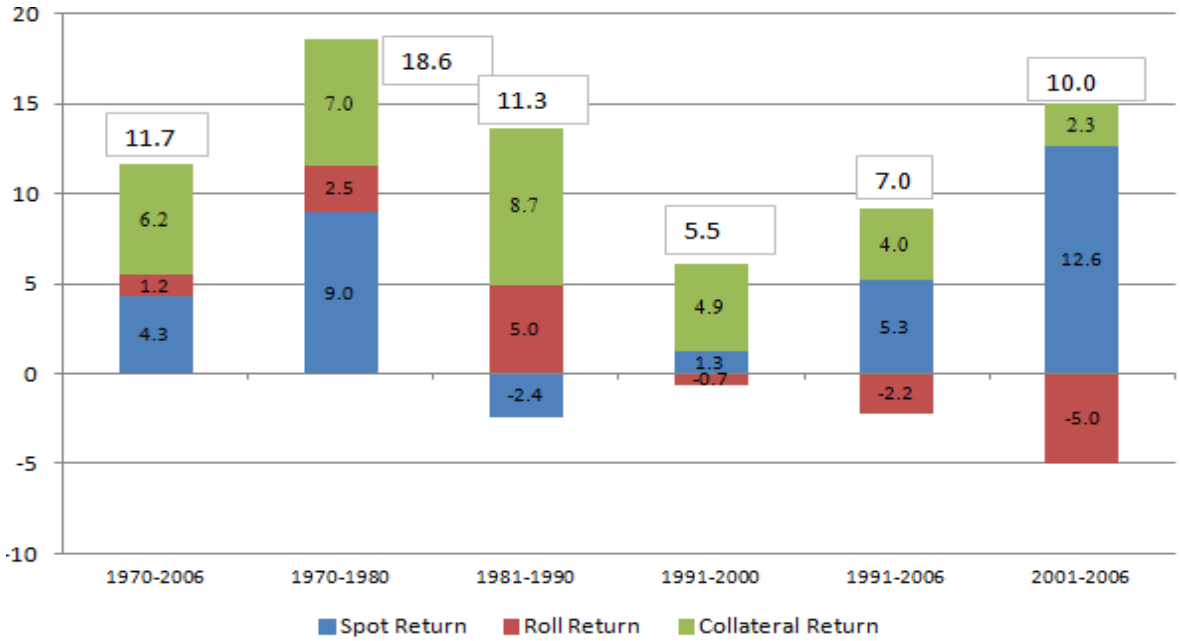
For any given spot price level of a commodity i, an increase in commodity inventories or what is the same thing an increase in the demand for commodity collateral can increase the revenues from interest rate differential provided the domestic return and the foreign rate of interest do not change. A higher value of the collateral translates into a higher volume of investment and hence into a higher revenue stream. A similar effect occurs if positions are rolled more frequently over time (i.e., if the velocity increases).

However, most likely, if the demand for commodity collateral increases (i.e., higher inventories) and it is sufficiently important, this will not only translate into higher returns via an income effect such as that described above. It will also create excess demand for the commodity ($\Delta EXD^e$>0) and generate higher returns($\Delta R_{rcr} > 0$) via a price effect.[16]

Figure 4 below shows the evolution of the return on the Goldman Sachs commodity index during the period 1970-2006 and of its components. The figure shows that, for the most part, roll returns play a minor part in the explanation of the total return. The roll return explains only 10% of the total return on average for the whole period. And it is negative in the 1990's and in the first half of the 2000's during the 'commodities boom.' [17]

[16] As put by Credit Suisse (2014a, p.6) in the case of copper: "Financing deals have increased apparent demand (domestic production plus imports less exports) for the red metal (not necessarily real industrial use) and consequently lend support to the copper price."
[17] This fact has also been noted by Kemp (January, 2015) in "What went wrong with the Great Commodity Boom?".

**Figure 4:** Components on the total return on the Goldman Sachs Commodity Index, 1970-2006




Source: Demidova-Henzel & Heidorn (2007)

As a result, in line with our analysis above, the total return on commodities seems to be driven mainly by spot and collateral returns. For the entire period spot and collateral returns account for 53% and 67% of the total return on average. Moreover, the evidence shows that the spot return was the greater part of the total return in the periods 1970-1980 and 2001-2006. The former period coincides with the oil shocks and oil price hikes of 1973 and 1979.[18] The latter period 2001-2006 coincides with the commodity boom.[19]

In the aftermath of the Global Financial Crisis (2007-2009), as the dynamism of spot prices slowed in relation to the first half of the 2000s, and given the recent history of negative roll yields, focusing on collateral returns to maintain high total returns is simply a reasonable 'capitalist' business strategy. Heightening the importance of the collateral return requires accumulating inventories of commodities. And in fact this constitutes one of the main stylized facts that characterizes commodity markets in the aftermath of the Global Financial Crisis. Also the available evidence indicates that the accumulation of inventories is carried out by the financial sector and more precisely by some of the former investment banks of the United States, including Goldman Sachs, JP Morgan, and Morgan Stanley. As noted by the United States Senate Permanent Subcommittee on Investigations in their report on Wall Street Bank involvement with Physical Commodities (November, 2014, p.3):

[18] Bhardawj also mentions the fall of the Breton Woods monetary management system. Gorton, Hayashi and Rouwenhorst (2012) argue that inventory shortages in a number of commodities created greater uncertainty in the market and led to higher risk premiums, and that as a result the increase in spot prices responded to 'fundamentals.' See Choski (1984) for a different interpretation of the increase in spot prices in the 1970's attributing it to speculation.

[19] Similar results obtain using the Dow Jones-AIG Commodity Index for the period 1991-2006 (Demidova-Menzel and Heidorn, 2007). Between 2001-2006 the spot , roll, and collateral return yielded 14.5%, -.5.5% and 11.3% respectively. The roll return is also negative for the three sub-periods analyzed (1991-2000, 1991-2006 and 2001-2006).

> "Until recently, Morgan Stanley controlled over 55 million barrels of oil storage capacity, 100 oil tankers, and 6,000 miles of pipeline. JPMorgan built a copper inventory that peaked at $2.7 billion, and, at one point, included at least 213,000 metric tons of copper, comprising nearly 60% of the available physical copper on the world's premier copper trading exchange, the LME. In 2012, Goldman owned 1.5 million metric tons of aluminum worth $3 billion, about 25% of the entire U.S. annual consumption. Goldman also owned warehouses which, in 2014, controlled 85% of the LME aluminum storage business in the United States. Those large holdings illustrate the significant increase in participation and power of the financial holding companies active in physical commodity markets"[20]

Following this reasoning it would not be uncommon to observe a positive association between the demand for commodities as collateral (and higher levels of inventories) and the cost of storage net of the convenience yield (measured as the spread between spot and future prices divided by spot prices, i.e., the rate of return) can be observed in the market for commodities. To put it another way, within this context, higher levels of inventories need not be accompanied by a lower price spread as the standard theory suggests.

In fact the positive association between volume and the cost of storage net of the convenience yield is a characteristic feature displayed by some commodities markets during at least the last decade. We illustrate this with the case of copper and oil in Figure 5-6 below.

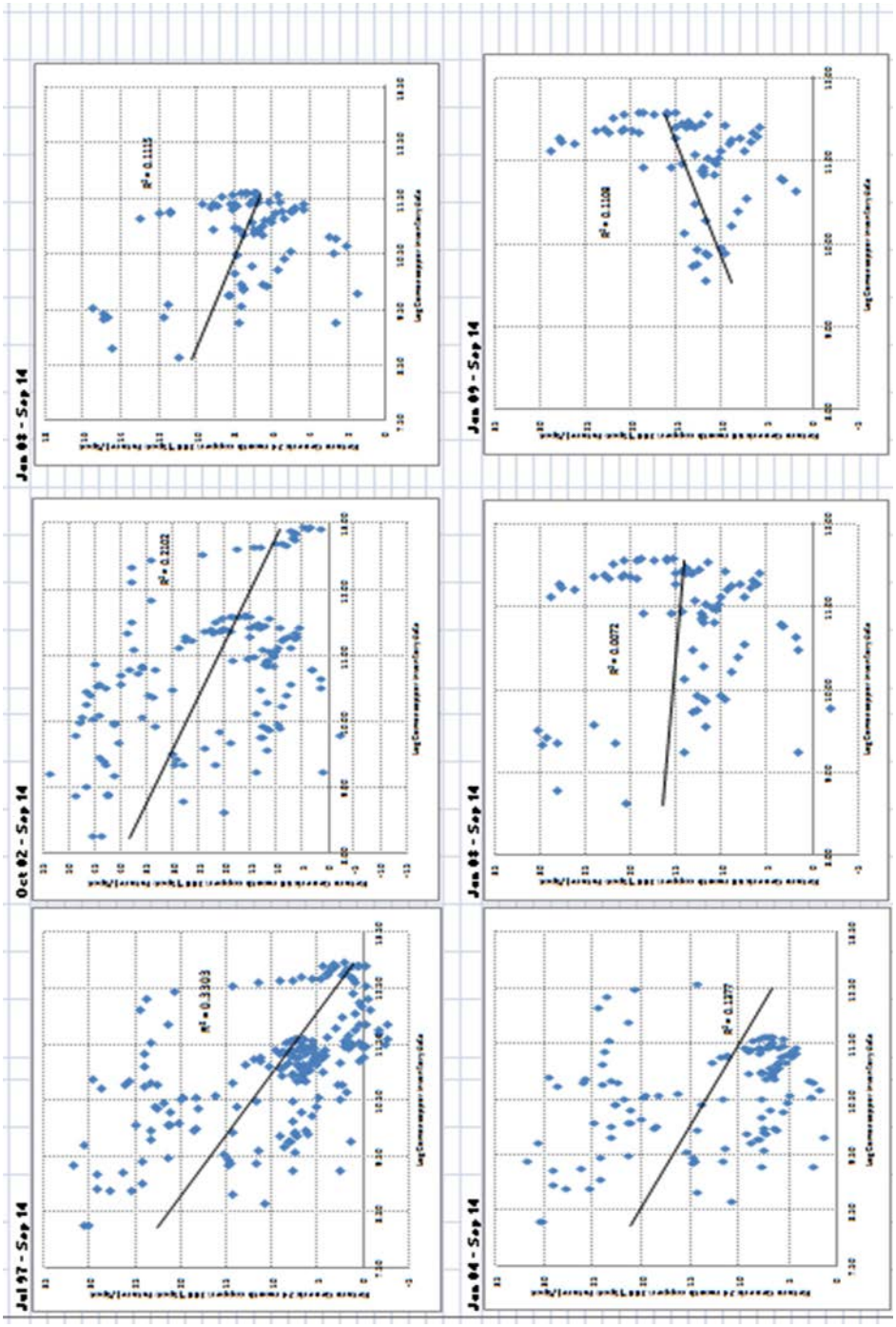
These figures show a scatter plot between quarterly data of the cost of storage net of the convenience yield (measured as the spread between spot and future prices divided by spot prices, i.e., the rate of return) on a commodity and its inventory level for several sub periods between January 1995 for crude oil, and July 1997 for copper, to September 2014 for both of these commodities.

The figures 7-8 show a clear change in the relationship between both variables over time by taking the whole period and then rolling forward the start of the period to focus on the empirical evidence of the past decade. In the case of oil the relationship starts as negative for the whole period (January 1995-September 2014). As we roll forward in time the start date maintaining constant the end date the negative relationship between becomes much weaker as can be seen by a shallower slope and a reduction in the value of the correlation coefficient. The correlation coefficient that captures the negative association between both the cost of storage net of the convenience yield on commodities and their inventory levels declines from 0.26 between January 1995 and September 2014 to 0.03 between January 2004 and September 2014. From January 2005 onwards the negative relationship changes to a positive one.

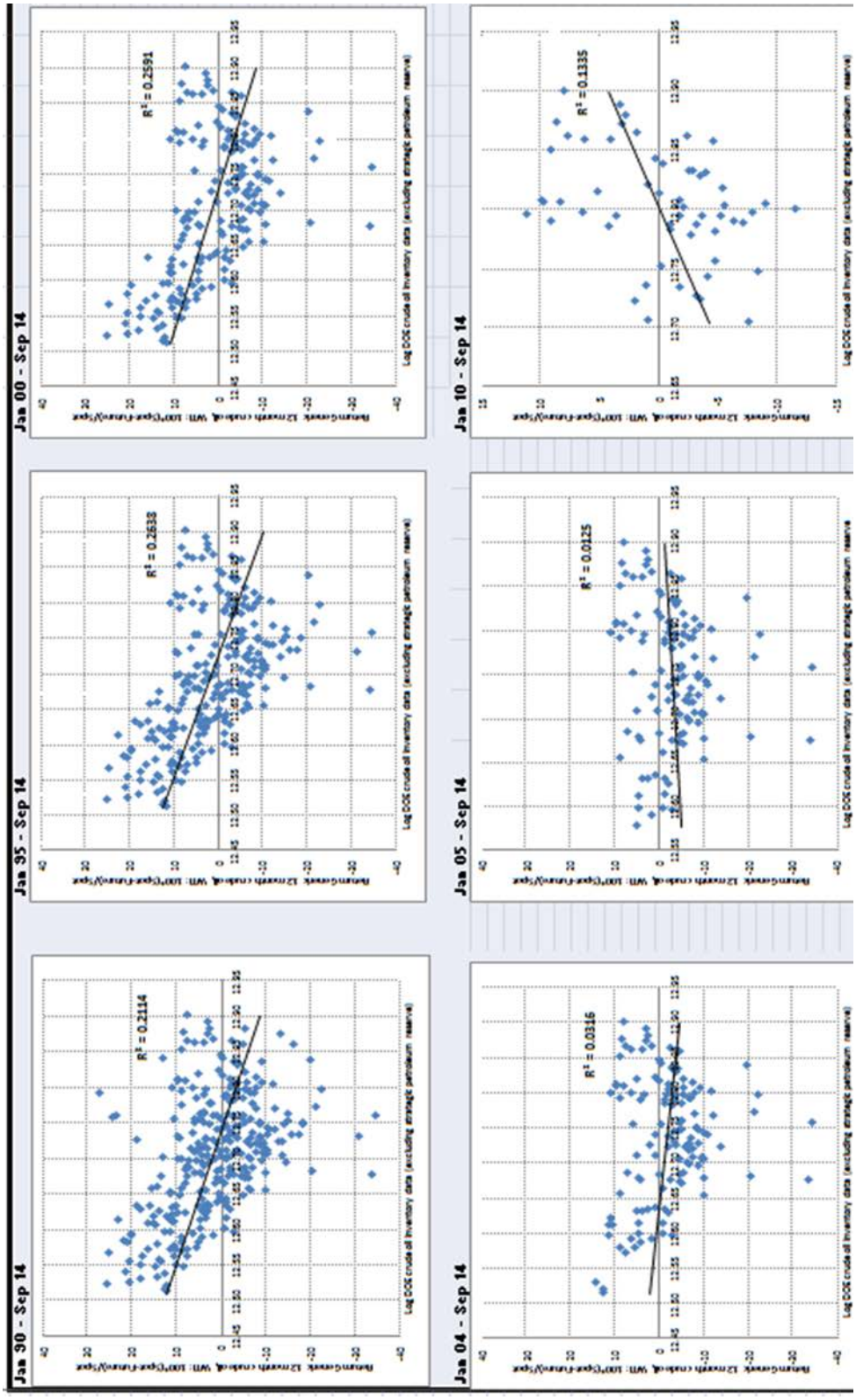
A similar story occurs in the case of copper. For the whole period spanning from July 1997 to September 2014, the relationship is negative with a correlation coefficient of -0.33, declining (in absolute value) to -0.13 and -0.11 between January 2004-September 2014 and January 2008-September 2014 respectively. Thereafter the relationship becomes positive, as in the case of crude oil, albeit at a later date.

[20] It should be noted that these former investment banks renamed commercial banks after the Crisis saw an important decline in leverage. Goldman Sachs, and Morgan Stanley saw their leverage fall from roughly 33 to 12 between 2007-2008 and 2012 (according to our calculation based on Bloomberg) and thus had to turn to other business strategies such as investment in commodities to maintain their profit levels.

**Figures 5-6** Scatter plot between rate of return on copper and inventories (July 1997-September 2014)
Source: On the basis of Bloomberg (2014).



**Figures 7-8** Scatter plot between rate of return crude oil and inventories (January 1990 and September 2014) (Continuation)
Source: On the basis of Bloomberg (2014).



The positive relationship between the rate of return on a commodity and its inventory level seem to defy the traditional explanation of commodities prices at different delivery dates based on the theory of storage. At a very general level, the theory of storage states that as inventory increases (a decline), spot prices tend to fall (increase) below (above) future prices (the cost of storage decreases) net of carrying costs. Nonetheless the empirical evidence positing a positive relationship between the spread between spot and future prices and inventories presented above is consistent with the concept of user costs developed by Keynes (1936).

Keynes developed the concept of user cost as a component of the supply price of a firm. He also used it in a discussion of the decision to produce raw materials and focused on the case of copper.

Keynes defined user cost as (1936, p. 70): "the reduction in the value of the equipment due to using it as compared with not using it after allowing for the cost of the maintenance and improvement which it would be worthwhile to undertake and for purchases from other entrepreneurs." Its amount is determined by 'the expected sacrifice of future benefit involved in present use'. In the particular case of copper, the marginal cost of producing, say a ton of copper today instead of tomorrow must include the future value of copper. And if the price of a ton of copper is expected to increase in the future, the cost of producing a ton of copper in the present must include the cost of the foregone profits that could have been obtained by deciding to abstain from producing copper today in order to produce tomorrow and sell at a higher price.[21]

The same reasoning and logic applies to the commodity financing deals described above whose focus is the trading commodity futures. In this particular case user costs are computed with regard to holding or not holding a commodity as inventory rather than to the decision of producing or not producing it. Also user costs can be directly related to commodity rates of return rather than to their price. If a commodity dealer trading in commodity futures decides to reduce inventory by a given volume, say by x, then, within the context described above, the user cost associated with this decision is the foregone profits (determined by the collateral return) that the dealer could have obtained by holding and using the x volume of inventory in a commodity collateral financing deal. In short, the capitalist commodity collateral business strategy can be rationalized as a means to reduce user cost to increase profits.

**Conclusion**

In the 2000s decade Latin America performance exhibited two unique historical features. First, the region expanded at one of the fastest pace in three decades with a current account surplus. Second, for the first time the region recovered V- shaped from a global financial crisis.

The paper argues that this unusual economic performance is due to changes in the way global capitalism organizes production and finance. The former refers to a corporate strategy using multinational corporation networks to move industries, production and employment across the globe taking advantage of cheaper production costs, expanding global markets and the increasing importance of global production chains. These production shifts occur

[21] This example is taken from Davidson (2008).

across a wide spectrum in industries of developed economies and in particular of the United States. During the 2000s decade, due to its strategic location, size and open door policies, China, along with other Asian countries became an important center of operations for this corporate strategy. At the same time there were changes in the organization of finance exemplified by the increasing integration between the real and the financial spheres and is exemplified by the way commodities were used in the 2000s decade as financial assets.

The changes in the way capitalism organizes production and finance had an important impact on Latin America´s performance. These changes are at the root of the commodity boom that softened Latin America´s external constraint, improved fiscal position and space resulting in higher levels of domestic investment and greater access to external finance. These same factors account for the current economic deceleration that is affecting all of Latin American economies.

This hypothesis questions those interpretations that place the weight of the explanation of Latin America´s performance on the improved macroeconomic management, a set of favorable and fortuitous external conditions and on the changes in the global economic geography led by the emergence of developing economies. By extension the analysis also throws doubt on the perception that developed economies have lost preeminence at the global level and that the distribution of world economic and political power is shifting towards the developing world. Moreover, the changes in production and finance have increased the complexity in the organization and workings of market economies and also the difficulty in predicting their future behavior and performance.

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**Author contact:** Esteban.PEREZ@eclac.org

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# Fight against unemployment: rethinking public works programs

Amit Bhaduri, Kaustav Banerjee and Zahra Karimi Moughari
[Centre for Economic Studies & Planning, Jawaharlal Nehru University, New Delhi, India; Centre for the Study of Discrimination & Exclusion, Jawaharlal Nehru University, New Delhi, India; and Department of Economics, University of Mazandaran, Babolsar, Iran]



**Abstract**
The processes of globalization have succeeded in shifting the focus from productive employment generation and expansion of domestic markets to export competitiveness. The disastrous effects of such a shift have been exacerbated by the recent global crisis. The need of the hour is to rethink public works programs to mitigate such effects and to move societies towards full employment. The paper addresses precisely these issues with arguments for rethinking public works programs for the skilled and unskilled workforce. The question of externalities, principle of financing and the positive social impacts of inclusion are also discussed.

**Keywords** unemployment, public works, effective demand, skill, inclusion

## 1. Introduction

As the global crisis deepens and most industrialized and developing countries continue facing the risk of a prolonged labour market recession, it is leading to a catastrophic rise in unemployment and decline in real wages. Several countries have used neoclassical tools to mitigate this, primarily by moving legislation to have more flexible labour markets. The oft-repeated neoclassical logic has been that rigidities in labour markets are the barriers to recovery. The economic mechanism being that of lowering interest and wage rate to incentivize private investment; but the plans have not succeeded so far due to a lack of effective demand. On the other hand, public investment driven public work projects, by encouraging social participation, can be the way to stimulate economic recovery and expansion in employment. Along similar lines, the International Labor Organization (2009) reiterates that it is crucial to implement a coherent, job-oriented recovery strategy to address the basic needs of millions workers and their families, and emphasizes that employment and social protection must be at the centre of fiscal stimulus measures to protect the vulnerable groups and to reactivate investment for raising aggregate demand in the economy.

Public works become closely interlinked to social programs in contemporary democracies under the tension of various kinds of identity politics of exclusion and inclusion. It has the potential to alleviate these tensions and contrariwise, if badly conceived such programs can also heighten such tensions. This paper explores new frontiers of public works program from this viewpoint; and investigates how public work programs can be effective in combating labour market problems in economically and socially meaningful ways. The paper consists of six parts. The second part, after this introduction, reviews briefly the theoretical debate of market mechanism and unemployment related to classical and Keynesian paradigms regarding voluntary and involuntary unemployment and their policy implications. Section three draws a clear distinction between Keynesian demand management and new public works programs with emphasis on the distinction between demand side and supply side of the problem. Section four focuses on two issues which could be the basis for demarcating new

employment policies, i.e. public works programs with and without skill components relating it to questions of benefits, externality and labour productivity. Section five discusses the principle of finance sharing of public works programs and its possible effects on inflation and private investment. In the last section, we conclude with a discussion of possible inclusion benefits of newly designed public works programs.

## 2. Market mechanism and unemployment

The issue that divides economists most sharply into opposing camps is unemployment because it impinges directly on how the relation between the market and the state affects the majority of citizens in market democracies. The course of the debate and policies reflect this abundantly. Keynes rejected the concept of voluntary unemployment as misleading, the classics and neo-classics insists on it in various ways to date. The debate does not die down and, at every turn with the revival of the ideology that, "the market always knows the best and reconciles public with private interest", the notion of voluntary unemployment continues to be recreated in new mathematical guises, basically as choice between leisure and work,[1] search under incomplete information[2], persistent frictional unemployment;[3] even Marx's notion of the "reserve army of labour"[4] may be reinterpreted with some twist as natural rate of unemployment defined by the Phillips curve[5] formulation and non-accelerating inflation rate of unemployment (NAIRU)[6]. Fashions come and go, but unemployment continues to haunt market democracies, at times with a low rate, but at times at threateningly high rates, as in parts of Europe today.

The alternative understanding associated with the names of Keynes and Kalecki places at the centre of the problem of unemployment deficient demand in the market for products, not for labour. Marx diagnosed lack of demand and under-consumption as a recurrent problem of capitalism with insightful comments about how money interferes with Say's law in his formulation of money-capital-money circuit.[7] Never the less, his theory was incomplete in a crucial respect in so far as he failed to link his theory of exploitation of individual worker with the theory of realization of aggregate surplus through adequate demand in the market. Greater exploitation of individual worker creates more surplus value per worker; however unless we know how many workers would be employed by the capitalists in view of market demand the total surplus that can be realized into monetary profit is indeterminate. That essential link was provided by Kalecki[8] in his theory of profits along with his theory of mark up pricing pointing out the link between money wage and the price level. Keynes with his circle of economists in Cambridge developed the same theory independently enriching it with the theory of how the multiplier works as a convergent geometric series,[9] how money as a store of value in an uncertain world interferes to create deficiency in demand and ineffectiveness in monetary policy. He also questioned the policy lowering money wage by pointing out the link between price and money wage (also pointed out by Kalecki) which makes real wage an endogenous variable unsuitable as a policy instrument.

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[1] See Lucas (1981), *Studies in Business Cycle Theory*.
[2] See Diamond (1982) on Search unemployment.
[3] See Pigou (1933) *Theory on Unemployment.*
[4] See Marx (1885) *Capital,* Volume I.
[5] See Phillips (1958) *The Relationship between Unemployment and the Rate of Change of Money Wages in the United Kingdom 1861–1957*, Economica.
[6] See Friedman (1968) The role of monetary policy
[7] See Marx, (1893) Capital Vol. 2.
[8] See Kalecki, (1971) *Selected Essays on the Dynamics of the Capitalist Economy*.
[9] See Kahn, (1931) *The relation of home investment to unemployment*

Keynes and Kalecki provided economists with the powerful idea that, income determination should be viewed as a circular process in which expenditure determines income breaking the analogy between the individual and the society. Aggregate income is driven by aggregate demand, consisting of the level of consumption and investment expenditure and net export surplus in an open economy. The link with under-consumption theory and class distribution of income is clear. Redistribution in favour of the working class with a higher propensity to consume would stimulate demand. Higher public and private investment would also stimulate demand, but higher private investment would requires a better "climate for private investment" which is usually difficult to achieve in depressed situations, particularly in the short run. Similarly, achieving greater export surplus would increase the size of the domestic market. However, one country's export is another country's import in a zero sum game. It is hard to see how this can be achieved by most countries suffering from unemployment in a globalizing world.

Keynes (1936) argued that market economies have two fundamental failings: they are incapable of generating full employment and of improving the income distribution when are left to their own devices. So, governments must intervene to solve the market failures. Public works circumvent the problems of relying on private spending and investment for full employment. Robinson (1949) had analysed how public works can serve as a counterweight to the fluctuations in investment undertaken by profit seeking entrepreneurs. Public spending on employment-intensive activities tends to have a high multiplier. Public investment represents a major opportunity to generate both employment and address some development challenges. However, Kalecki[10] had clearly foreseen the tension that creeps up between capitalists and workers when States followed continuous full employment policies over time. The relation between the market and policies to tackle unemployment is indeed fraught with tensions in a democracy[11].

In contemporary times, public works schemes are viewed by many economists as programs of promoting inclusive development.[12] Such programs can modify the economic growth path, so as to include segments of the population that have been hitherto excluded from remunerative productive employment; This could potentially also lead to a reduction in a number of other social and economic costs which tend to increase along with unemployment. Hence, designing a new kind of public work programs, with direct involvement of local communities, will make a maximum impact in creating jobs and will help to raise productivity and skills to empower people in deprived regions and will mitigate ecological problems; eventually even private investment would "crowd in" as the domestic market expands to revitalize the whole economy.[13]

[10] See Kalecki (1943) for Political Aspects of Full Employment, where he underlines this tension.
[11] Marx had argued rather optimistically that the right of the working class to vote would turn out to be incompatible with private ownership of property because it would lead from "political to social emancipation" of workers.
[12] See for example, Minsky 1986; Mitchell 2001; Bhaduri 2005; Hirway 2006; and Kregel 2006.
[13] See (ILO 2009) *"Global Jobs Pact"*, which argues for environment friendly and labour intensive public works to combat prolonged joblessness and its social – economic consequences. ILO assessment of employment effects of different fiscal measures has revealed that "the greater the employment orientation of the measure, the stronger the stimulus for the real economy.

**3. Public works: demand side vs. supply side**

The management of aggregate demand can take many different routes and, the logic can be applied to justify in almost diametrically opposite political views. In a closed economy, employment generation through demand led growth can work in two ways, through either investment or consumption. In the former case wealth and income tax concession for the rich, restraint on wages despite productivity growth or an engineered stock market boom is attempted in trying to bring about "profit led growth". Alternatively, redistribution in favor of the poor and increase in public consumption through social welfare measures would be policies of "wage led growth" (Bhaduri and Marglin, 1990). Such policies are likely to be more effective in the short run by raising the rate of utilization of existing capacities as Keynes and Kalecki had originally argued. It was pointed out by Steindl (1953) that an accelerator-like capacity utilization effect would affect investment and, fixed investment would continue to be sluggish without higher capacity utilization. When theis capacity utilization effect is sufficiently strong , pure redistribution in favour of the rich (or support to the banks as happens in the "Stimulation package" in the U.S) may be ineffective. Globalization has also turned out to be detrimental to a pro-poor policy of wage led growth so far largely because its obsessive focus on unit cost reduction for international competitiveness at the expense of expanding the domestic market encourages restraint on wage in relation to labor productivity growth.

Multi-party democracies have to work with a short time horizon with regular accountability at election times. Although much favoured by conservative economists, the argument that improvement of private investment climate is the only way to solve the problem reaches barrier in situations of depressed economic activity and employment on this count. Improvement of business expectations is a sluggish process involving confidence building because investments in long lived fixed capital goods once made are sunk costs. Favorable business expectations have to be firmly in place for private investment climate to improve. In addition there are imponderable shocks which would require elected governments to act immediately without focus on improving investment climate. In contrast the remarkable advantage of a well-conceived public works program to fight unemployment, if necessary financed by budget deficit, has both flexibility and quick short term impact on the unemployment problem.

Escalating unemployment and low-paid insecure jobs and increasing concern about economic and social costs of raising poverty force governments to react to these problems by effective policies. In unfavourable business climate, public works scheme is an effective active labour market policy that can be used as an instrument of last resort in fighting chronic unemployment and poverty and in the meantime create valuable assets. New public work schemes, with direct involvement of local communities, can be the most efficient program to prevent unemployment and income inequality from becoming a social disruption. Developing countries typically have enormous investment deficit in infrastructure and public services, such as soil conservation, improvement of irrigation and water delivery systems, forestation, flood control, roads, drainage, sewage and sanitation, schools and health care, especially in remote and backward regions coexisting with unemployed people who are willing to work at reasonable wage but are excluded from productive employment.

In this context new public work projects can be designed in collaboration with local communities, government officials and NGOs, environment protection groups, and women rights groups. Local residents can participate in beneficial community-based activities that provide most needed infrastructures decided by them. Furthermore, engagement of local

community in the process of project implementation can improve community members' abilities to assume responsibility of completed projects, thus guaranteeing better maintenance of the assets created. We emphasise later in the paper how the possible disadvantages of higher inflation and over-burden of public debt which could be alleviated at least partly through a clear rethinking about the choice and design of the public investment program.

## 4. Public works: skilled and unskilled workforce

One of the main planks of attack against Keynesian public works programs have been the lack of focus on productivity. Old fashioned Keynesian demand management policies have been caricatured as digging holes and filling them up. Any new public works program has to face this issue along with the other problem of absorption and development of skilled labour in public works programs. This in itself is not a new problem, but has remained relatively under-emphasized in the design of conventional public works programs focused exclusively on demand management with the consequence that structural problems of existing educated unemployment and skilled artisans have been seldom addressed.

However, exclusive focus on skill development for strengthening the supply side is mistaken It can turn out to be like a game of musical chairs or a long queue in which more skilled have the advantage of being reshuffled to the front, but the length of the queue does not decrease[14]. Unless complemented by sufficient expansion of aggregate demand not even all skilled workers, leave alone the unskilled workers would get jobs. It is a common experience in many third world countries that skilled labor largely subsidized by public money and institutions end up supplying labour to advanced countries for the lack of effective market demand in the less developed nations. Skill formation must not therefore be delinked from the design of demand generation through public works.

### *4-1. Public works without skill*

The Keynesian public works program can be thought of as a miniature wage led expansion program in local contexts. The wages earned by working on the program is partly or wholly consumed which could potentially have the multiplier effect through successive rounds of expansion. One has to distinguish between utilization of the capacities of existing stocks and building new capacities. Let us return to Keynes' metaphorical example of pyramids rather than the oft repeated one about digging holes.[15] However we need to decipher the example. Pyramid building would have definitely kept the local population of slaves employed as long as it is being built. The problem however is that the pyramid has very limited local use and in fact then resembles digging and filling the holes. The emphasis on just keeping labor employed has limited relevance in a modern democracy. It increases consumption expenditure to expand aggregate demand but in the absence of expanding supply potential it can reduce inequality in consumption only by redistributing consumption between the employed and the unemployed through inflationary price rise or through a rationing scheme[16].

[14] See Vickerey (1998) for a lucid exposition.
[15] See Keynes in The General Theory of Employment, Interest and Money, Book III The Propensity to Consume, Chapter 10: The Marginal Propensity to Consume and the Multiplier where he states that "Ancient Egypt was doubly fortunate, and doubtless owed to this its fabled wealth, in that it possessed two activities, namely, pyramid-building as well as the search for the precious metals, the fruits of which, since they could not serve the needs of man by being consumed, did not stale with abundance. The Middle Ages built cathedrals and sang dirges. Two pyramids, two masses for the dead, are twice as good as one; but not so two railways from London to York".
[16] See Kahn, "Collected Economic Papers".

To be politically sustainable in a democracy labour employed in public works program must be productive. This is the first major departure from older Keynesian demand management policies in recession where demand activates underutilized supply but does not create new capacity.

Productivity can be brought in through two channels – either building productive assets (as an example, the National Rural Employment Guarantee Act in India has a list of permissible works which are designed to increase productivity) or, by increasing particular skill required for public projects. For example, public works program could give rise to a demand for cement, bricks etc which could be produced locally with technology designed with the help of the center. An interesting example of "new product" not related directly to the project could be given from Orissa-India, where the public works program done in scorching hot summer months gave rise to an immediate demand for towels and an expansion of the market. Local market demand can be made through traders bringing the supply from outside or setting up local production could arrange new supply in response to local demand, but all this would happen with varying time lags depending on the circumstances. Local supply reduces this time and a major consideration in the design of local projects is to build warehouse and storing facilities for goods. "Grain banks" exist in some parts of India mostly under private initiatives or NGOs, but detailed consideration of how supply lines of different types can be locally created and managed (with absorption of skilled labor) as complements to the project, deserves far greater attention. Indeed one way of reducing the fear of inflation is to have decentralized response through local grain storage and other supplies. Even the management of certain types of common property resources like forests, water bodies, etc. should be considered also from this standpoint.

Local politics and tensions are almost inevitable around the question of who benefits from the creation of productive assets. For example a pond or a well being built would contribute to increase in local agricultural production and benefit the local population; or the building of infrastructures like schools or roads, hospitals, children's playgrounds etc. However, not all assets need to be a public good and there could well be situations where the asset is created on private land. The question of benefits or positive externality is one of local inclusiveness and that could be the general principle of designing such public works program, e.g. a rich farmer may need a well on his private land and might be the largest employer of agricultural labor in the area. Thus indirectly a well or water source constructed on his land could boost local employment and productivity. The central problem in such a situation is to separate the ownership right of land from the use right of the public with prior consultation and a management design which gives control of water use to the larger community and not to the individual owner of the land. Theoretically a public works program could have a place for public-private partnership provided the incidence of the financial burden for these kinds of assets, separating ownership from use right.

However the problem is not simply divergence between private and the public benefit .The current literature on social exclusion points to many instances in public works program from which the socially vulnerable groups are altogether excluded or grossly marginalized. Depending on the particular context the design of projects for financing of public works needs to build into its criteria of acceptability the extent of inclusiveness involving issues of race, gender, minorities, and caste. Recent studies in India throws light on discrimination faced by excluded groups in India in matters of public health,[17] education[18] and even government

[17] See Acharya (2010) for analysis of exclusion and public health.
[18] See Nambissan (2009) for examples of exclusion in schooling.

sponsored food programs.[19] In fact, children from excluded communities grow up with this kind of stigmatization even today in India and which manifests itself in everyday forms of exclusion from government sponsored programs. The situation of women and minority groups is similar in terms of denial of access from full participation in public programs.

Similar are the problems of social exclusions due to unemployment faced by Iran. Iran's economic growth has been on the decline since 2008, Iran's unemployment and underemployment have increased considerably. At present, unemployment rate is about 11 percent, but this rate for youths is more than 25 percent, and for young women 42 percent. About 35 percent of unemployed young workers have been searching for job more than 19 months. Only 4 percent of Iranian unemployed receive unemployment benefits, and about 96 percent of unemployed who have not paid for social insurance have no access to unemployment benefits.[20] Unemployment is one of the most important causes of poverty and escalating social problems such as addiction, divorce and violence in Iran, which have caused raising government expenditure regarding police and prisons.

The kind of work that could be done under the new public work program would be primarily of an unskilled kind implying that it would be requiring more of repetitive manual labour. The question of labour productivity in such a program would have a limited role. The complementary increases in land productivity by creation of productive assets for simple water management, warehouses, primary schools, health centers, local forest management etc would necessarily be the major factor for direct and indirect increases in productivity. This implies that the wage share and material cost of such labour intensive activities could primarily be borne by the State. In the case of assets being created on private land, the material cost burden could be shared by the owner of the land. In this way the primary increase in local consumption demand is to be ensured through the wage channel, and basic wage guarantee could be looked upon as a generator of sustained local demand.

In such programs, however, there would be leakages. The point is to see whether this leakage is within the region/local area – e.g. the local contractor siphoning of materials or the wages being siphoned off by local powers but all wage income spent mostly locally. Formally, the leakage would act as the "saving propensity" of an indirect internalized multiplier mechanism which leads to damped demand generation locally. As opposed to this, suppose rich people take advantage and don't put the money back into local circulation. In such a case the benefit is externalized beyond the local region. The principle of financing should be accordingly drawn up particularly in case of public- private cooperation with greater possibility of externalization of benefits.

***4- 2: Public works with skill***

The relatively neglected component of a public works program in skill formation reminds one of Adam Smith's famous observation that the extent of division of labor (read "skill") is limited by the size of the market. As already pointed out, the supply side fallacy needs to be avoided. Instead it needs to be emphasized that skill formation in itself is not a guarantee for more jobs but a reshuffling among job-seekers with fixed number of jobs determined by the size of the market and the composition of demand (Vickerey, 1998). Training for skill development is usually of the vocational kind but it does not interfere with the basic idea that without demand creation more jobs cannot happen. The principle is the same everywhere, say for example in

[19] See Thorat and Lele (2004) for examples of exclusion from food programs.
[20] See Iran Statistics Center (2015) for changes in unemployment in Iran.

a university. Not all people who apply will find a place in the same university. Given limited capacity in the university, it would raise the bar and ask for higher qualifications for applying. All this will do is to put some people at the head of the queue but not shorten the queue as in the game of musical chairs with limited seats.

Skill formation can be linked to the issue of raising effective demand in two ways. Returning to the earlier idea of profit led growth, skill formation can raise profitability of investment by reducing search for the right skill by an enterprise and the required sharing skill formation cost through extensive consultation and tie-up with industries. The apprenticeship model in Germany could be a possible sort of model to consider in this context.

The financing principle has to be flexible for skill formation depending on how and to what extent it is internalized as benefit by public and private sector. Skill creation and absorption with short time lags need emphasis with longer on the job training rather than putting the entire burden on publicly funded schooling. On the job training and longer duration of training would become crucial in terms of skill creation and hence retention in the same industry or firm-specific skills.

One immediate policy could be to create a pool of available skilled people through registration and developing government sponsored service centers in various cities and even small towns. The needed skill can be provided from these centers for commonly needed services including not merely plumbing, electrical and construction works, but also nursing for the sick and caring for old and disabled people. It is essential for the quality of service to be maintained by evaluation with feedback from the client, and giving only a retention fee to the service provider. The rest has to be collected on satisfactory completion of service from the client on a piece-meal basis for each job. This method would not only keep some supervisory check but would indicate indirectly what services are in relatively short supply. The economic principle of relative scarcity may then be applied to raise the relative price of those services or to help with government subsidies.

**5. Inflationary pressures of public works**

Concern about inflation is often raised in connection with public works programs. Some economists insist that higher fiscal deficits lead to higher inflation. The argument goes, if government spends more in creating employment for the poor, in providing infrastructure, basic facilities, providing better health care, drinking water, mid-day meals etc., it essentially falls short of earning revenue. To cover that deficit might take to printing money which will lead to an inflationary pressure. Alternatively, if the government borrows from the market (against bonds lowering interest rate) it leads to “crowding out” of private investment. This issue essentially reduces to whether the Government fights serious unemployment and provides basic facilities to its poorer citizens or suffers paralysis from the fear of possible fall outs of fiscal deficit? Once the focus of this debate shifts to (a) emphasizing the matching of demand and supply through formation and expansion of local markets through decentralization, and (b) the need for socializing consumption of some essential commodities for the poor through social rather than private money wage, the problem of inflation becomes less unmanageable. And, this might be a better approach to tackle the problem than through conventional debates on fiscal and monetary policies.

The current obsession with growth rates and fiscal deficits, prevalent amongst policy makers and economists globally, has its lineage in orthodox economic theory. Most governments under the aegis of globalization usually use the trade off between inflation and unemployment (i.e. if one targets unemployment there will be higher inflation), as an excuse to not pursue full employment policies. Just as the Great Depression was setting in, the British Treasury released a White Paper in 1929 called, "memorandum on certain proposals relating to unemployment" which laid out the theoretical foundations for the view that the government should at all times balance the budget – in effect refraining from expenditure in mitigating unemployment. The Treasury view was a response to Lloyd George's suggestion that the British government should spend more money on public works to tackle the increasing unemployment. Old views continue to be revived to disable governments from fighting unemployment

Broadly, there are two ways to finance an increase in government spending: tax the rich or borrow either from the central bank (deficit financing) or from the market.

Let us assume that there exists a demand constraint rather than a supply bottleneck. Let us take the case of a typical social sector scheme where workers work on a public work program and are paid wages in cash or grains or both (essentially food for work programs, unskilled public works etc.). We concentrate on deficit borrowing as the route taken by the government to finance such a scheme. What is by and large true for contemporary times is that the majority of the workforce in the unorganized sector lives at below subsistence levels. Thus any increase in wage incomes of the poorest would mean that it would be consumed. The mechanism is deceptively simple – the government injects money (in public works) which leads to an increase in incomes and output by an amount more than the injection. This is what economists call the "multiplier" mechanism. Effectively, higher income means higher spending and hence more income - which means that there would be an increase in the government's tax revenue collection (even with unchanged tax rates). Similarly the increase in labour productivity through skill formation, if absorbed locally can also lead to successive rounds of multiplier effects. So higher governmental spending does not necessarily mean higher deficits.

The increase in social sector spending leads to two situations being conjured up by the economic orthodoxy: (a) the government will borrow out of a fixed pool of savings hence leaving lesser investment for the private players thus "crowding out" of private investment; and, (b) to cover that deficit it might take to print money which in effect will lead to an inflationary pressure. First, through the multiplier mechanism, increased incomes mean that households increase consumption expenditure and savings. So increased government spending does not eat away the pool available for private investment (the crowding out effect) but in fact increases the pool (a sort of crowding in). Hence higher government spending by deficit financing would actually lead to a scenario where the fiscal deficit finances itself through the multiplier mechanism. The second strain of thought (i.e. more money means more inflation) is associated with various versions of Monetarism (Friedman) and forms the intellectual backbone of arguments to curb state action in the social sector and more privatization. Given demand constraint, more injections would give rise to more output and thus more money would not necessarily "chase" the same goods and hence would not give rise to inflation. The bogey of "sound finance" was precisely raised and articulated to usher in neoliberalism in countries across the world which would imply moving away from a full employment objective. Given such a situation the new public works program will have to ensure that it is necessarily a question of destination or who benefits. The next issue is that of

enhancing productivity with a major component of it being internalized. The principle of financing should necessarily follow form the principle distinguishing inclusion from exclusion. Regarding the problems of social exclusion one needs to revisit the importance of the social wage. If the focus is on citizens and the processes that lead to their social exclusion, then the social wage would be comprising of (but not limited to) a guaranteed income, universalized healthcare, public transportation, educational aid etc. – steps that will lead to a amelioration of exclusionary outcomes. The social wage has traditionally been used by early social democratic parties, especially in Scandinavian countries, and a revival of the concept of social wages in contemporary times would be particularly effective in containing the devastating effects of inflation.

## 6. Conclusion

Apart from the productivity enhancing benefits of public works programs, the other social dimension is of inclusion. What we can expect from such programs in contemporary times is the large influx of socially excluded groups especially, women. There are large numbers women who are interested to work, if job is accessible. Large part of potentially active women frustrated of useless job searching, stay at home and become inactive. By implementing public work schemes in backward regions, considerable number of such women will participate in the programs. In fact, such programs will reveal the real number of potential active women. Therefore, it is necessary to design special jobs in health clinics, child and elderly care centres, projects' accounting and supervision for educated and less educated women, especially women head of households. While, such works will empower women in deprived regions, it alone cannot reduce women's unemployment and underemployment rates considerably; as many women will enter the labour market in the areas that new job opportunities will emerge.

For millions of unemployed and underemployed workers decent living is out of reach. Although, pro-growth, pro-private investment strategy has failed in sufficient job provision in the past three decades, it has still remained the main tool for dealing with serious labour market problems. However, the need to find more sustainable sources of economic growth, particularly through domestic demand and wage-led alternatives, encouraged a group of countries to implement alternative policies, such as public work programs. Post recent global economic downturn, academics and even ILO have insisted that it is crucial to implement a coherent, job-oriented strategy to address the basic needs of millions workers and their families and emphasized that employment and social protection must be at the centre of fiscal stimulus measures to protect the vulnerable groups and reactivate investment and demand. This approach relies on strong positive multiplier effects to create virtuous cycles of employment and productivity growth.

Most developing countries facing labour market crisis, try to change the trend by providing subsidized loans to private sector via state-owned banks. However, generous loans were not successful to generate sufficient employment opportunities. In sluggish economic situation and unfavorable business environment, private sector is not interested in productive investment; and credit facility cannot bond the creditor to use the money in productive and job generating businesses. Escalating unemployment and low-paid insecure jobs and increasing concern about economic and social costs of raising poverty force governments to react to these problems by effective policies.

Public work schemes can be the most efficient program to prevent unemployment and income inequality from becoming a social disaster. Public work schemes can be implemented in deprived regions mostly overrepresented by ethnic and religious minorities that suffer badly from chronic unemployment, underemployment and poverty. Public works scheme, with direct involvement of local beneficiaries, can stimulate the economy, create most needed infrastructure, improve the standard of living of people, reduce tensions of exclusion and encourage private investment.

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**Author contact:** kaustav@jnu.ac.in

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