



**Nr. 9 (2012)**

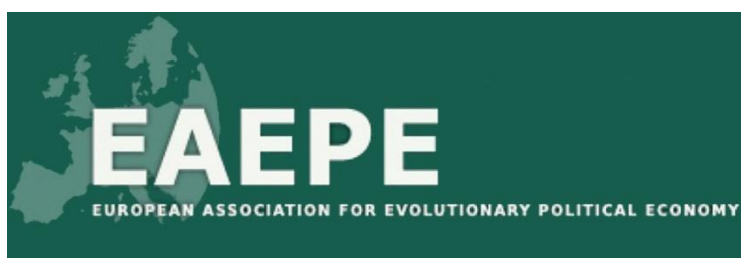
Research Area W

ISSN 2219-9268

## **Can Europe survive?**

### **Ten Commandments for Europe's Next Ten Years**

**Hardy Hanappi**



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### Abstract

What can political economy say about the immediate future of Europe? This paper tries to provide practical answers. It is structured into proposals for necessary short-term policy measures, a consistent set of mid-term dynamics initiated by these measures, and a few remarks on the long-run vision underpinning and hopefully helping to implement a welfare enhancing future Europe.

### Introduction

Europe as a central topic of political economy recently has attracted an enormous amount of attention. Partially this can be explained by the discovery of EU-member states' creditworthiness as a playing ground for large scale global financial attacks. As possibilities to position large funds at places with high expected profit rates diminished all across the globe<sup>1</sup> the drive towards betting on increasing fluctuations in the value of political collaterals - of nation states – necessarily increased. Moreover the particular constellation of certain EU members, namely of those countries being vulnerable due to deficiencies in the real economy while also being part of the Eurozone, made them an even more attractive target for the self-amplifying attacks of global finance capital. In retrospect, as far as the on-going crisis already allows the use of such a term, the challenge posed by finance capital to European policy can be interpreted as the sudden need either to constitute Europe as a full-fledged political and economic entity, or to admit a rapid break-up into several smaller territories<sup>2</sup>. In the latter case general economic decline accompanied by a wider political diversity – in extreme cases tending to the far right - can be expected. These two routes are not independent of each other. A great leap forward of a European political entity would

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<sup>1</sup> Several elements contributed to this process, to name just a few essential ones: China's political decision to keep its exchange rate constant blocked OECD exports; Latin America increasingly decoupled its development from excessive profits realized by OECD's transnationals; Africa stagnated with high profit rates being possible only in trade in with weapons and drugs; and last but not least the exorbitant deterioration of income distributions in OECD countries towards an extremely small group of super-rich families made the prospect of a future high profit rate based on an expected rise in mass consumption very unlikely. Since none of these elements can be expected to be eliminated in the short-run, large financial bubbles are bound to re-occur in the coming decade.

<sup>2</sup> The actual development for a few more years might also appear as some kind of 'muddle-through' mixture of these two alternatives, but to understand what really is at stakes it is important to distinguish clearly between the two contrasting sides on one of which any briefly delayed scenario will fall.

imply a much stronger local policy stance restricting separatist (mostly right-wing) forces. On the other hand a break-up of the European Union necessarily will quickly let EU institutions vanish; a range of national adversaries will try to cope with the deteriorating economic conditions.

In a sense the old proposal of a Europe of two speeds can be interpreted as an attempt to steer in between these two alternatives, though an attempt based on misconceived theoretical assumptions. It is not the inherent inability of Mediterranean EU members to adjust to a natural growth path exemplified by their northern partners, which threatens European unification. Europe is not per se too diverse to qualify as an 'optimal economic area', the little brother of the similarly misconceived theory of 'optimal currency areas'. Quite the contrary is the case: It was Europe's diversity, which after the disaster of WW2 enabled the incredible upswing by the evolution of trade and division of labour within Europe that lead to Europe's revival. Even in the current crisis the odds are that Europe's diversity turns out to be an advantage rather than an obstacle to be surmounted<sup>3</sup>.

This argument leads directly to the pivotal question motivating this paper: Why should Europe survive?

The quick answer is that the average living standard in Europe, which would be attainable if income distributions were less distorted, is certainly higher than the one that can be expected if the EU breaks up. This is the core issue of the project of one continental European welfare state. It is evident that this shortcut, this jump to the result of rather complicated processes across several fields of political economy is not entirely satisfactory. A more elaborated answer would need a more detailed description, a model, of an evolution that leads to the desired goal. As mentioned above such a program for an active economic policy includes measures, which hinder local decision-makers to take the wrong route. As it is an extremely complicated research project to develop such a program of a blueprint for a future Europe, while at the moment the time to take important steps towards it is very short, proposals have necessarily to be rather preliminary and not completely supported by quantitative analysis. They have to take on the form of commandments.

The small set of commandments proposed below are formulated to support a consistent short-run policy with one eye on enough flexibility of measures in the mid-run and the other eye on a long-run strategy towards a desirable future global economy. Any set of recommendations with such a demanding aspiration has to pay a tribute in the form of a didactic element to be considered. Commandments have to be short, easy to understand, and equipped with a sufficient number of links to everyday experience of the general public<sup>4</sup>. The next chapter will introduce the proposed commandments necessary for the

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<sup>3</sup> That Europe 'speaks with one voice' is only useful if the content of its statements has been elaborated by a diversity considering dialogue. Or with respect to a more economic topic: A common interest rate policy (monetary policy) of the ECB is not the same thing as a common interest rate!

<sup>4</sup> The business of political decision-makers resembles a gear mechanism, which needs to have enough grip with respect to public opinion to transmit the power of some (hopefully) more enlightened designs produced by

short-run survival of a European Union, while chapter 2 will then discuss them in a broader context (including some necessary caveats), and will show how they are related to each other. In chapter 3 the mid-run perspective that comes to the forefront in chapter 2, will finally be shown to be a possible step towards Europe's role in the global political economy in the long-run.

### **European economic policy for the short-run**

The following radical imperatives for a successful policy, which can lead to a feasible European Union for the next decades, have crystallized during the current global crisis.

1. **No government bankruptcy:** Current budget deficits of all EU member states are covered by Euro-credit provided by the ECB.
2. **Zero interest rate on government debt:** States are not firms and need not generate profits and growth, their purpose is to provide infrastructure that enables reproduction.
3. **European banks become politically legitimized entities:** The role of European financial intermediaries, in particular investment banks, is redefined and directly linked to the social needs of Europe.
4. **No unemployment is the prime goal of European economic policy:** High unemployment is the most important source for European disintegration, local nationalism, and pre-democratic political movements. To declare its abolishment directly as the central task of the European agenda has strong symbolic value.
5. **Innovation policy in Europe focusses on social innovation:** Democratic mechanisms for governance within Europe - including possible ICT solutions and explicitly considering environmental constraints - are preferred to solely technological advances.
6. **Europe's SMEs become consciously socialized:** Cooperation and politically legitimised subsidies to small and medium sized enterprises (including agriculture) are made an explicit goal of European economic policy.
7. **European exchange rate policy favours devaluation of the Euro:** This favours exports of European transnational corporations and stimulates domestic demand. Moreover non-European currency speculation becomes less attractive.
8. **European centralized wage bargaining is introduced:** European unions, representatives of TNCs, and the EU government (representing SMEs and European infrastructure) enter an annual tri-partite bargaining process.
9. **A European fiscal authority for short- and medium-term policy is introduced:** A coordinated structure of taxes and EU expenditures across EU member states is the backbone for a re-adjustment of distorted income and wealth distributions. This immediate task of implementing such an authority is coupled with a medium-term

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social scientists. Transmitters have to be elected, and this can only be expected to happen if they present issues that are attractive **and** correctly enhancing welfare from a scientific point of view. In particular in times of crisis it thus is part of the job of social scientists to take one more didactic step towards political practice.

strategic mandate to move European disposable income and wealth structures towards desired (i.e. politically legitimized) levels.

10. **A great leap forward in Europe's education infrastructure:** Longer and heavily updated education processes for all young Europeans; and with this initiative at the same time to become the most attractive place in the world for higher education. This should become Europe's place in the global division of labour in the long-run.

It is evident that this package of measures is hard to swallow for most observers trained in mainstream economic theory<sup>5</sup>; not to speak of the 'practical men', who are 'the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back', as John Maynard Keynes vividly noted in a similar situation in 1936<sup>6</sup>. Nevertheless I would insist that these ten commandments are to a large extent consistent, and that the further deepening of the crisis will destroy all the barriers, which critical commentators would immediately point at. E.g. the inertia of law systems more recently has proven to be rather limited, laws are an epiphenomenon; acceptance of more radical regime change is easier accepted by citizens if the current setting is seen as responsible for a rapid decline in living standards; capital flight has not to be feared in a world economy that experiences a synchronous decline; and the like.

Instead of taking up single counter-arguments<sup>7</sup> the next chapter will discuss each of the ten points a bit more in detail, for parts of the argument the appendix will provide some additional underpinnings. This, of course, is a consequence of the fact that these ten commandments bear no resemblance to the biblical Ten Commandments. In the current case authority follows from a worldly goal (welfare increase), which with the help of some rational arguments (to be given below) implies some urgent actions – no external superior being or canon of moral is necessary. This certainly can be counted as one of the major achievements of the 20<sup>th</sup> century: Science has started to overcome religion; the use of a subtitle like the one of this paper is immediately understood as a mnemonic trick.

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<sup>5</sup> In this respect even the somewhat pessimistic lament of sociologists is more creative than mainstream economics. E.g. Wolfgang Streeck expresses serious concerns about the dialectics between 'capitalism and democracy', see (Streeck, 2011, 2012) or (Crouch, 2004, 2012), which are more informative than most quantitative work along the lines of (Acemoglu D. and Robinson J.A., 2006). Important critique of the latter approach came from e.g. (Petith H., 2008) and (Amable B. and Palombarini S., 2007).

<sup>6</sup> Compare (Keynes, 1936, p. 383).

<sup>7</sup> An important feature of the ideas proposed in this paper is that Europe's economic policy now has to **integrate** the many different special topics and forms with which the crisis surfaces (unemployment, debt, pensions, SMEs, exchange rates, voting mechanisms, ...). All these elements are directly linked and ask for a common and consistent economic policy program. Since 2007 standard mainstream economic theory has remained mute with respect to this need for a scientifically founded response - a sure sign for the flaws of its theoretical foundations.

## Consistency and mid-run dynamics

**1<sup>st</sup> commandment** - States are not capitalist firms. Nevertheless a plethora of comments in the media repeatedly warned that Greece, or other Mediterranean EU member states could go bankrupt. The analysts of international rating agencies, following the practice of the finance industry, took the issue to a quantitative level by attaching a number characterizing the risk of bankruptcy to the misconceived concept. Once the newly created artefact 'country risk' is summarized in a figure, it can be treated like an asset, serving as collateral or being subject to self-amplifying price dynamics. Despite the superficial complexity of the financial jargon – usually polished up with some seemingly intrinsic mathematical apparatus – the basic mechanism is rather primitive: Buying and selling of contracts based on expectations influenced by the traders can generate profits and losses; self-fulfilling prophecies are easier to produce and to use if an agent is larger, the usual drive towards less and less ever larger traders lets them look for ever larger prey. Enter the Mediterranean 'country risks'.

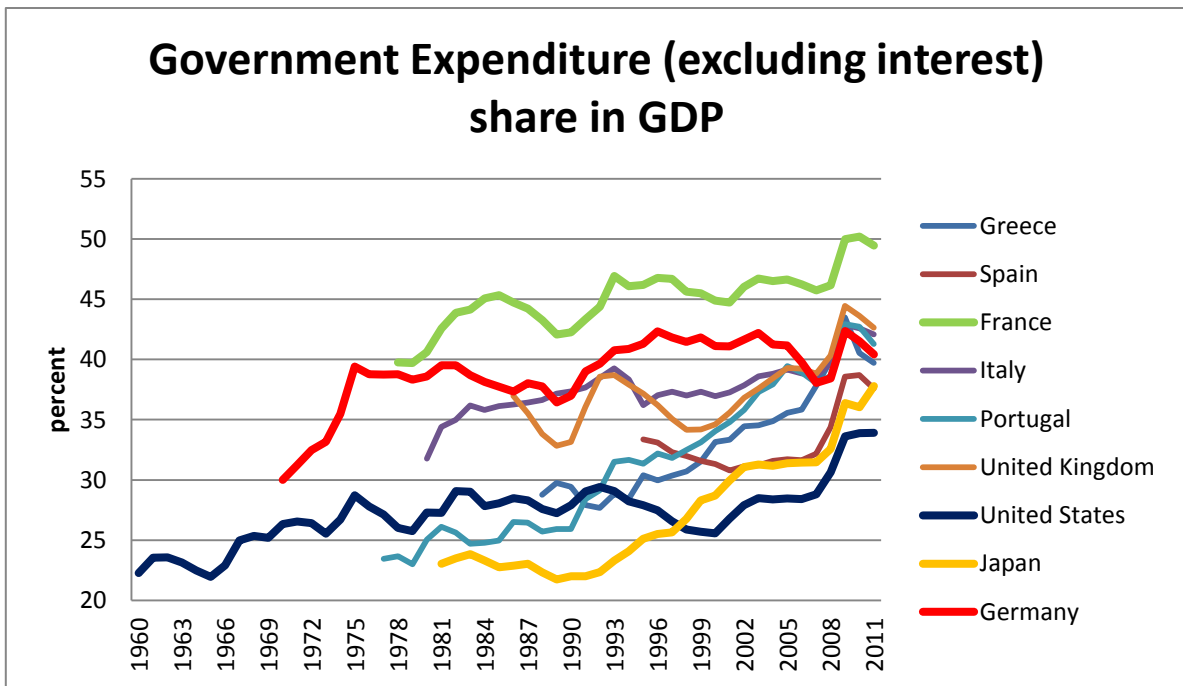
If governments, acting like 'firm owners' of 'their' country, sell their asset, e. g. 'government bonds', to get money to cover an excess of government expenditure over government income, then they promise to pay an interest on the borrowed sum, which usually reflects the expected 'country risk'. Since 1945 in most developed countries governments indeed boosted their infrastructure by increasing the share of gross domestic product, which was publicly managed (compare fig. 1). In the course of this long-run surge of public budgets annual budget deficits were the rule rather than an exception<sup>8</sup>. As any consideration of simple accounting identities reveals government deficit handling boils down to simple income distribution policy as long as a closed economy is considered – appendix A1 provides the details. Problems with deficits thus are a direct consequence of two elements related to the opening of a closed economy:

- Debt in a currency, which cannot be supplied by the domestic monetary authority,
- Transfer of resources to foreign locations.

Only as far as these two processes are present, or are plausible to occur, only to this extent the simple redistributive power of a national (in Europe: continental) authority will be insufficient.

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<sup>8</sup> Contrary to this interpretation Charles Wyplosz summarizes economic mainstream approaches to the deficit problem, which all hint only at the problem that 'recipients of public spending to fail to fully internalize the costs that taxpayers must assume', compare (Wyplosz, 2012). Conscious and reasonable government policy thus is assumed away, and deficits are stigmatized as missing 'fiscal discipline' of opportunistic policy-makers. The cure proposed by the economic mainstream therefore is simply to install additional institutions acting as watchdogs for policy-makers. This advice clearly is as wanting as the analysis leading to it.



**Figure 1: Government expenditure (excluding interest) shares in GDP**

In the case of Europe all but a small share of the debt of European states is in Euro, the first problem therefore is not a problem<sup>9</sup>. With respect to the second aspect of openness the withdrawal of resources from a whole continent in the short-run reduces to the threat of capital flight. But capital will only start to move if there are other parts of the world where it expects to encounter more profitable opportunities. In the current situation of a deep global world crisis no immediate candidate for such a goal country exists<sup>10</sup>. Seen from an empirical point of view Europe's government debt crisis currently therefore can be considered as a struggle over flows in a system of connected containers.

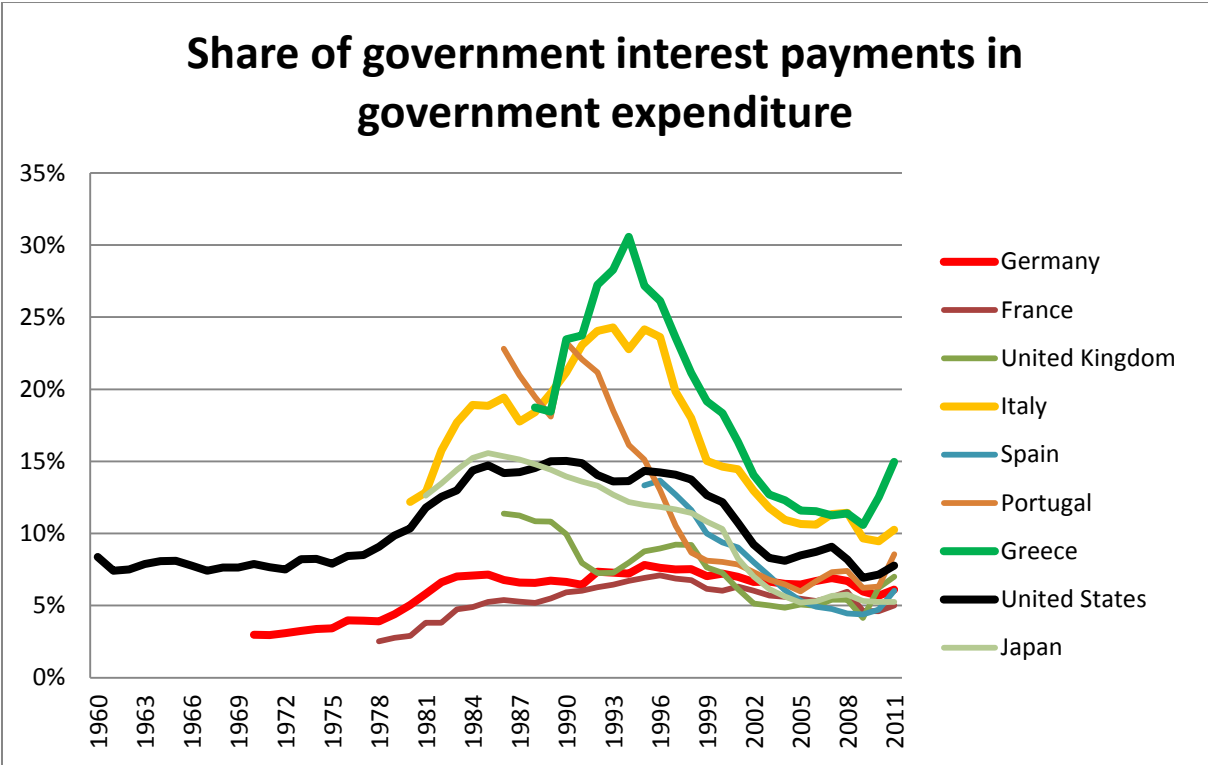
The flow representing the salaries of public employees is the one, which usually – but incorrectly – is related to the 'bankruptcy of the state'. And it is true that stopping that flow would cause severe damage to the reproductive capacity of the system. Moreover the explanation just given in the previous paragraphs makes it clear that there is no need to stop this flow. The monetary authority, in Europe the ECB, could always provide the money for this flow – and it should do so if the political authority (European governance, of which the ECB is a part of) sees the maintenance of infrastructure in Europe as an elementary condition for the reproduction of the European society. In the mid-run this European project would turn out to be a pilot project for the world economy.

**2<sup>nd</sup> commandment** – Nevertheless increasing the money supply only helps in the short-run to prevent the disaster of an employment and consumption collapse. Even in the short-run it has to be supported by an immediate decision to stop all interest payments on existing government debt in Europe. Abolishing interest on public debt is not only in line with a

<sup>9</sup> This question rather is the background for the practice of repeated debt moratorium in 3<sup>rd</sup> world countries.

<sup>10</sup> The most recent attempts of BRIC states to found an (alternative) institution paralleling the IMF supports this argument. The fence around Western capital gets higher as expected profit rates dwindle away.

recognition of the primarily reproduction securing role of states, it also reduces government expenditures considerably (compare fig. 2). And it is possible to stop this flow without hurting the overall working of the system, as a brief examination of empirically observed stocks and flows in Europe reveals: Wealth in Europe, the stock variable to which this interest payments flow, is estimated to be around five times as high as the total public debt on which the interest currently is paid. Again the aspect of wealth and income distribution appears as the crux of the matter. It will only be those entities, which are currently able to add these enormous interest flows to their already exploding wealth which will be hurt by this measure. From this perspective a zero interest rate on public debt can be interpreted as an adjustment to a more sensitive incomes policy rather than as a failed investment into a nation state experiment.



**Figure 2: Government interest payment to government expenditure**

It is evident that holding government bonds then immediately becomes unalluring - the entities owning them will not be able to sell them anymore. They will not even be working as collateral; all kind of speculation will immediately cease. This makes this measure such an important short-term instrument.

At this point of the argument it becomes important to introduce an additional dimension: The notorious overshooting of government expenditure over government income in the European examples of so-called 'social market economies' has a deeper causation structure and is not just bad book keeping. The systematic enhancement of infrastructure – the core of the real side of state activity – not only had implications for the shares of profits allocated

to entrepreneurs, finance capital, and general welfare<sup>11</sup>, it also transformed aspiration levels of whole populations. In particular centrally organized and financed systems of education, health, and pensions accompanied European citizens growing up after 1945. The general public developed the attitude that there is a legitimate right to social security; the so-called 'new middle class' even conquered new dimensions of utility by the expansion of consumer credit<sup>12</sup>. Instead of wasting power in tedious class struggle activities, in Europe a kind of 'sublimated class struggle' emerged: Fights over income and wealth distribution were transformed into an agreement to a social contract that allowed employees to improve their present living conditions at the expense of a continuously increasing stock of government debt. But not only on the side of employees this new European deal caused effects; the firm structure was changed too. While smaller and medium sized firms in their respective national 'sublimated class struggle' over taxes, subsidies and social transfers could only bargain within the limits of national productivity gains and exogenously given global economic conditions, their rapidly flourishing counterpart of transnational corporations was able to establish a global perspective of their activities. It does not come as a surprise that the drive towards a stronger European policy stance in the global economy, i.e. the establishment of the European Union, was set on the agenda by European TNCs (the so-called 'Copenhagen Round') in the early eighties. At that time the project of a European Union, of a political entity representing a general European solution of a 'social market economy', became the project of European TNCs interwoven with parts of global finance capital. Nationally bound SMEs and their representatives as well as employees and their unions remained sceptic till today.

With that piece of the history of European political economy in mind the possible way-out of the current impasse occurs in a different light. Aspiration levels of the majority of European citizens have reached higher levels - and they will stay there. Large scale innovation has run out of steam in most parts of European economies (it appears pro-cyclical) and only modest increases in productivity can be expected. In Europe innovation driven growth will not return. From a global perspective the growth of TNCs in the last decades was possible by the politically engineered systematic devaluation of the currencies of some global production areas and the simultaneous stimulation of purchasing power in OECD areas, like Europe. In

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<sup>11</sup> To disentangle the dynamics in this distribution is not an easy task. While the increase in taxes did directly hurt entrepreneurs' profits as well as wages countervailing forces derived from improved infrastructure were considerable, though hard to measure. Infrastructure certainly enables additional productivity gains going to entrepreneurs as well as utility increases for all, but price-wage dynamics (reflecting the relative power of unions' vis-à-vis entrepreneurs) did modify general results in each country in a different way. Moreover a third player, global finance capital, was favoured by an ever increasing amount of interest to be paid for the increasing stock of government debt. While entrepreneurs saw their instrument of setting prices often restricted by competitive forces and union power was fading away as unemployment started to rise dramatically, global finance capital was able to increase its share. The central instrument of the latter remains the use of a politically, i.e. by law, secured interest rate process, which is interwoven with oligopolistic practices and a strong presence in governmental institutions and boards of firms. All so-called 'innovations of the finance industry' are only different forms of appearance disguising these basic mechanisms. The net effect on the distribution of gains across these three players (workers, entrepreneurs, finance capital) clearly is difficult to determine.

<sup>12</sup> See (Hanappi & Hanappi-Egger, 2012).

other words, TNCs in cooperation with some OECD governments were able to globalize exploitation mechanics. The bottlenecks encountered by this spreading of exploitation around the globe have been the ultimate cause for the economic collapse that surfaced 2008. Since the ICT bubble in 2001 finance capital finding it more and more difficult to use global exploitation fell prey to the promises of securitisation agents. In 2008 the second bubble burst – and since the fundamental reasons, the just described mechanisms, are not removed, any ‘green sprouts’ will only initiate a further bubble. But a return to national scale exploitation in OECD countries certainly would be difficult. In particular, a return of old style exploitation to Europe – what seems to be on the agenda of some old style conservatives – will probably not be feasible.

The new global setting implies a new blueprint for the world economy – in the mid-run.

**3<sup>rd</sup> commandment** – The immediate abolition of interest for government tax has an immediate consequence for the creditors. For public institutions, e.g. state-owned pension funds, it is clear that increases in pensions due to interest earned will not be possible any more. But for go-as-you-pay systems, which often are working with more than 90% coverage by current pension contributions, this will not be a difficult problem. Most of it could be handled by clearing procedures within one single entity, by adjusting state accounts.

On the other hand as far as these creditors are European banks they will be immediately in trouble, because a major part of their profits is derived from the difference between the average interest rate paid for savings and the average interest rate applied for credits given. If a large part of credits consists of government bonds, and these assets suddenly do not generate interest, then falling bank profits and lower interest rates on savings have to compensate that loss. Some business banks certainly will fail to meet this challenge. Considering the important role, which financial intermediaries play for employment in Europe, this will be a serious economic policy problem<sup>13</sup>. From a more optimistic perspective it is not all that bad, since it forces economic policy makers to reconsider the role of money, of money management, and of institutions needed to do this management.

In a broad sense money and credit functions roughly fall into two categories:

The **traditional function** of money *in all commodity producing societies* is to provide a socially accepted sign system (reflecting something called ‘relative social value’) that enables an independence of exchanges of services and products with respect to time and to space: As long as no appropriate exchange partner is encountered a money sign can be used as a generalizing substitute for the social value manifested in the trade. Since any such trade implies the latent possibility that it might not be possible that the sign can be exchanged again (later and at a different location) for the target service or product, *any money sign* is also a credit. As the creditor for this sign system - from its very beginnings onwards – the

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<sup>13</sup> It can be doubted that a contraction of the banking sector can be avoided anyway, as even the otherwise useless BASEL 3 framework will hit banking sector employment severely. The biggest problem evidently will concern the economy with the largest share of employment in banking: the British economy.

political sovereign of the respective society as a whole, i.e. the state, had to be chosen. This social construct has proven to be extremely successful, and since almost 3000 years all European societies are overwhelmingly to be considered as monetary economies. Note that different national societies with different national authorities will have to assure not only different carrier systems and law enforcement systems for their currencies, as exports and imports develop exchange rates between currencies will emerge. It is within the framework of the traditional money function, call it 'social value function'<sup>14</sup>, that most crude arguments about inflation (based on variants of the so-called 'quantity theory of money') are formulated; compare appendix A2. Note also that political power of the sovereign is an important ingredient of this money function. This concerns not only direct coercive power (police and military enforcing the corresponding law system) but also ideological dominance shaping the internal mental models of the population. With a historically observed trend from dictatorship to democracy – in system theoretic terms a feedback control system - this implies that this function of money has to be more and more acknowledged and legalized by the sovereign of a democracy, i.e. the people.

The second function of money has evolved out of the traditional function after the end of the middle ages, when merchant capitalism started to dominate global social development: money took on the new form of capital. To **function as capital** is a transformation of the traditional function into a new process. While the appearance of the sign system 'money' at any point in time does not reveal this transformation – signs just look the way they look – the process superseding the traditional function is qualitatively different. Instead of the process of conservation of social value of the traditional function, now the process of accumulation of social value becomes the essence of monetary economies. It is evident that this second function *only occurred in* a more recent era of commodity producing societies, namely in *a global economy dominated by capitalism*.

In the time of transition to merchant capitalism, when Queen Isabella financed the explorer Columbus, money took on the transitional form of large scale, dedicated credit<sup>15</sup>. Increase of state power of a feudal empire was directly connected to the amount of territory under its control, accumulation of territory thus was its *raison d'être*. As the emerging Dutch empire with its Amsterdam Bourse proved, such an accumulation of territory is easily transformed into an accumulation of monetary wealth, which not necessarily needs to be possessed by members of feudal descent. The British Empire then brought global merchant capitalism to its zenith - and beyond. Industrial capitalism emerged in the late 18<sup>th</sup> century - with Britain again taking the lead – as the limits of merchant capitalism started to be binding. It was in this stage of capitalism that the essence of the capital process became most visible: The

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<sup>14</sup> In mainstream macroeconomics the demand for this type of money is called 'transaction demand'. The concept of a 'social value function' of money escapes the one-sided view that this function occurs only on the demand side. More generally seen, it prevents the mainstream suggestion that all economic phenomena have to be framed as supply-demand mechanisms.

<sup>15</sup> See [Hanappi, 2009] for a more detailed treatment of money, credit, and capital. A central role in these early developments was played by the banks, which emerged in Northern Italy (compare [Cassis and Minoglu, 2005] for the historical co-evolution of banking and entrepreneurship).

increase of labour productivity (less labour time needed per unit of output) plus the opening up of new utility dimensions (more welfare for the rich) became a necessary by-product of the so-called entrepreneurs in their chase for faster accumulation, i.e. higher profits.

In a long-run perspective the capitalist process has been extraordinarily successful and has brought about dramatically improved technical conditions for global social progress. In the 20<sup>th</sup> century the new form of integrated capitalism<sup>16</sup>, at least after its throes (the two world wars), spread capitalist processes all over the globe and into the minds of almost each citizen of an industrialized country. The growth rate of money as capital, a simple scalar number, turned into a fetish, and left its determining levels – social value levels – lingering in the background. Growth as a metaphor for the capital accumulation process derived its (emotion-based) positive connotation from the already mentioned side-effects: As more democratically organized societies became able to enforce a dispersion of productivity gains over larger parts of a national population<sup>17</sup> this allowed them to discover new utility dimensions, or to increase leisure time. Only with the conservative political roll-back starting in 1980 this slightly progressive evolution of integrated capitalism was frozen again – almost all gains went into profits, the income distributions deteriorated. But even with almost constant real wages productivity increasing entrepreneurial power in general did not return to Europe, expected growth rates (i.e. expected profit rates) possible with international economic activities were considerably higher; only for selling the final products the European citizen still was an object of interest. And in exactly that respect the expansion of consumer credit, turning revenues of firms into public debt, seemed to be a useful strategy for both sides. The diverging dynamics of this solution concerns mainly the fact that the utility dimension of innovation is directed towards the needs of the first world, while its profitability dimension is based on exploiting global diversity<sup>18</sup>. The limits quickly hit by the global boom of TNC activities after the breakdown of the Soviet Union in 1991 appeared then as a financial crisis of funds that could not be re-invested in the old way anymore – and were lured into speculative loops.

Returning now to the question of what to do with European business banks, the distinction between the two money functions is very helpful:

For the traditional function no link to a capitalist growth process is necessary, or even possible. Since fluid electronic sign systems adjust the velocity of traditional money without any limits of 'gold production processes', allocation of social value now indeed can be based on democratically legitimated, pure power relations. In that sense private business banks

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<sup>16</sup> In [Hanappi, 1986] the historical evolution of these three stages of capitalism is discussed; a more detailed description (in German) can be found in [Hanappi, 1989].

<sup>17</sup> Democratic feedback loops remained a national phenomenon. From an economic point of view this explains why exploitation on a national basis could often be replaced by exploitation on an international basis – as soon as the production unit developed into a transnational corporation.

<sup>18</sup> This diversity of labour cost, labour laws and tax and subsidy regulations is pivotal for the success of TNCs.

should have no say in this area, and should be replaced by their political counterpart: The ECB, understood as a political institution<sup>19</sup>.

For the productivity and utility increasing financing of entrepreneurs, i.e. for the capital function, some agency still will be needed, at least as long as global productivity levels in many parts of the world are in need for capitalist growth. Nevertheless the large financial intermediaries needed to select promising entrepreneurial activity on a global level will have to admit political guidance. For most of these projects effective demand, consumers with sufficient 'hard currency', will not exist and it is thus of prime importance that a globally organized political player (a 'global governance structure') exerts external (mostly fiscal) pressure. Large European banking networks, politically co-determined, could be a pilot project for this global role of financial intermediaries fulfilling the second money function<sup>20</sup>; to accomplish capitalism's historic mission, to bring it to an end, and in the same process to start its metamorphosis.

Inside the pilot project Europe innovation on a smaller basis, leading just towards reproductive utility increase, will also need a finance system that helps to select projects. As can already be observed this often might lead to innovations abolishing certain commodities used by certain social strata in society, or to take into account utility derived from environmental sources not taken into consideration yet. The agents needed for this kind of innovation certainly will not resemble the paternalistic entrepreneurial hero of the 19<sup>th</sup> century.

The short-run imperative of the 3<sup>rd</sup> commandment thus fits perfectly to the mid-run vision just developed. But another, even bigger short-run problem has become visible in the course of the argument: employment.

**4<sup>th</sup> commandment** – Financial intermediaries provide employment for a considerable share of the European labour force. Reducing their social role and transferring parts to the ECB and parts to smaller units will lead to massive reduction in full-time employment. But this only will add to an already existing problem of wide-spread part-time contracts. And part-time work and precarious working relations are not a cyclical phenomenon anymore – they are here to stay. As the brief historical sketch of the emergence of the European Union showed full employment never was an explicit goal. The strong influence of mainstream economic theories, which typically studied only economic models without involuntary unemployment, exerted a strong influence on policy makers; compare Keynes' observation cited above.

In these ideological models the employment decisions of firm owners simply follow their accumulation path, while wages of workers then adjust as if workers were only owners of a commodity 'labour', which they either could sell (get employed) or prefer to keep (remain

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<sup>19</sup> This implies that the ECB turns away from all tendencies to imitate business banks.

<sup>20</sup> As an additional argument for *European* banks it could be assumed that the EURO will fall vis-a-vis other currencies as soon as such a European pilot project will become visible. This will help European TNCs and their financial partners in world markets, and might even induce them to subscribe to this pilot project.

unemployed). All unemployment therefore is interpreted as voluntary unemployment; the fact that there exist means of production and coercively enforced property rights is completely ignored. Even today, during the deepest crisis since the end of WW2, the standard view of mainstream politicians holds that employment can only be increased by growth, i.e. restored accumulation of profit will induce firm owners to hire more workers.

Even growth models that allow for pulsation remain caught in only being able to describe the working of capital accumulation<sup>21</sup> - to describe its metamorphosis a different model would be needed. It can be expected that the imperative of intellectual efforts to 'save capitalism' in the face of the global economic downturn will concentrate more and more on business cycle theories, in particular on interventions, which could help to reach a 'lower turning point'. The post-Keynesian cures in that respect differ from neoclassical prescriptions mainly by a call for a different set policy instruments<sup>22</sup>: They emphasize instruments, which change macroeconomic flows more directly (e.g. increase government expenditure to stimulate demand) whereas neoclassic theorists point at the necessity to eliminate obstacles for a proper functioning of (labour) market forces (e.g. destroy the bargaining power of unions). Both sets of economic policy recipes nevertheless implicitly assume that there exists a kind of natural state of affairs characterizing labour markets – Milton Friedman once dubbed it a 'natural rate on unemployment' – which is compatible with a long-run (equilibrium) rate of capitalist growth.

But can unemployment indeed be interpreted as a natural phenomenon, with the ideological adjective 'natural' as usually purporting that unemployment is a quasi-biological property of human society and therefore unavoidable? This is certainly not a plausible hypothesis, but rather a blunt instrument in ideological warfare. Unemployment in capitalist societies is based on the maintenance of the dominance of private property of means of production. To exclude the majority of the population from the possibility to take part in the highly differentiated global production process as they wish to do so is not just an element of the prevailing law system. Quite to the contrary the legal system is always just the institutionalized result of the distribution of (partly latent) power in society, i.e. legal relationships are epiphenomena. It is the coercive power potential of police and military, threatening to become manifest executive power, which in the end secure private property of means of production. In a long-run perspective there is no pure economic theory, there always was, and still is, a theory and practice of *political* economy, of a power-supported economics.

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<sup>21</sup> A lucid description of two typical strands of the demand of such models (Goodwin versus Kalecki) and their explanatory power can be found in [Stockhammer and Stehrer, 2011]. A business cycle model, describing cycles along a growth path, in any case has a different methodological starting point as what is proposed here. From this point of view Harrod's 'knife edge growth' in a sense would be more helpful than Goodwin's generalization in his limit cycle model, since it at least tells the divergence story appropriately, and correctly points at its own blind spot (the missing metamorphosis model).

<sup>22</sup> This difference in methods lies at the root of the Keynesian insistence on short run intervention, and its neoclassical critique stating that Keynes' 'general theory' is interesting - but not 'general'.

To position 'no unemployment' on top of the agenda of European economic policy therefore is not just an innocent proposal to appease remnants of the labour movement. It is the announcement of a radical policy program aiming at a profound change of labour organisation. At closer inspection it becomes evident that this program hints at a complicated process, which at best can achieve its goals in the mid-run<sup>23</sup>.

Labour organisation already is in trouble anyway in Europe. Despite the relative enlargement of the service sector with its slower growing labour productivity European firms on the average still face demand expectations, which could be met with a substantially reduced number of employees. At least if the currently institutionalized labour time regulations are maintained. 'Full employment' levels - in the sense of all Europeans between 15 and 65 (or even 70) working 40 hours per week – is not what the owners of means of production in Europe are willing to employ. This situation is getting worse every month as government deficits are improved by reducing expenditure (firing public employees), as firms go bankrupt or 'are saved' by reducing 'cost': wages, labour times and the number of employees. To escape the trap of a downward spiral of decreasing purchasing power further fuelling cost reduction programs, a new type of European wage-price system will be necessary. As simple accounting principles tell, in a closed system the total annual flow of (sale) revenues must be equal to the flow of total expenditure. Expenditure is financed either by current income in this year or by change of the stock (if negative it is called debt) of the respective entity. If stocks are assumed to remain at a constant level (including insurance against unexpected catastrophes) the needs for infrastructure (provided by the state), and the needs for a diversity goods and services (provided by production units) have to be matched with the outputs of production by the means of circular money flows (see appendix A1 and A3 for a more detailed description). These circular money flows must keep alive a European population at an acceptable reproduction level – a **stability goal** – and at the same time should allow a certain flexibility of the diversity of the supply side offers by using signals from relative prices – an **adaptation goal**. The regulatory mechanisms needed to achieve these goals will be different for different parts of the economy – it does not make much sense to subsume them under the ideologically burdened name 'market'. Indeed these regulatory schemes will reveal the wealth of diversity possible – and needed – that is hidden behind the monolithic and mostly inadequate market concept prevailing in microeconomic theory today.

For the so-called 'labour market' this implies that the stability goal of the wage-price system has to assure that each European citizen can consume the sufficient infrastructure and commodity bundle necessary to reproduce. This is an extremely urgent and complicated task, which here only can be sketched: In a first step a minimum consumption bundle (including infrastructure) in terms of quantities has to be defined for all European regions

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<sup>23</sup> When Stalinist states tried to achieve this goal by simply adding full employment as an additional rule to their constitutions they severely underestimated the difficulties to implement such a state of affairs. It is plausible that this evident ignorance, namely (purposeful) confusion of the declaration of a goal with its actual implementation, lies at the heart of the breakdown of these regimes.

(1). Then the number of persons concerned in each region has to be used to compute the total regional amounts needed (2). Multiplying these quantitative needs with the vector of last year's prices gives basic regional demand in monetary terms for assumed price stability (3). For the network of European production units (e.g. represented by a European input-output table) the total of regional demand at last year's prices constitutes a stable share of sold products and services (including again public production entities). Since it is guaranteed by a European governmental authority it also is also a kind of minimum revenue for the involved European production units (4). In each region persons unemployed during the last year are entitled to receive a wage that can buy the regional minimum consumption bundle. To receive this wage they have to accept to work as regional public servants for a minimum of weekly hours. This minimum has to be set in a (democratically legalized) way to solve the incentive problem (5). Regional budget deficits caused by wages of these public servants (last year's unemployed) are financed by centrally collected taxes (6). In this case stability of circular money flows at constant stock levels is possible if prices, wages, and fiscal balance adjust appropriately (for some details see appendix A3). With some central instruments of European economic policy set (7) at stability levels – levels enabling simple reproduction with full employment at constant prices and wages – there will remain a surplus of potential inputs to production<sup>24</sup>. Potential outlets for this overshooting economic power typically are additional leisure times for citizens, additional consumption of commodities (including infrastructure), investments in reproductive innovation<sup>25</sup>, or extra-European export surplus. This leads to the dynamic part of the wage-price system.

This inverted dynamic system of scarcity indicators - in fact a system of surplus use indicators – will have to aggregate not only the immediate needs and wishes of European households but also will have to consider long-run and global concerns. In that way the fourth commandment in the mid-run is directly linked to most other commandments. Once – and only after - the employment goal, i.e. stable reproduction, is guaranteed further evolution can be envisaged. And this is precisely the reason why the fourth commandment, 'no unemployment' as prime economic policy goal, is so important.

**5<sup>th</sup> commandment** – As just argued to underpin the 4<sup>th</sup> commandment, the new central goal for the 21<sup>st</sup> century leads to conclusions, which indeed radically contrast what can be considered as the historically necessary mission of the era of capitalism, namely labour saving innovation. But as has always been the case with once progressive mechanisms of outdated modes of production, there will be a surviving remnant form that continues to serve a permanent cause even after a profound socioeconomic revolution. It can be expected that certain forms of innovation will persist in Europe – even if the growth rate of capital accumulation tends to be zero.

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<sup>24</sup> This argument is based on the empirical observation of a sufficiently high labour productivity in Europe. Only due to this fact a positive surplus is emerging.

<sup>25</sup> Reproductive innovation aims directly at growth of welfare – without the currently necessary mediation of accumulation of private capital. Since in Europe the latter has been running out of steam there is room for a new type of innovation. This new type of innovation will need a new type of incentive system, which again points at innovations in the area of democratic opinion formation and aggregation.

Growth in Europe thus changes its character. While capital growth on the continent is doomed to stagnate, this is not necessarily the case for activities directed at an increase of utilities of Europe's citizens. With primary needs satisfied (note commandment 4) additional utility increase to a large extent will be based on processes related to the information environment. First experiences with the rising dominance of the consumption of information goods undoubtedly are already visible. And these experiences hint already at a severe problem: The tremendously increasing need for participation of each citizen in democratic processes implies a parallel increase of intellectual capabilities of these citizens. The freewheeling evolution of information providing capitalist firms does not lead to such a development; it rather works in the opposite direction: less intellectual capacity, more dumb and streamlining 'world views' distributed over a global mass of TV watchers and newspaper addicts. A self-amplifying process of psychologically tailored supply of mental models has developed, which carry in their content an in-built demand for more of the same. Innovation carried out by existing media corporations in this area shows the perverted form, which purely technically oriented innovation aiming at capital accumulation can assume. Contrary to that, the social innovations to be envisaged in Europe should never lose the necessary emancipatory guidance, the goal of enabling citizens to understand the complicated processes, which surround them. Utility in this perspective is derived not only from moments of leisure but also from moments of experienced competence, knowledge and action furthering the utility of the social group. As the social group in a global society consists of the whole human species it immediately follows that this European type of social innovation can and should also include novel procedures and products to be exported in less developed parts of the world. It could be one of the noblest tasks of European transnational corporations to bring such innovations there, stimulating traditional capitalist growth and even make profits to spur the process<sup>26</sup>.

While it is hard to predict novelty, it can safely be assumed that advanced democratic procedures will need appropriate networks of hard- and software. The European software industry thus should expect a profound change of perspective: Instead of support of control and surveillance mechanisms helping centralized command structures to fulfil predefined missions, what will be needed (and financed by European governance) will be the development of participatory designs enabling emancipation of citizens – for Europe and for abroad. Of course, this type of reproductive innovation will not be restricted to European TNCs. Important ideas and initiatives can be expected at smaller, regional levels; this indeed could be the future for the many grassroots movements across Europe. Reproductive innovation enhancing utilities via competences might become a seductive European fashion in the mid-run.

**6<sup>th</sup> commandment** – As particular innovations immediately induce a split between production units of different size – those which do have the means to carry it out and those which are too small – so does the question of employment discussed in commandment 4.

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<sup>26</sup> Note that the expected depreciation of the Euro mentioned in the 7<sup>th</sup> commandment will support this process.

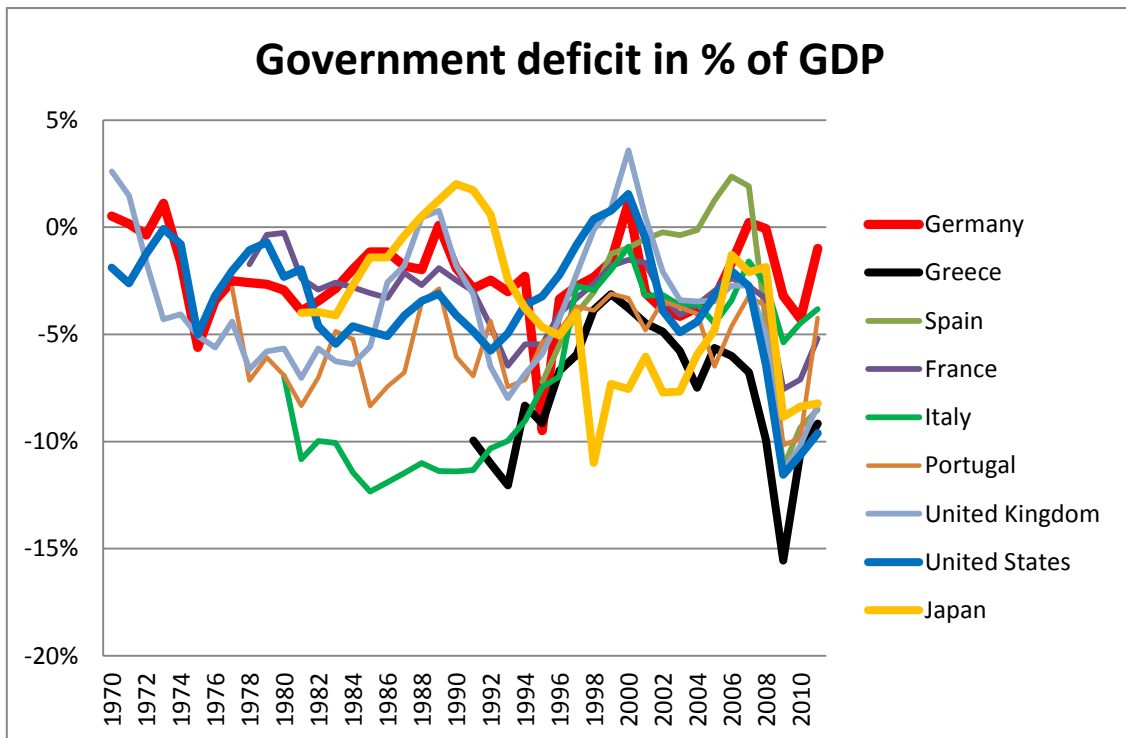
One of the most disturbing aspects of standard microeconomic approaches of the neoclassical variety of theories of the firm is that they rarely touch upon the emergence of that split in firm structures – they more or less all start by assuming that there exists a representative firm. But as empirical observation shows (compare appendix A4) the opposition between SMEs and TNCs of (and within) different countries is getting more and more accentuated.

The typical narrative accompanying the mainstream microeconomic model concludes that a trend towards full and correct information will lead to competition processes converging to an infinite number of firms, each of them selling at a price equalling marginal cost. Though mathematically trivial (a certain kind of aesthetics would say ‘elegant’) this line of argument nevertheless has exerted a whole complex of tremendous ideological influence – perhaps even *because* it sounds so stunningly wrong. The actually observed economic evolution shows that the diversity of commodities and their production processes modified the dynamics leading from the combined influence of political institutions, production chain necessities, possibilities of scales of return, transport and inventory cost, demand side characteristics, etc. ... to the size distribution of firms. The study of the dynamics of the production structure finds parts of its empirical inspiration in the input-output tables periodically provided by statistical offices. As each industry is confronted with overarching macroeconomic variables and models which partly are of acute importance for its own decision making, there usually emerge different internal models commonly accepted by most firms in the same industry. One of the variables then typically will concern the average firm size (and its variance), another one will describe the typical mark-up rate over total cost.

A most crucial set of these variables will concern the possibilities to influence taxes, subsidies and other policy variables relevant for the firms’ profits. Dividing the set of firms along this set of policy variables usually leads to a partitioning very similar to a division into SMEs and TNCs. Only large TNCs in the pharmaceutical industry can fix their demand by directly approaching the representatives of national health systems to make large-scale deals. Only TNCs with divisions in low-wage countries as well as in countries with high effective demand and in again other countries with low firm taxes are able to split their activities and liabilities across different areas<sup>27</sup>. Thus TNCs in many crucial aspects have become more powerful than national governments, whereas the latter still maintained their authority for SMEs. This has not necessarily been a disadvantage for SMEs, since their owners and employees typically represent the majority of voters, which in turn are needed to keep national governments in power. Tariffs, import quota and more subtle political measures to shelter domestic producers are an immediate consequence of this setting. The art of national governance, of course, consists in favouring prospective voters without letting deteriorate the budget deficit too much. That there is a persisting trend towards deficits cannot be doubted (compare fig. 3).

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<sup>27</sup> Compare (Huizinga et al., 2009) for details on the choice of location of TNCs.



**Figure 3: Government deficit in percent of GDP**

The regulatory framework that has emerged in this context bears a certain resemblance to a socialist regime: If competitive forces in areas of domestic production by SMEs drive profits of small firm owners to levels comparable to employees doing similar jobs, and employment in these areas is high, then this favourable state of affairs (for all potential voters) should be secured by national economic policy measures invoked by the (potentially re-elected) government. In particular international competition and foreign intruders in SME markets should then be kept at doors<sup>28</sup>.

**7<sup>th</sup> commandment** – As a policy complimentary to the support of European SMEs an exchange rate policy should be chosen, which just lets the external value of the Euro fall. There can be no doubt that the proposed pilot project Europe will induce forces at international foreign exchange markets, which will work in the direction of such a devaluation of the European currency. Several lines of action will work in parallel to stimulate this trend.

An expected continuing trend of loss of European purchasing power will motivate some TNCs to move their distribution centres closer to continents with higher expected effective demand. To do that, they will need more currency of these new places and less Euro. Parallel to that a sustained fall in the Euro will induce further excess supply in foreign exchange markets. In particular if the change in European economic policy starts to be perceived not

<sup>28</sup> Even on a continental scale this scheme works pretty well for European farmers; subsidies for the agrarian sector are the largest share in EU expenditure. Imports of cheaper products from other parts of the world are restricted. But it has to be noted that this continental solution needed a continental lobby of agricultural producers, which in turn could use the apparatus of Europe's national conservative parties. It thus clearly is a rather singular special case – and coalition building in such areas is increasingly complicated.

just as an oscillatory movement along a positive capital accumulation path, but is identified as a permanent change of economic evolution, from that moment onwards it makes no sense to wait for the lower turning point to buy back Euro again. Speculative attacks on Euro countries suddenly stop. For European households buying non-European commodities will become more expensive, and this quite generally is bad news. This process reveals a deeper truth, namely that in the last decades the mechanism of exchange rate exploitation on a global level has made it possible – from a systematic point of view even *necessary* – to boost European purchasing power. In doing so credit to European households and firms (translating into consumption and investment demand) has played an important role to keep global exchange rate exploitation going. The envisaged return of the exploitation mechanism into the internal circular flows of Europe – the major offensive launched by capital against European workers in the last years – therefore implies a loss for European households and firms. The illusion that they on a global level indeed had become an all powerful ‘new middle class’, and not just played the role of a repeatedly emptied buffer for transforming surplus into money, this illusion breaks down as credit limits strangle its customers. It is not surprising that in such a political climate the wish to a return to the previous period can mobilize fantasies of some natural biological advantage of Europeans, which legitimizes the role of a European superrace. In other words, a renaissance of more or less racist right-wing movements is to be expected, and already can be perceived.

But on the global level the reduction of European purchasing power cannot be avoided anyway, it indicates that the pilot project Europe starts to escape the mechanism of global exchange rate exploitation. For European TNCs the implications are favourable, even more so if they are pushed by Europe’s political leadership to produce export commodities and services that fit to the needs of developing countries. Europe’s SME’s, as many of them are independent from non-European imports, should also be able to maintain their reproduction level. In particular as part of the harsh implications of lower employment needs might be ameliorated by new forms of labour time regimes: Less weekly working hours, more leisure leisure time available for political participation and knowledge accumulation. From fastening high frequency consumption of material commodities towards a sustained increase in competence – that could be the message (to European households) accompanying a devaluation of the Euro.

In the mid-run the acceptance of being a responsible part of a global political economy – even a pilot project tracing out the possible working of a global high welfare community - hopefully can substitute the role of a politically disoriented, i.e. periodically crisis- and war-damaged, area of indebted consumers. Growth of material consumption and maintenance of accumulation (indicated as interest rate plus profit rate) can only coincide if debt levels increase. But as soon as these levels have reached a certain threshold the ice is getting thin and any coincidence of medium-sized trigger events will lead to an avalanche of financial breakdowns. To avoid this sawtooth dynamics the accumulation process and the notion of growth itself have to be reconceptualised. The implementation of a devaluation regime for the Euro is the policy framework that can support this idea.

**8<sup>th</sup> commandment** – It is evident that European households will have to change their consumption patterns to accommodate the implications of the 7<sup>th</sup> commandment. This change will not be welcomed immediately, different parts of Europe are currently already experiencing very different recent consumption trajectories. The catastrophic increases in unemployment in Mediterranean countries are just one index for deteriorating consumption possibilities there. Any return to a stable pre-crisis consumption level would certainly be appreciated while a farewell to steadily growing personal material inputs might be harder to establish in Northern EU countries. To some extent these efforts have to take place on an ideological battleground: There should emerge a distinction between the experienced growth of utility and the actual stagnation of products and services sold in markets. While in the past, in personal memories, families were accustomed to perceive both elements to run parallel, what now has to be learned is that utility can emerge without capital accumulation.

The key to an achievement of this goal is the notion of utility from leisure time. Of course, being unemployed, and spending leisure time under current circumstances have a radically different impact on utility. While the latter opens up the time slot needed to spend money on consumption, thereby increasing utility; in the former case all idle time is only an index for being unable to earn money, missing money being a sign for a loss of utility. The coincidence of both processes as parts of the same overall social labour process is characteristic for an incompatible mode of social organization of labour. What is needed is a sharp and radical change in labour process organization, indeed in the organization of production processes as well as distribution processes of the revenues from sales. But though this need can easily be identified, it is hard to conceive – and to anticipate - in which form it might take place.

A useful first step that could be envisaged in the mid-run would be a centralized wage bargaining process in Europe. A redesign of labour time organization including labour remuneration restructuring has to start with an overview of what the points of departure in all parts of Europe look like. Only with this (e.g. statistical and legal) information available an overarching perspective can be developed. The institutional driver for approaching this task best would be a centralized bargaining process for all European wage dynamics, which involves European unions, representatives of TNCs, and the EU government, which in turn represents SMEs and European infrastructure. Each of the three participants should be given enough power to allow for binding commitments, and little enough power to override the set of veto rights that is allocated in advance to each party<sup>29</sup>. While unions represent the European labour force and TNCs represent the ‘old’ part of Europe’s link to the world economy, a strong political representative, namely a European government represents Europe’s ‘new’ civil society. With respect to wages it is clear that the first two parties represent antagonistic forces, and the third party thus should be the decisive force surveying the long-run design goals legitimized by its voters.

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<sup>29</sup> A detailed treatment of possible voting designs goes beyond the scope of this paper. Here it suffices to mention that there exists a well developed, highly sophisticated body of knowledge in formal voting theory, which can – and should - be consulted.

In a first phase the immediate task of the new institution has to be to eliminate wage dumping, and downward competition of lowering social security standards across Europe. This has to be done in accordance to changes in labour laws and labour time regulations – a big task indeed, which will need a lot of tacit – but goal-oriented - bargaining.

The mid-run evolution of the new institution will provide a vivid example of institutional learning. The interaction between its rule set, and a set of meta-rules which allows to modify this rule set can be anticipated. But it also has to leave some room to adjust the set of meta-rules! It is a perfect example of learning (institutional) behavioural rules for environments not known in advance.

**9<sup>th</sup> commandment** – Institutional learning, the mid-run evolution just mentioned, rests on two pillars: One is the emergent dynamics of an adaptive process of democratic feedback control, i.e. the process envisaged in commandment 8. The second pillar is a sufficiently stable material support of the carriers and operators of institutional rules; in other words any adaptive evolution of distributive mechanisms, of a changing monetary authority organized by meta-rules, needs a strong fiscal authority.

A large social institution – and a continental government certainly falls under that category – needs a sophisticated design that allows for both: persistence as well as (a minimum of) flexible malleability. To be able to produce and organize all kinds of infrastructure needed by Europeans such a government must have the power to collect a sufficient amount of taxes. And as national budget structures in Europe show, it can be expected that between 35% and 50% of annual GDP will fall under the category of infrastructure expenditure to be handled by the central political authority. In the face of this undeniable necessity of modern societies the ongoing ideological battle on the necessity of ‘state intervention’ looks pretty ridiculous. The sheer total amount of generally needed and accepted public goods and services justifies the overwhelming importance of political entities controlling and regulating their dynamics.

But there nevertheless has to be a new element in this argument, which is introduced by the size of the object of investigation – and design. With 500 million citizens a new type of political organization becomes necessary, a simple set of subsidiarity rules will not be sufficient. The formation of political goals - including the transfer of social value (money) between different parts of the governed population – will need a set of rather complicated democratic mechanisms. This vision definitely is not a starting point easily to be ascribed to the currently leading group of politicians in the European Union. As the crisis vividly shows, there is turmoil and lack of clear decision structures - overarched by informal bargaining - between week EU responsables and transitory leaders of large member states. All that in front of an almost uncontrolled propagation of confused, scandalizing opinions, produced and multiplied by private media empires. The average European citizen - in simpler settings thought to be the final stronghold of democratic design - under these circumstances is subject to all kinds of ideological manipulation changing its physiognomy. The art urgently needed thus is how to get from the current state of affairs closer to an aspired feasible

democratic framework, which in turn is only designed on the way towards its implementation.

This is the point of time when the concept of vision comes into play. Because a ready-made implementable democratic design is not on the table yet, all necessary immediate action is forced to use something a bit more utopian<sup>30</sup> for its orientation: a vision.

Whatever the details of such an emerging vision of European democracy will look like, one characteristic certainly will be that a more integrated network of interactions has to be implemented. As in any living system size breeds complexity of integration. Nodes, i.e. endogenously emerging social institutions, governing this complexity will have to channel the signals they perceive and then transform them into outgoing signals, which in the sequel are to be executed. While their long-run endogenous evolution is to be governed by a set of meta-rules (in political science typically called a 'constitution'), in the mid-run social institutions necessarily for a given time period assume a permanent and constant character. So what is needed badly for a reconciliation of the political economy of a European Union in the mid-run is a social institution acting as central and authoritative government for overall socioeconomic exchange – call it a fiscal authority<sup>31</sup>.

Governance of a political unit always implies that certain transfers between the groups and areas constituting this entity are enforced by specialized social institutions. It thus is certain that a common Europe necessarily in a general sense has to be a transfer union. It indeed is the very essence of political unification that within its borders part of the socioeconomic interactions are transformed into political rules decided, executed, and policed with coercive force overriding myopic economic considerations of citizens. The power of a fiscal authority (European political-economic governance) therefore has to be established, i.e. power of national governments has to be considerably reduced and transferred to a central decision-making body. Parallel to this process democratic feedback from European citizens to this new central fiscal authority has to be implemented. The current indirect procedure is not just wanting, it is almost invisible. In the case of an emergency calling for immediate action, e.g. in this crisis, the periodic direct election of a powerful European parliament every four years might be too slow, and diverging opinion of the electorate might be too cumbersome to initiate action in time. In that case the executive fiscal authority must be equipped with orders it received from the parliament, which are concise enough to guide its short-term reactions. In particular these orders have to shelter the European fiscal authority from direct intervention by heads of single member states and large TNCs. The basic goal of the fiscal

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<sup>30</sup> As Thomas Morus noted already in 1516 the word 'utopia' in its immediate (classic) meaning is a location, which is not a location in reality [Morus, 1516]. Since it nevertheless ascribes properties to an imagined future state of affairs of a currently existing locus it is able to inform current choices.

<sup>31</sup> This name is only a preliminary choice. Indeed the distinction between monetary and fiscal authority as well as the division of governmental powers into legislative, juridical, and executive parts are only 'birthmarks of the old society', which might hide the fact that after the mid-run new distinctions within the overarching concept of democratic governance will make more sense. The use of 'fiscal authority' therefore can be considered as a didactic concession made in the mid-run.

authority must always be to enable the reproduction of Europe's society, and to disregard growth aspirations of single members if overall reproduction is in danger<sup>32</sup>.

While extraordinary power should be assigned to a European fiscal authority immediately - with a political agenda ordered to this executive position as just described – there also should be enforced a mid-run commitment of this authority to adjust its set of instruments to the framework specified by the European parliament once the latter has been installed according to the more direct election mechanism sketched above (within the next 4 years). As is evident, the 9<sup>th</sup> commandment involves a major redesign of electoral processes and institutional design of Europe in the mid-run. In the meantime such a redesign already is taking place, though in a rather confused way.

A stronger and more coherent European government, the mid-term goal of the emergence of a European fiscal authority, will not go unnoticed in the global political dynamics. As profound changes in European dynamics start to pave their way the interaction with the world economy will be put on a new track too. One aspect of this process already has been discussed in the context of the 7<sup>th</sup> commandment, the devaluation of the Euro vis-à-vis the US Dollar. An equally profound mid-run question is the positioning of Europe in the process of an accelerating global division of labour. Parallel to Europe's emergence as a political entity the larger process of a global political and economic unification is taking place. The major trajectories of this process are influenced by the routes of specialization, which the different continents and sub-continents will take in the next years. Though Europe is just one piece in this mosaic it is nevertheless an extremely important short-run decision to initiate and to propagate Europe's particular focus. As the 10<sup>th</sup> commandment suggests, this focus should be the provision of higher education for all countries of the world.

**10<sup>th</sup> commandment** – Between the lines of the last commandment there was hidden a major institutional redesign of Europe, which has to take place in the mid-run. But not only electoral systems and their institutional environments have to change, there also is the need to enhance the intellectual equipment of European voters. If Europe is going to be a global pilot project, then it only can do so by securing the intellectual capacity of its citizens, i.e. finally realize the goals of enlightenment. Not the least of the virtues of an enlightened spirit is the acknowledgement of the necessity of transfers between parts of an organic systems, even if such transfers at first sight seem to hurt the own ('private') interest. Implicit in an emphasis on education is the recognition and the support of a long-run trend concerning the content of education: Education of the masses in Europe started only 200 years ago (in the times of Napoleon) to take on momentum, and early industrial capitalism allowed for it only

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<sup>32</sup> It thus is the maintenance (and possibly growth) of *utility* of Europe's population that European governance has to focus on, and not the growth of territory of states, or the growth of capital of firms. Hidden in this aspiration is a certain distribution policy: As with redistribution from the rich to the poor the marginal utility of those members (individuals, households, firms, states) at the lower end of the scale of income will rise more than the utility of those at the upper end will decrease, it is straight forward to establish **systematic redistribution** as an utility increasing measure. Note that such a strong statement is only possible since the productivity levels Europe has reached are high enough to afford a guaranteed existence of all members.

as a means to produce more skilled workers. Since then ever more complicated machinery led to more need for professional technical education, and the increase of layers of hierarchical surveillance of capitalist exploitation led to more refined training of the capitalists' managers, the middle class that kept exploitation going. As an important side product of the bourgeois revolution of the 19<sup>th</sup> century (finalized in World War 1) ideological dominance of religion in European education systems was broken - 'rationality' understood as a generalization, starting from profit maximization of private firms and aiming to interpret it as universal utility maximization of private human individuals, was the new magical formula for the capitalists' managers<sup>33</sup>. It was only 20 years after World War 2 that mass education led to a population of young citizens in the more developed countries, which called into question the purely technical and administrative formation of the education system. The worldwide youth revolt of the late sixties thus should be interpreted as a claim for a voice in culture and politics of pupils and students given more than just employees' skills during their education: self consciousness of a new generation. It is indeed remarkable how these claims were incorporated in the systems of 'social capitalism' that emerged as a response in many western countries. Beginning with the eighties Europe's education systems, after a decade of progressive reforms in the seventies, started to become streamlined for the needs of businesses again. This process is still going on though some new problems occurred in the last two decades.

The fast rise of information technology as a component of all production processes did imply a split in requirements for labour force inputs. While there emerged a quantitatively small but pivotal need for highly educated specialists - mostly to be located in developed countries - the need for cheap hands to work on the material side of production was dispersed globally. Though specializing included technical areas as well as administrative and ideological areas it nevertheless only enabled a limited number of workplaces, far less than the social arrangements of worktime regimes and employment contracts would indicate as needed for younger workers in developed OECD countries. Hence the problem of youth unemployment and 'education-employability' mismatch<sup>34</sup>, which is moving to the top of the current crisis agenda. But as long as expected profit rates could be held stable this problem could happily be ignored by governments and transnational corporations, since there seemed to be a credit channel for social institutions via which high consumption and employment levels could be maintained. Treating financial intermediaries (banks and insurance firms) like private firms, i.e. simple short-run profit maximizers, governments allowed and even stimulated an incredibly large credit bubble. The most visible example for this process was the United States, but at closer examination during the Clinton-Bush era

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<sup>33</sup> Till today microeconomic lectures in most universities start by explaining individual utility maximization as an isomorphism to profit maximization, both under constrained availability of resources. This simple metaphor then is celebrated as the 'economic principle' of maximization in the face of 'scarce resources'. In the perspective of classical political economy this approach completely misses the point, and only can be understood as a trivial squiggle transporting managerial ideology.

<sup>34</sup> Proposed remedies for this mismatch have to be carefully evaluated. As explained further below the quickly shifting needs of TNCs are not an appropriate index for guiding the long-run policy of higher education.

similar processes can be found in almost all OECD countries. Funds flowing into this bubble were swelling as possibilities to place them in other areas on the globe were diminishing:

- China refused to adjust its currency to the usual capitalist foreign exchange rate mechanism and kept final decision-making power firmly in the hands of the national political elite;
- Russia, the second important player in Stalinist tradition, also consolidated its internal political power structure, and thus cannot be considered as a serious candidate for a placement of funds promising satisfactory profit rates;
- Latin America has taken a remarkable step towards political and economic emancipation away from its former colonial masters, and apart from a few exceptions (e.g. in Brazil and Chile) is not the backyard of the US any more;
- Africa's role as the poorhouse of the world has become even more accentuated, there even the profit rates of global arms- and drug-traders are dwindling away;

This list could be continued and made more detailed, the upshot is that average expected profit rates of funds placed in these areas were falling considerably with variances of these expectations shrinking too. Compared to this development the highly trained staff in financial intermediaries could convince fund managers at all levels<sup>35</sup> that the expected profit rates promised in financial markets bear only reasonable risks<sup>36</sup> – making a shift of money to these markets look reasonable. With the global financial crisis of 2008 the spell of magic of the new druids of unbound virtual profit rates suddenly collapsed. The prevailing financial logic that had proudly proclaimed itself as the essence of economic theory could not explain the event and remained mute. But financial elites stayed in power – in particular the new Obama administration in the US took over and prolonged most of the old financial key players – stretching their influence in a straight forward manner. Since it still was possible to make money from upward as well as from downward movements of prices of assets it was clear that the next prey will be even larger units: nation states. Treating nation states like firms (e.g. Lehman Brothers) means that the rich, capitalists and managers (e.g. of banks), let explode debt, transfer their own provisions abroad, move debt to national debt, and leave the country, which goes 'bankrupt'. The last point of comparison in terms of financial jargon is a bit hard to swallow still – despite the fact that it can be expressed in analytical clarity. Should Greece be shut down as a business failure, all people and capital be taken out and applied somewhere else? Even extensively trained specialists in persuasion and rhetoric currently have a hard time to convince Europe's population that all is going to be well again

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<sup>35</sup> It is interesting to take a look at the personnel behind these categories: On the side of financial intermediaries an unhealthy mix of extraverted ideological agents and high-nosed formally educated non-economists (often trained mathematicians), on the other side overstrained but self-complacent decision-makers.

<sup>36</sup> The important role played by some special divisions of the financial intermediaries, the so-called rating agencies, is evident. Despite their claim to produce 'opinions' only, it were just these opinions which were the prime movers for the decisions of (human and automated) fund managers. Moving assets to maximize mean-variance utility functions had become the core content of curricula in mathematical economics, and finance departments started to domesticate economics as a subordinate subject, reversing the original hierarchy.

if only productivity levels, i.e. exploitation levels, and thereby investment and growth, i.e. profit rates, in Mediterranean member states are adjusted. Even for the most simple-minded European citizen it is hard to imagine that Greece will be shut down, and a second, more productive state will be found to replace it. The whole metaphor has a ridiculous odour now, thus in the meantime other, brutally archaic explanatory schemes are brought forward by Europe's conservative mass media. They usually draw on the repertoire first explored by Europe's fascist movements in the interwar period: xenophobia, religious and sexual prejudice, ethnic conflict, etc. And it is this new wave of popularized confused and confusing noise, which poses the greatest challenge to the pilot project Europe proposed in this paper.

Why this long detour (that even leads to a sketch of an explanation of the current crisis) in a part that only should explain the mid-run consequences of a focus on education in Europe? The answer is simple. This focus is not only justified by some advantages Europe offers as a host for higher education in the international division of labour. As this detour should have shown there also is an incredible lack of knowledge, and knowledge production in the social sciences, in the ability to adequately understand what has been going on in the global society since World War 2. The elite universities of the United States, not to speak of the mass of mediocre higher education institutes of the mid-west, are ill-equipped to provide a new start; they are to a large extent the headquarters of contemporary ideological distortion. The next step to take therefore is a decoupling from the ideologies and intellectual values disseminated by certain parts of US academic institutions. Europe can also be a pilot project in this respect, since it can draw on an incredibly rich intellectual history, on resources partly hidden due to the co-existence of Europe's many languages. Diversity can become an advantage, as already mentioned earlier.

Though social sciences, an enlarged new science of political economy, should be the new centre of higher education and research since this is the most urgent type of knowledge for the survival of the human species, Europe also has to offer a lot of advanced research in many other areas. The currently prevailing focus on technological advances has been (and still is) advocated by TNCs since this is the area where they can transform advances immediately into increases in profit rates, be it through product and process innovations, be it by improving surveillance and control mechanisms in private or public spheres. The existing techniques are indeed already far ahead of the uses to which they are put by firms and governments. As touched upon already in commandments 5 and 7 research in technology in Europe should turn its attention towards the needs of developing countries, and should adjust its research efforts to the trajectories of its larger sister discipline political economy.

In the context of the long-run historical trend in education mentioned earlier, Europe's mid-run agenda thus seems to knock on the door of the next big change in education systems. The cultural revolt of 1968 certainly has failed in many important respects, but it doubtless has indicated that there is emerging a widely shared mood asking for more participation in

political economy and self-determination of cultural values. The fact to notice is that this movement has been – and probably again will be – carried by the pupils, students, and (partly) teachers of Europe. The turn which education systems hopefully are approaching is a break from systems which educate for an (advanced) worker or manager activity within the borders of a capitalist firm or state institution towards an education that enables a European zoon politicon, a politically educated citizen. What was in the centre of the old system – the activity within a production unit – becomes a mere accessory element in the new system.

The need to change quickly European education policy stems from the emerging time capacities of people soon available due to the rapid changes in labour time regimes (compare commandment 4) as well as from the need to step up political competence fast enough to successfully implement new democratic mechanisms. It is this latter argument that seems to be most important of all. If a pilot project Europe can be successful, then only because it is recognised, shared, and carried by Europe's population. And that presupposes a certain level of political consciousness of this population.

### **3 – Europe: The long-run vision**

In the previous section the ten commandments for necessary short-run actions have been combined in a discussion of consistent mid-run dynamics. Consistency meaning in this context that several arguments mutually support each other, though there clearly remain many open questions. Even this short exposition shows how complicated - but still too strongly interwoven to be disentangled – the topic is. Given this fact the problem of how to convince the general public of a certain view becomes extremely difficult. The 10<sup>th</sup> commandment is an immediate answer, but will not be able to produce an immediate impact. A preliminary substitute for enlightenment traditionally has been the proposal of a long-run vision. What would such a vision for Europe look like?

First of all the European peninsula will always – and with increasing importance – be only a part of the global economy. In the best case - proposed here as pilot project Europe - it will help to explore possible global evolution, Europe being embedded as a kind of social laboratory within an environment developing at a different speed with different goals<sup>37</sup>. In the long-run the laboratory results achieved and learned should help to design the global setting. It cannot be expected, of course, that something like a final state of evolution can or should be achieved – problems breed solutions, and implemented solutions breed new problems.

Second, some long-standing growth goals should turn into fluctuations around a certain constant level. A prominent case is population growth, but this is also true for capital accumulation – though the concept of capital is a much more complicated case<sup>38</sup>. Other

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<sup>37</sup> This paper does not discuss all the limits set to Europe's capacity to design its own future, many of those limits stemming from the multi-faceted relations with the surrounding world economy. The vision is the topic.

<sup>38</sup> As expounded elsewhere, capital has become a behavioral algorithm [Hanappi, 2009]. If that is accepted, then the end of growth of capital simply means to discard this algorithm. Indeed a transitory element of this algorithm could be saved if it is applied to the growth of welfare, to innovative reproduction increasing utility.

more evident examples come from environmental economics and consideration of scarce and slowly reproducing material resources.

Third, a great leap forward in democratic participation combined with flexible labour time organization will be possible<sup>39</sup>. This only can happen when the public sphere is considerably increased, and is able to cover infrastructural needs (from childcare, via education to the care for the elderly). Democracy is a research program, and a laboratory process indeed. It poses problems, the solution of which is getting more visible as they emerge – but not visible enough to be simply discovered. It needs active and laborious research activity combined with political activism – in short: political economy at its best – to stay ahead of the ongoing menace to fall back to barbarism<sup>40</sup>.

To cover these three large areas goes beyond the scope of this paper. But it would be extremely helpful to produce a colourful image of the possible – and feasible – world mankind could live in. Such a picture certainly could help to organize European citizens around this goal. The hope is that with the currently intensified political dispute enough room for the emergence of such a picture is building up.

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<sup>39</sup> Sharing this optimism with scholars with slightly different focus and methods is itself a valid practical instrument on the ideological battleground: In the conclusion of their book Kostas Lavdas and Dimitris Chrysochoou note: „Although the EU will continue to be faced with the reality of multiple demoi, this will not suffice to negate the importance of directing its civic potential to the construction of a political community of free and equal citizens: a Republic of Europeans, inspired by a rich intellectual tradition of democratic thought.” (Lavdas & Chrysochoou, 2011, p.122).

<sup>40</sup> There already exists a very real backbone within militarist structures – in particular in France and Great Britain – that would provide a convenient home base for right-wing oriented political movements.

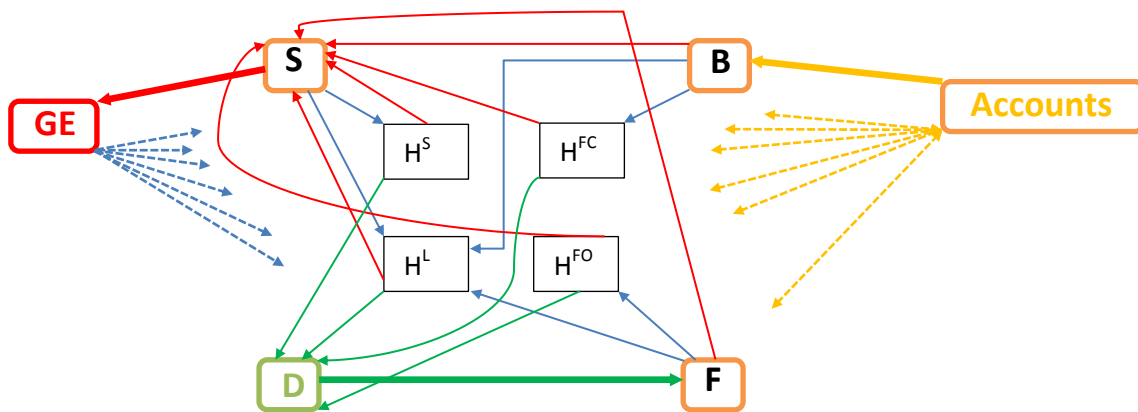
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## Appendix

### A1 – Government debt in a closed system

The large aggregate money flows within a closed system during a given time unit (e.g. a year) can be described with the following circular flow diagram.



**Diagram 1: Monetary flows in a closed economy**

This diagram is a substantially enhanced and augmented variant of the circular flow diagrams usually displayed in macroeconomic textbooks, which in turn go back to Quesnay's famous *tableau economique*.

The households in the centre of diagram 1 are divided into four groups ( $H^S$ ,  $H^{FC}$ ,  $H^{FO}$ , and  $H^L$ ) to enable the consideration of explicit class and intraclass conflicts. The households of the labour class are aggregated as  $H^L$ , whereas the households of the ruling class are split up into three different fractions:  $H^{FO}$  (households of Firm Owners),  $H^{FC}$  (households of those who govern the processes of Finance Capital), and  $H^S$  (households of those who act as the executive committee of the ruling class on state level).

Furthermore three sets of institutions of the ruling class are distinguished: The set of firms (called 'F', consisting of all means of production), the set of banks (called 'B', consisting of all financial intermediaries including private insurance companies and the like), and the set of state institutions (called 'S', consisting of all public social institutions providing infrastructure for the maintenance of coercive power, e.g. police and law system, for health education standards, for public transport, and the like). These institutions are on a different institutional level than households and always reflect the current state of the class struggle in a very specific way.

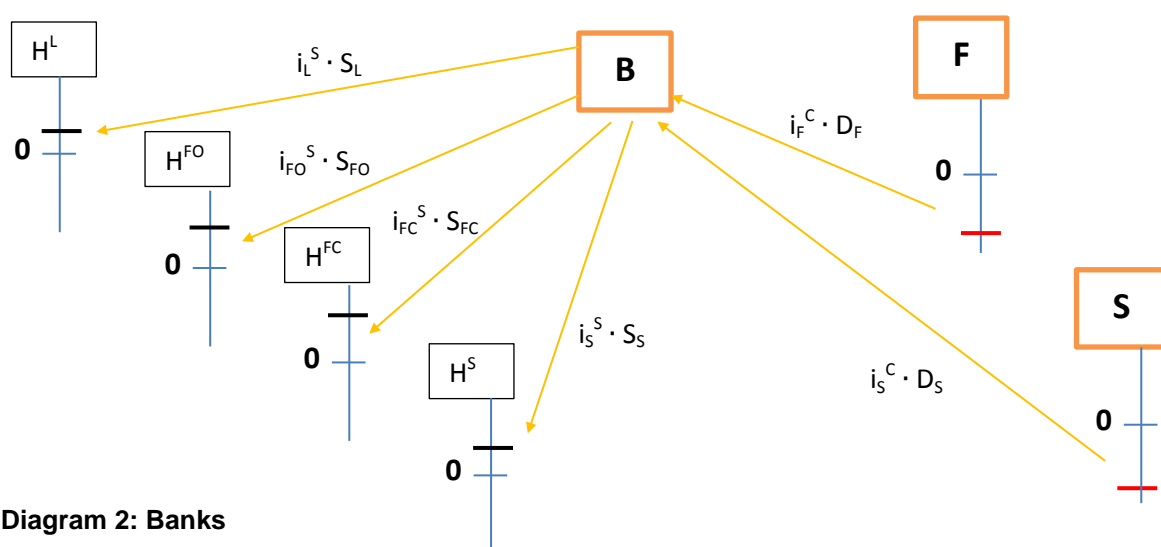
The two blue arrows leading from each of these institutions to two different types of households represent the respective wage payments ( $w^F$ ,  $w^B$ ,  $w^S$ ), and corresponding profit flows ( $\pi^F$ ,  $\pi^B$ ,  $\pi^S$ ). Note that in this scheme state institutions are thought to be able to redistribute a part of the overall socially produced profit to their leading executive agents.

The red arrows leading from each household type to the state node indicate taxes ( $t^L$ ,  $t^{FO}$ ,  $t^{FC}$ ,  $t^S$ ). The other part of state revenues – two more red arrows - comes from taxes collected directly from the institutions ( $t^F$  and  $t^B$ ). Total taxes then are used to be spent on government expenditures (called 'GE' in the diagram). The diverse money flows of government expenditure are displayed as six dotted blue arrows (call them  $g^L$ ,  $g^{FO}$ ,  $g^{FC}$ ,  $g^S$ ,  $g^F$ , and  $g^B$ ), each thought to depict how much is allocated to each of the six possible recipients ( $H^L$ ,  $H^{FO}$ ,  $H^{FC}$ ,  $H^S$ , F, B). Since many kinds of infrastructure expenditure are public goods it cannot be directly observed how the different quantities represented by the dotted blue lines should be disentangled. Nevertheless it is conceptually clear and the spent amounts are given in the state's accounting system.

All households are spending the money they receive partly on consumption. The green arrows leading from the households to a node called 'D' (aggregate effective Demand) show that consumption easily can be considered as an anonymous process<sup>41</sup>.

Since total consumption represents total revenues of firms (the thick green arrow, call it 'R') firm owners profits can be derived as residual after subtracting all cost (outgoing arrows from node F).

It now only remains to explain the interaction with financial intermediaries, the orange arrows. The central idea is that banks hold accounts of each of the nodes (excluding node D, which is only a didactic device):  $H^L$ ,  $H^{FO}$ ,  $H^{FC}$ ,  $H^S$ , F, B, S. For all negative accounts (debts) banks receive income proportional to the interest rate on credits they charge, and on all positive accounts they have cost proportional to the interest rate on savings they have agreed to pay. The dotted orange lines thus have arrows in both directions, they may signal a new credit or withdrawel of saved money as well as new saving or a repayment of an existing debt. Diagram 2 shows a typical situation for a rich OECD country.



**Diagram 2: Banks**

<sup>41</sup> This is the entry point for the ideological tool of consumption functions, which work with an average 'propensity to consume' of a 'total population'. This so-called 'social-psychological constant' makes class structures as well as intra-class differences disappear. A first (though only limited) critique of this assumption was Kaldor's introduction of different propensities for workers and firm owners.

The net income of banks stemming from transforming savings of one group into credit for another group therefore crucially depends on the different interest rates it charges for credits (e.g.  $i_F^C$ ,  $i_S^C$ ) and the interest rates it offers for savings (e.g.  $i_L^S$ ,  $i_{FO}^S$ ,  $i_{FC}^S$ ,  $i_S^S$ ). After subtracting from this net income taxes and wages for bank employees, and adding all subsidies banks receive from the state (directly and indirectly via government expenditure) again bank profits of bank owners can be derived as residual. This profit then is the money flow, which will change the money stock of the banking industry itself (not shown in diagram 2). To maximize the relation between this final profit and the already existing (positive) stock of money of financial intermediaries - i.e. to maximize accumulation of this stock – is the goal variable of banks. To a certain extent it contradicts the goal variable of firm owners since its instruments (high interest on credits, low interest on savings) undermine the ratio between firm owners profits and their accounts (negative  $D_F$ , positive  $S_{FO}$ ) at the banks. ‘Finance capital’ versus ‘industrial capital’ has been a permanent conflict between fractions of the ruling class at least since World War 1.

A similar conflict within the ruling class arises between state and banks. Again high interest on credit for public debt ( $i_S^C$ ) plus low interest on savings ( $i_S^S$ ) will force on this fraction of the ruling class a reduced income – at least if it is unable to put the burden on the labour force by increasing wage taxes or reducing those government expenditures going mainly to the labour class. In a similar way the fraction of firm owners could defend its profit rate by reducing (real) wages<sup>42</sup>, thus increasing exploitation at the level of production units.

The finally discussed node of financial intermediaries therefore highlights class contradictions as well as intra class conflicts. It explains why a *common* action of all fractions of the ruling class to reduce government debt is necessarily leading to class struggle actions, which severely shift the income distribution in favour of the ruling class. Methodologically this is important for three reasons: (1) It shows that the income distribution is a dependent variable, an epiphenomenon, at best an index showing how far the labour movement was able to get influence on decisions in a capitalist state. (2) The link between flow variables and stock variables in capitalism is always mediated via this node, the stock of social value accumulated at a certain point of time (usually possessed by a fraction of the ruling class) is expressed as a symbol in a sign system (money), which in last consequence is enforced by direct coercive power organized by the state fraction of the ruling class. (3) The scope of a closed system (best imagined as presenting the global political economy) is sufficient for some interesting conclusions, see above, but fails to give any idea about the evolution of political economy. In particular the reasons for a crisis cannot be detected without introducing the time dimension. Additional to the static retrospect of necessary accounting identities during the last observed period the dynamic relations expressing production process as well as expectation processes governing behaviour have to be included to provide a more adequate picture.

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<sup>42</sup> The role of price-wage dynamics has not been discussed in this part of the appendix since in the context of a static review of the circular flows observed ex post it is of minor explanatory power. In a mid-run consideration it certainly can lead to important indices of labour movement influence.

## A2 – Inflation and the quantity theory of money<sup>43</sup>

The simplest version of the basic ideas of the quantity theory of money can be described by the following story: Imagine a society, which consists only of two kinds of owners of commodities, those who own commodity A (e.g. 'corn') and those who own commodity B (e.g. 'olives'). The number of owners of group A and group B is equal, and all owners prefer to consume a certain mix of commodities A and B to the consumption of the commodity they possess only. By the choice of qualitative units (e.g. the weight of 'corn' and the volume of olives) of the two commodities the optimal mix can be characterized by a ratio of A to B. For example: 'Everybody likes 2 units of olives with one slice of bread (made with the flower of one unit of corn) best'. To possess this ratio of commodities the two groups have to exchange parts of their possession at a certain exchange ratio, call it  $xr$ . It means that one unit of A (e.g. 'corn') is planned to be exchanged for  $x$  units of B (e.g. two units of 'olives'). Assume further that the group possessing A owns  $q^A$  units and the group owning B possesses  $q^B$  units, and – to postpone the discussion of excess dynamics – the ratio between  $q^A$  and  $q^B$  happens to be optimal, i.e.  $\frac{q^B}{q^A} = xr$  (in the example  $xr$ , 'olive units per bread units', is 2). For a given ratio  $xr$  thus  $q^B = xr \cdot q^A$ , and the amounts which the commodity owners want to exchange can be  $\frac{q^A}{2}$  and  $\frac{q^B}{2}$  respectively. Direct barter of this kind would make all owners happy.

But since a quantity theory of money needs to involve money, it had to assume that money exists. Nevertheless it neither explains its emergence nor the forms it can take. At best macroeconomic textbooks mention that money enables a decoupling of direct commodity exchange: Taking money instead of another commodity enables the seller to exchange with somebody who owns money, and not necessarily owns the commodity the seller needs. For the purpose of a quantity theory of money it can safely be ignored how money ownership in the course of social evolution has emerged. All it needs is that the commodity owners possess amounts of money, call them  $m^A$  and  $m^B$ , which they use to purchase what they do not possess.

And finally the goal of the quantity theory of money, namely to explain the development of prices, needs an argument how prices are emerging. And in this case again, the ignorance with respect to price setting in actually observed markets is surprising: It is assumed that the fixed amount planned by owners of A to be exchanged,  $\frac{q^A}{2}$ , encounters a fixed amount of money planned by buyers (owners of B),  $m^B$ , and exchange takes place! The price of one unit of A then merely has to be calculated as  $p^A = \frac{q^A}{2 \cdot m^B}$  and the price of one unit of B in an analogue way will be  $p^B = \frac{q^B}{2 \cdot m^A}$ .

With these ingredients the main conclusion of the quantity theory of money already is visible. Changing the amount of money (e.g. doubling  $m^A$  and  $m^B$ ) for a given level of output

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<sup>43</sup> Critique of this kind of quantity theories of money is not new, it reaches back (at least) to Karl Marx appreciative comments on Thomas Tooke in 'A Contribution to the Critique of Political Economy' [Marx, 1859].

( $q^A$  and  $q^B$  constant) will imply an inverse development of prices (e.g.  $p^A$  and  $p^B$  will fall by 50%). To arrive at the formula usually presented in macroeconomic textbooks just one more element is missing: the velocity of money, called  $v$ . In the simple setting presented it refers to the fact that all money units change hands only once, but one could also assume that exchanges are sequential and the same money units are used more often during the given time interval. If  $m^A$  is equal to  $m^B$  and money changes hands only once the emerging prices would be the same as in a case where only owners of B have  $m^B$  ( $m^A$  is zero), change first and thus set  $m^A$  to  $m^B$  enabling the second step of exchange, with which they get  $m^B$  back. In the latter case money changes hands twice and the amount of money needed is only half. This inverse proportionality finally leads to the famous formulation:

$$M \cdot v = P \cdot Y ,$$

or using the variables already introduced

$$(m^A + m^B) \cdot v = p^A \cdot \frac{q^A}{2} + p^B \cdot \frac{q^B}{2}$$

As the right-hand side of the two formulas show there still remains the problem of computing an overall price index  $P$  and a corresponding 'real' amount of quantitative output  $Y$  ready for exchange; not to speak of the much deeper problem of what could be counted as money and how it could be aggregated on the left hand side.

It can be doubted that the quantity theory of money would have attracted much attention if it had not been used again and again to underpin strong policy measures. Its strong and implausible assumptions make it a vague construct, and it is exactly this property which opens up a wide range of interpretations. This is also the reason why it has been explained in such painstaking and tedious detail in the preceding paragraphs: Each of the numerous omissions and inadequate assumptions provides a route to an important insight – and to how this insight is blurred by the ongoing use of variants of this theory, its use as an ideological weapon. In what follows some of these possible insights are sketched.

First and easiest of all is the idea that evidently a prominent role for exchange of commodities does only make sense if division of labor in society exists. But division of labor implies sophisticated organization on an aggregate level, i.e. a diversity of social institutions. Even tribes of hunters and gatherers were held together by institutionalized rules of behaviour. But in the model of the quantity theory of money there is only one institution, the property right of owners of a commodity; they are assumed to possess something without being challenged and without explanation where it came from and how it is secured.

Second, division of labor within a community necessarily implies that there has to be a common element, which holds together the bundle of commodities and services that is divided. There has to be the idea of social value ascribed by the members of society to each element of this bundle.

Third, combining the former two hidden assumptions, there has to be a group – call it the state-fraction of the ruling class (compare appendix A1) – institutionalizing itself by

monopolizing coercive power and forcing the latent idea of social value of commodities to become a manifest material sign system, i.e. money. This political (i.e. power centralizing) authority thus becomes the monetary authority, which injects money into the commodity producing society.

The immediate conflict between this state fraction of the ruling class and the fraction extracting surplus via exploitation directly during production is unavoidable. It expresses itself as the fight for a division of powers within the ruling class, or in modern terminology: 'for an independent central bank'. And it is based on the fact that a strong enough political ruler can produce money for his soldiers - thus creating exchangeable signs of social value - with which they could buy commodities of all kind. Since the quantitative amount of output would remain constant, this would imply a rise in prices (the part visible - though distorted - in the quantity of money) but also a redistribution of commodities away from civil society towards 'all the king's men' (the invisible part that motivates the economic policy debate between fractions of the ruling class). From a methodological point of view this is a nice bridge to the next point, namely what is meant by the newly introduced concept of exploitation.

To answer this, another (ideologically determined) deficiency of the quantity theory of money is a good starting point: How do prices emerge? Assume that the state fraction of the ruling class can assure that the owners of the means of production (the second fraction of the ruling class) can maintain their possessions and thus are also owners of the commodities produced. In that case the price that these owners can ask for exchanging a unit of their commodity is their instrument variable. The difference between this price and the cost they had to produce this unit is their profit. Considered as aggregate class fraction any exchanges within the group have to cancel out - one members (seller) profit is equal to another members (buyer) loss - therefore profits of the class fraction cannot arise from exchanges within the class. The only possible strategy for maximizing class profit is to make the difference between price and labour cost as large as possible. This force of class oppression, measured as the ratio of total revenues to wage sum and called surplus rate, is what can be considered as 'exploitation of man by man'. Of course, the price mechanism expressed in the quantity theory of money is completely blind in this respect<sup>44</sup>.

At the zenith of the upswing of the labour movement, after the victorious Russian revolution and the breakdown of capitalism in the Great Depression, John Maynard Keynes in 1936 clearly saw the need for a revision of the dominant ideological doctrine, the quantity theory of money, in order to save capitalism. Instead of fighting for tight money supply to reduce the share of surplus sucked away by the state fraction injecting new money, he opted for using the price mechanism, i.e. inflation, to reduce the real wages of workers whose nominal wages could be kept constant if union power was broken. This not only is a more

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<sup>44</sup> Whatever the state fraction of the ruling class extracts via taxes from owners of means of production is taken from the profit made by exploitation. A common economic program of the ruling class fractions thus has to insist on direct state-organized exploitation with wage-taxes and reduction of government expenditure for the workers. This is part of the permanent sublimated class struggle in OECD countries since 1945.

sophisticated way to increase exploitation, it also brings into play a new fraction of the ruling class: Financial intermediaries (banks), which could organize a very special type of price level increase by creating credit money for firm owners<sup>45</sup>. By founding their own profit on a share of *expected* future profit of firm owners, this new fraction of the ruling class was allowed to *create* signs of social value, i.e. money, in the presence. What Keynes analysed was already becoming common practice and had been predicted by Rudolf Hilferding in his book 'Das Finanzkapital'. But for economic theory, as always a latecomer, the 'Keynesian revolution' added a new element to the quantity theory of money, namely 'liquidity demand'. An additional conflict within the ruling class was an in-built feature of this proposal. The higher the claim of the banking fraction on future profits (measured as interest rate of credits), the less remains for firm owners – in the future. But in the presence the firm owners can use the new money to improve their exploitation conditions, and the banking fraction just gets paid out of existing profits to acquire a share the existing output – reducing the shares of everybody else. In Keynesian macroeconomic models the dependence of money demand on interest rates, i.e. the formalization of this conflict, dominates the remainder of the quantity theory of money, called the demand for transactions. During the three decades after 1945 Keynesian macroeconomics managed to become the mainstream of economic theory without ever being forced to make explicit the conflicts between classes and class fractions. The most important element why this was possible seems to be the mathematical language which was used to disguise the political economy to which it referred in the real world.

With the third fraction of the ruling class, financial intermediaries, some new elements of political economy became essential. A credit is a contract, thus a part of the prevailing law system, which in turn is secured by the state monopoly of coercive power. Without a strong enough state fraction of the ruling class no credit banking can take place. Furthermore a credit creates new purchasing power that is an additional claim on *current* output, shrinking the shares of all those without credit. In other words, credit redistributes purchasing power constituting thus redistributive power of the banking fraction of the ruling class<sup>46</sup>. Summing up the stream of promised future repayment receives the name 'debt', another magical word these days - though it is only the result of a simple arithmetic operation with numbers in contracts. The problem comes with two properties of the expected process: (1) As every future event it might simply not occur, and (2) even if it occurs it is not sure what will constitute social value at a future point of time. To reduce the risk of the bank a further item agreed upon in the contract, called collateral, becomes prominent. The collateral is something representing social value *in the present*, which could be transferred to the creditor in the case of a failing future repayment. Since in the course of evolution of financial

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<sup>45</sup> As an inspection of Keynes writings shows he rather saw the level of credit volume as the essential instrument for monetary policy, and not the money supply. The crude concept of money supply changes was only introduced in later formalizations of Keynes' view by John Hicks. More recently David Romer has started a new initiative to save parts of the Keynes-Hicks IS-LM model [Romer, 2000].

<sup>46</sup> This, of course, challenged the state fraction of the ruling class, which used to manage redistribution. Moreover redistribution by credit did not have to observe the feedback from political election processes in democracies. Banks are *private* firms, showing to what their notion of privateness indeed comes up to: Not being forced to consider other goals than the firm's profit maximization.

instruments, of securitization (compare (Hanappi & Rengs, 2008)), contracts themselves can be used as collaterals the creation and redistribution of money and purchasing power becomes an extremely fluid process.

But not only the notion of a clear-cut amount of money supply, as it is used in the quantity theory of money, has evaporated in thin air. Also the velocity of money - originally conceptualized as the number of times that a silver coin in one year on the average changes hands – has lost its meaning in the era of electronic sign systems of social value. It indeed is astonishing how an antideluvian theory like the quantity theory of money can invade contemporary comments on the financial crisis. The only explanation might be that behind its veil of simplicity there are vested interests of its user, who aims to address (and to impress) a completely uninformed audience.

### A3 – Production and distribution in a nutshell model

This appendix provides a small model to explain two processes can be understood, which have not been dealt so far<sup>47</sup>.

The first process concerns the neglect of **dynamic interaction** that necessarily is assumed in the type of Keynesian macroeconomic accounting schemes like the one presented in appendix A1. These schemes are derived ex post from empirically observed aggregate flows of money in a certain closed economy during a by-gone year. Any prediction of what will happen next year can build on such a sequence of past events, but it must be clear that this only is possible due to the intervention of model building social agents transforming datasets of past events into sets of **expectations** for relevant future variables. Keynes simple assumption in this respect was that large groups in a certain country (e.g. ‘consumers’) have an innate socio-psychological constant (e.g. a ‘propensity to consume’) which will stay constant – at least for the next few years. The assumption of socio-psychological constants might serve as a first short-run hint (substituting assumptions on more elaborate expectation formation processes) for highly traditional societies, where neither actual production conditions nor the communication environment change too fast. But for the contemporary global political economy, which experiences a quantum jump in the communication and information environment as well as a dramatic change in production structures, there certainly can be no short-cut assumption on how expectations are formed. So the first task is to show that today social dynamics always have to include a sophisticated view on expectation formation.

The second loose end – closely linked to the first one – is the fact that in appendices A1 and A2 only money flows were considered<sup>48</sup>. There was no link to physical quantities of goods or labour time. Indeed A2 aimed to destroy the quantity theory of money by showing that its central equation is used to provide an *inadequate* link between quantities exchanged and their monetary mirror image. If A2 is accepted, then this type of link has vanished – and this creates the need to formulate a **new link between** the abstract world of **money forms and hard physical realities** of human individuals and their material environment. The evident candidate to formulate this link, of course, is the expectation formation process of social agents! They use their internal models - which are to a large extent based on monetary variables - to choose their actions, which then are actions in the physical economic world.

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<sup>47</sup> This appendix is mainly written for readers interested in background information on the relations of this policy paper to economic theory.

<sup>48</sup> Keynes again sensed the difficulty: As he emphasized the short-run in the first case (‘In the long-run we are all dead.’), he explicitly underlined that all aggregates he considered are in real terms, i.e. all social agents are always perfectly able to transform variables of the world of money into variables in the world of physical interactions. With this tricky assumption, which for certain arguments Keynes could modify, an explicit consideration of price and wage formation could be circumvented. Contrary to the traditional view that equilibrium assumptions are made to provide equilibrium prices based on physical properties of agents (marginal changes of utilities meeting marginal technical production properties) this perspective leads to the view that ‘equilibrium’ is used as a theoretical short-cut to determine the set of real quantities for given (past) price and wage observations.

What happens in their mental models (how they look like, how they are exchanged, how they change) is of utmost importance<sup>49</sup>.

The nutshell model that follows cannot hope to meet the high aspirations formulated in the last two paragraphs. It can only help to stimulate further theoretical work along its lines. A straight forward starting point is diagram 1 in appendix A1. If at the end of a year firm owners formulate and solve their internal models to determine what actions to set in the coming year they base their decisions on expectations. The most important expectations are those concerning exogenous variables (not controlled by the single firm owner) and they usually are predictions of time series of monetary variables (e.g. effective demand, interest rates, taxes, etc.). For firm owners the one essential monetary goal variable is the profit rate, the whole model centers on explaining its future development. So use diagram 1 to describe how it is connected to other monetary flows. In the case of general indebtedness of firms (a usual assumption supported by empirical observation) incoming and outgoing monetary flows of the firm owners' node are equalized by a change in the corresponding stock variable<sup>50</sup> called firm debt,  $DB_t^F$ :

$$R_t + (DB_t^F - DB_{t+1}^F) = P_t^{FO} + W_t^L + T_t^F + i_t^{F,C} \cdot DB_t^F \quad [1]$$

If revenues from sales ( $R_t$ ) have been too small to cover total expenditure (right hand side of equation [1]), then the stock of monetary wealth of the firms ( $DB_t^F$ ) has to be reduced to cover expenses. Total expenditure consists of profits going to firm owners' households ( $P_t^{FO}$ ), wages and salaries going to labourers' households ( $W_t^L$ ), net taxes<sup>51</sup> going to the state ( $T_t^F$ ), and the interest that has to be paid for existing debt ( $i_t^{F,C} \cdot DB_t^F$ ). Note that this simple consideration already includes a dynamic element, namely the fact that the change in the stock variable that takes place at this point of time (at the end of the year) will prevail till the next accounting checkpoint (the end of the next year). During this future period it will change the interest on the expenditure side, and eventually it might hit credit limits that call into question the very existence of a firm – pointing at the role of creditors mediated by another agent, banks.

Now turn to the goal variable profit rate ( $\pi_t^F$ ), defined as the ratio between profits ( $P_t^{FO}$ ) and capital stock ( $K_t^F$ ):

$$\pi_t^F := \frac{P_t^{FO}}{K_t^F} \quad [2]$$

<sup>49</sup> Even the economic mainstream seems to recognize the relevance of this issue for today's information society: A recent (2002) Nobel prize winner, Daniel Kahneman, has concentrated on explaining thought processes used by decision makers (Kahneman et al., 2002). Unfortunately the bad old spell of methodological individualism seduced him to focus mainly on the individual human person.

<sup>50</sup> A more equilibrium oriented methodology might look at equilibrium forces that drive the system quickly to a flow equilibrium instead of admitting changes in stocks. It is evidently impossible to describe accumulation with such an approach, it only allows for consideration of possible equilibrium forces for exogenously given relations between stock owners.

<sup>51</sup> Net taxes are all transfers to the state minus all payments (subsidies) received from the state.

In definition [2] capital stock  $K_t^F$  has to be a monetary value to enable division<sup>52</sup>. To derive this monetary value, and to understand why the profit rate is a goal variable at all, it is necessary to make a transition to the world of material hardware: In this physical world what appears as monetary value  $K_t^F$  might include a factory, or any other kind of production unit, which hardly can be disentangled into the components of which it is composed. In the capitalist mode of production to assign a monetary value to such a production unit thus again is a subtle expectation building process. The essential reason for owning a firm is to have the legal right to employ workers whose labour enables sales, which then turn into revenues as much as possible higher than total cost. A better firm therefore is a firm which promises more physical output for given labour input than its competitor. The notion of exploitation thus is already visible on the level of material interactions, but it is difficult to measure: labour time input comes with different qualities, the question how to measure physical output quantity is even more complicated and intriguing. As the practice of capital stock estimates of statistic offices shows certain heuristic procedures have been adopted that mainly take into account the observed past surplus rate and the speed of (technological) depreciation via innovation that takes place in this segment of the economy. Both elements deserve special attention.

The surplus rate ( $\sigma_t^F$ ) is defined as the ratio between surplus (total revenues ( $R_t^F$ ) exceeding wages  $W_t^L$ ) and these wages:

$$\sigma_t^F := \frac{R_t^F - W_t^L}{W_t^L}, \quad [3]$$

Last year's surplus rate is taken as an index for how well the exploitation process has worked last year. This evaluation comprises many firm level measures (from maintaining work discipline to successful marketing activities) but also is influenced by general economic conditions (e.g. a general rise in unemployment will drive down wages and for given revenues – e.g. via export sales – increase the surplus rate).

The impact of fast technological progress is rather obvious. Again the argument is immediately visible on physical level: If a firm introduces a new superior production process<sup>53</sup> this implies that the same work force can provide more physical output. For all other firms using the old technology this means that their exploitation possibilities will decrease, be it e.g. because of a shrinking market share or due to higher wages enforced by the market leader. To measure the physical impact of innovation is only possible at the level of a single firm; again it is only the shadow of the conglomerate of diverse processes on the world of monetary flows, which gives an idea of what is going on. But in this case it is the distinction between high growth industries with rapidly increasing labour productivity on the one side, and slowly growing (service) industries with tighter limits to labour productivity

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<sup>52</sup> In what follows the role of the labour theory of value is not touched upon and all rates are plainly computed using monetary variables as they actually appear.

<sup>53</sup> The argument for product innovation is in this respect completely analogous.

increases which can help statistical offices. But why is there a force pushing labour productivity to increase at all?

The fundamental crux of determining the motivation for this has to go back to quantities of goods and time spent again, and has to introduce the notions of power, exploitation and social class. In short, as history vividly shows a certain group within a society (the ruling class) usually is able to use coercive power – or just the threat of using coercive power – to force the rest of society to spend additional time for labour activities, which then materializes as additional goods and services to be consumed by the ruling class<sup>54</sup>. This process is called ‘exploitation’ and the motive for exploitation is the simple fact that spending time for consumption is preferred to spending time for labour. To work is considered by any ruling class as a disutility, if it has the possibility to force others to work instead of them this possibility is exploited. Even the surveillance of the exploitation process early on has been delegated to specialized (usually less exploited) groups of workers nowadays often called ‘managers’. Power in its purest form thus is based on the possibility to do direct physical harm to an individual, direct coercive power is the bottom line of exploitation. In today's highly organized societies it manifests itself as the power of military and police. In last consequence these are the specialized managers keeping the exploitation process running. Fortunately enough the civilization process of the last two hundred years has been driven by an increasing influence from the social class opposing the ruling class, namely the exploited class, too. Class struggle appearing in many different forms has led to a state administration fraction of the ruling class, which sometimes is inclined to consider a trade-off between lower exploitation for less open conflict, causing frictional cost.

Surplus product in different production units has to be distinguished from surplus in value terms, from money which could be used to buy anything desired. And it is the latter which is most useful for the members of the ruling class. It is the money amount generated by total sales, which characterizes the success of exploitation of a production unit. Two different indices might be used to derive a measure that indicates success per unit of input, eliminating direct influence of the size of the production unit. One index is the already discussed surplus rate ( $\sigma_t^F$ ), which measures monetary surplus per monetary unit spent for labour time<sup>55</sup>. The second index is the profit rate, which is defined as the ratio between total sales and a monetary value, which the fact of possessing the production unit represents ( $K_t^F$ ). Again it has already been defined above. The innovative turn of the argument now is that these two dimensionless ratios can be used to construct ‘real’ economic values for the quantitative potential of means of production and labour.

Single owners of production units in capitalism in principle choose actions that can be summarized in the following three domains: innovation, price setting, and wage setting. The

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<sup>54</sup> Compare (Veblen, 1899) for an early historical perspective on the habits of ruling classes.

<sup>55</sup> The empirically observed gross surplus rate reported in appendix A4 differs from this theoretical measure by the use of production value in the nominator instead of total sales, the difference being changes in inventories. It is called ‘gross’ because all other flows (in and out towards other nodes in diagram 1) important for a ‘net surplus rate’ achieved by the owner of the firm are ignored.

choices in all three areas are highly interdependent and are based on an internal model, which produces expected values of all variables considered to be essential. Moreover the internal models used by firm owners are not only exchanged between them, they also are partially amplified by a media environment that uses most advanced ICT. Needless to say that a detailed treatment of these processes goes far beyond the scope of this paper, and will be the core of a forthcoming paper using agent-based simulation. What can be concluded here is the following.

Using the terminology of input-output analysis<sup>56</sup> based on quantities (physical technical coefficients<sup>57</sup>,  $\alpha_t^{i,j}$ , and a matrix of labour time input coefficients of different labour quality,  $l_t^{k,j}$ ) the goal to do innovation - and thereby to achieve the highest possible surplus rate – is equivalent either to a reduction of these coefficients weighted by their respective prices and wages (process innovation), or by the introduction of a new row and column in the I-O-matrix which has the property that its surplus rate is higher than the prevailing one (product innovation). The first set of decisions, innovation decisions, therefore can be expressed as

$$Pgm_t(\alpha_t^{i,j}, l_t^{k,j}) = \begin{cases} Pgm_{t-1}(\alpha_{t-1}^{i,j}, l_{t-1}^{k,j}) & \text{if } Inno_t \leq 0 \\ Pgm_t^*(\alpha_t^{*,i,j}, l_t^{*,k,j}) & \text{if } Inno_t > 0 \end{cases} \quad [4]$$

The new production program<sup>58</sup> will either be the same as in the previous period or will be changed to a new program,  $Pgm_t^*(\alpha_t^{*,i,j}, l_t^{*,k,j})$ , depending on the value of the innovation trigger  $Inno_t$ . A start superscript indicates that a variable is an expected variable, expected at the time given in the time subscript. Keeping in mind that a production program introduced like this leads to a well-specified physical amount of output units ( $x_t$  or  $x_t^*$ ), the pivotal element  $Inno_t^f$  for a certain firm f can be described as follows.

$$Inno_t^f = \frac{p_t^{*,f} \cdot x_t^* - w_t^{*,k,j} \cdot l_t^{*,k,j} - p_t^{*,i,j} \cdot \alpha_t^{*,i,j}}{w_t^{*,k,j} \cdot l_t^{*,k,j}} - \frac{p_t^{**,f} \cdot x_{t-1} - w_t^{**,k,j} \cdot l_{t-1}^{k,j} - p_t^{**,i,j} \cdot \alpha_{t-1}^{i,j}}{w_t^{**,k,j} \cdot l_{t-1}^{k,j}} \quad [5]$$

All variables of the first term on the right-hand side, the price-wage system (of the whole economy) as well as the physical variables are expected values derived from an internal mental model of the economy – an internal model not further specified here. The second term on the the right hand side describes the surplus rate that is to be expected if physical properties of the production program are left unchanged. Note that the price-wage variables

<sup>56</sup> Input-output analysis has its roots in classical political economy (see [Kurz, 2011]) and nowadays is the most appropriate analytical tool to grasp the intricate relationships between physical quantities and sign systems. Combined with heterogeneous agent-based simulation techniques it should provide the most valuable tool for political economy.

<sup>57</sup> Extending most conventional interpretations of IO analysis, it here has to be noted that these technical coefficients not only consist of intermediate products produced by other industries, but also natural resources that have to be depleted to produce a unit of production. This becomes important as soon as resources are approaching exhaustion, even if no firms or prices are involved – there are quantitative, physical constraints.

<sup>58</sup> A production program (an algorithm) substitutes and improves the notion of a production function used in conventional economic theory.

to be expected are not remaining constant but now are assuming different expected values, superscript ‘\*\*’, than in the first term. Again the expectation formation process has to remain in the black box in this paper<sup>59</sup>. Taking heterogenous physical innovation possibilities serious, at any point in time there will be a certain non-empty subset of firms doing innovation. Since the second term also contains expected values influenced by other firms actions it may well occur that firms are forced by general developments to innovate (swarming effect) or may also be hindered to carry out already pending innovations by the current context (from stagnation to depression). Since all price-wage decisions are set by agents using mental models, the role of real variables is limited to the role they play in these models. Nevertheless their size can be derived at each point in time. And as they are reported via public and private media, e.g. the number of people without employment, or CO<sub>2</sub> emissions, they might exert a feedback on expectation formation.

Without the underpinnings of a full-fledged agent-based model translating these micro- and meso-level ideas<sup>60</sup> into aggregate macrodynamic elements is a daring task. Nevertheless the following hypothesis concerning the expectation formation process of firm owners seem to be plausible. First define the aggregate innovation potential of the all firms  $INNV_t$ :

$$INNV_t := \frac{\sum_{Inno_t^f > 0} (\omega_t^f + \rho_t^f)}{\sum_f (\omega_t^f + \rho_t^f)} \quad [6]$$

This potential is the share of innovative firms ( $Inno_t^f > 0$ ) in all firms, where each firm is weighted by the sum of its employment share ( $\omega_t^f$ ) and its share in revenues ( $\rho_t^f$ ). Evidently this is a dimensionless number with  $INNV_t \in [0,1]$ , and it takes care of physical size (using employment shares) as well as monetary size (using revenue shares) of firms.

Then define the aggregate price level  $P_t$  and the aggregate wage level  $W_t$  in a similar way:

$$P_t := \frac{1}{\sum_f (\omega_t^f + \rho_t^f)} \cdot \sum_f (\omega_t^f + \rho_t^f) \cdot p_t^f \quad [7]$$

and

$$W_t := \frac{1}{\sum_f (\omega_t^f + \rho_t^f)} \cdot \sum_f (\omega_t^f + \rho_t^f) \cdot w_t^f \quad [8]$$

Remember that these three aggregate variables are determined by the interaction of firm owners, who set them for their own firm, using their own internal model-building, which in turn is exposed to general media influence as well as local communication. At the end of this

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<sup>59</sup> It evidently has to be formalized as a rather complicated strategic game implying irreversibility of time. As Ping Chen writes ‘For academic economists, a fundamental shift in theoretical tastes is essential for the advancement of economic science. In the era of complexity science, we have the rare chance to find an analytical solution for non-linear systems. Computer simulation and graphic representation will play an increasing role in theoretical and empirical analysis.’ [Chen, 2010, chapter 2.6.1]. Inspiration on how to proceed can also be found in [Prigogine, 2003, pp. 22-44].

<sup>60</sup> A more fine-grained discussion of the importance of the meso-level occupied by meso-institutions, as e.g. proposed by [Dopfer et al, 2004], goes beyond the scope of this paper.

appendix these definitions will be used to form several hypothesis about aggregate behaviour.

But before that can be done a last big step in this nutshell model, namely the interaction between firm owner decisions and decisions at other nodes has to be envisaged. Quite generally the division of tasks between the different node of the ruling class can be characterized rather simply: The state fraction has to provide stability by administering the part of the surplus necessary for infrastructure and maintenance of the monopoly of coercive power (police, law system, ideological power); while the finance fraction specializes in exploring new innovation possibilities, providing savings it administers (private and public) for promising entrepreneurial activity across different parts of the global economy. Referring to the diagrams in appendix A1, the state's dynamic behaviour thus works via taxes and public expenditures, while finance capital works via savings and credits.

For aggregate macrodynamics the following definitions for the instruments of the state fraction of the ruling class are proposed: There are four essential elements, the level of government income flows (all forms of taxes)  $T_t$ , the level of government expenditure flows  $G_t$ , the structure of the income flow (wage tax as a share of total tax,  $tax_t^W$ ), and the structure of expenditure flows (expenditure for coercive measures as a share of total expenditure,  $g_t^{cm}$ ). Using again diagram 1:

$$T_t := T_t^F + T_t^B + T_t^{HL} + T_t^{HFO} + T_t^{HFC} + T_t^{HS} \quad [9]$$

Flows coming from sales or acquisitions of state-owned property is not considered in [9]. Such flows would only occur as a change of state savings at the bank account of the state.

To follows the traces of class politics with respect to exploitation - a task implied by the arguments in the previous paragraphs - it is necessary to add an additional essential variable, namely the wage tax rate  $tax_t^W$ :

$$tax_t^W := \frac{T_t^{HL}}{T_t} \quad [10]$$

With this tax rate the state fraction of the ruling class can control what remains from gross wage income of workers as net income, thereby influencing the downward pressure on wages that can be exerted by the other fractions, firm owners and banks (e.g. via the interest rate on consumer credit).

$$G_t := G_t^F + G_t^B + G_t^{HL} + G_t^{HFO} + G_t^{HFC} + G_t^{HS} + G_t^u \quad [11]$$

Government expenditure for infrastructure (including different types of public goods) are lumped together in variable  $G_t^u$  (unspecified government expenditure). The other variables on the right hand side of [11] are just the flows that can be assigned to the recipients as indicated in the superscript.

A crucial part for the understanding of activities of the capitalist state fraction is to recognize the distinction between expenditures to increase coercive exploitation measures,  $G_t^{cm}$  (e.g. certain kinds of domestic police and military units) and other expenditures on infrastructure ( $G_t^{is}$ ) reflecting the increasing usefulness of public goods in ever more interdependent societies. Though the borderline between these two types in many cases is blurred, not to speak of the empirical coverage by official statistical units, the theoretical distinction is of utmost importance. In the context of this nutshell model it is simply assumed that the share of coercive measures is defined as

$$g_t^{cm} := \frac{G_t^{cm}}{G_t} \quad \text{with } G_t^u = G_t^{cm} + G_t^{is} \quad [12]$$

Given the monopoly of the state to exert coercive power this distinction has a further consequence: the possibility for the state fraction of the ruling class to **deepen existing contradictions**. With respect to external expansion this refers to developments from nation states to world-wide (colonial or post-colonial) empires with different rules of the game in different political districts. With respect to internal policies this refers to (legal and policed) segregations in the working class. In both cases stronger exploitation of the politically weakest group can be used to clam down disturbing aspirations of the strongest exploited group. Deepening exploitation of the weakest discriminated element has become a policy element vital for the survival of capitalism since the late 19<sup>th</sup> century, when the British working class was admitted some improved conditions that fierce colonial exploitation made possible. More recently post-colonial exploitation via exchange rate deterioration have prolonged the viability of global capitalism. With respect to internal deepening of exploitation ethnic segregation (e.g. in rich oil countries) and gender exploitation have played a similar role<sup>61</sup>.

The finance fraction of the ruling class determines interest rates for savings and credits of the other aggregated players (compare diagram 2). Profits of banks ( $P_t^B$ ) can be determined by calculating the difference between incoming (total revenues  $R_t^B$ ) and outgoing money flows (wages of bank employees  $W_t^B$ , and taxes paid by banks  $T_t^B$ ) collected by private households of bank owners.

$$P_t^B := R_t^B - W_t^B - T_t^B \quad [13]$$

Once profit arrives in node  $H_t^{FC}$  (see diagram 1), a profit rate of the banking sector can be computed

$$\pi_t^B := \frac{P_t^B}{K_t^B} \quad [14]$$

Since banking is just a service - the provision of an amount of money either before (credit) or after (savings) another amount of money has been transferred to the bank – physical capital

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<sup>61</sup> For the use of the concept of ‘diversity’ in the capitalist ‘managerial’ context compare [Hanappi-Egger, 2011].

plays a much more remote role; the amount  $K_t^B$  from an economic perspective is even harder to approximate than in the case of firms.

Ignoring many institutional details the basic revenue generating mechanism can be described in the following way (compare diagram 2):

$$R_t^B = (i_t^{c,F} \cdot WT_t^F + i_t^{c,S} \cdot WT_t^S + i_t^{c,H} \cdot WT_t^H) - (i_t^{s,H} \cdot WT_t^H + i_t^{s,B} \cdot WT_t^B) \quad [15]$$

The banking sectors revenues are the difference between the cost of attracting savings (the interest paid for savings, interest rate  $i_t^{s,r}$  times the respective wealth of the saving entity  $WT_t^i$ ) and the money received for redistributing these savings as credits (interest rates  $i_t^{c,r}$  paid for debts measured as a negative value of wealth  $WT_t^i$ ). In [15] there are several implicit assumptions to be explained. As national statistics show the standard circuit of flows in OECD countries after WW2 is characterized by positive savings of the household sector, which then is redistributed as credits to firms. Thus there has been a traditional dominance of the first element of the first term ( $i_t^{c,F} \cdot WT_t^F$ ) and the first element of the second term ( $i_t^{s,H} \cdot WT_t^H$ ) in [15].

In a more general way Joseph Schumpeter - following in this respect Karl Marx<sup>62</sup> - had even considered this mechanism as an element of the core of the capitalist mode of production: Because entrepreneurs are promising to be able to pay back a high interest to their creditors they are forced to increase labour productivity not only by more coercive labour conditions, but also by new production processes and new products. The latter two by-products are the justification for capitalism as a necessary era in human evolution. And finance plays a central role by choosing whom to give credit! For Schumpeter it was evident that only those firm owners are entrepreneurs and should earn a positive profit, who are able to increase labour productivity. The financial intermediary that selected these entrepreneurs should then receive a share of the increased profit rate derived from successful innovation. What today is sometimes called investment banking therefore has a noble historical background in political economy. But as any other historic episode this heroic phase of capitalism has to end some day – and again this idea was shared by Marx and Schumpeter. As history showed both had the timing wrong, capitalism is alive – though its original tenet to increase global labour productivity cannot be performed any more by the same type of entrepreneurial entity that inspired Schumpeter. The contradictions between global needs and the promise of quick and high profit rate expectations of private entrepreneurs (e.g. problems of effective demand, necessary long-run horizons for educational goals, consideration of environmental constraints, tailoring solutions to regional needs) have exploded. It is today evident that large-scale innovation in the world economy has to be a political task not to be left to the profit maximizing considerations of private financial firms.

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<sup>62</sup> Since Marx wrote more than half a century earlier than Schumpeter he did not see the possibility of positive savings of better-off worker households in richer countries. The modern macroeconomic tools of deepening conflicts in one direction in order to calm down the clashes of class struggles in another domain were not fully visible in the mid 19<sup>th</sup> century. But the positive role of capitalism in human history due to productivity increases certainly is a common issue emphasized by Marx and Schumpeter.

Having said this, it becomes clear that a new democratic process, which can substitute old style global investment banking goes beyond the scope of this appendix. But what follows is that the activities of the banking sector will have to be split: One part will have to take care of the biggest investment problems of the planet (former large-scale investment banking), and the other part should manage the less demanding tasks of handling a global currency, or a web of connected local currencies – including all types of borrowing.

The important idea for this second set of mechanisms is that it is aiming at enabling reproduction instead of enabling growth of a money stock. This split of financial intermediation – reproduction versus growth – is already visible in equation [15]. Indeed the fact that today the credits paid by states (which are social institutions responsible for reproduction) to private banks ( $i_t^{c,S} \cdot WT_t^S$  in [15]) are part of the revenues of these banks expresses a dominance of the global financial intermediaries, which in a disastrous way forces nation states into firm-like behaviour. States are treated by big finance like firms: ‘Innovate and grow, or perish!’. Of course, it is not feasible to erase Greece from Europe’s map because some parallel to firm bankruptcy is proclaimed by creditor banks. The physically existing reality will prevail, and the symbolic interaction taking place between the social classes (and the different fractions of the ruling class) will have to adjust.

As a consequence the nutshell model will not include equation [15], but will instead propose two other equations taking care for the two roles of financial intermediaries that just were mentioned.

First, detecting global needs and allocating financial resources to be done by public global banking:

$$INV_t^{global} = \alpha_t \cdot \sum_{cty} \beta_t^{cty} \cdot G_t^{is} \quad [16]$$

The importance of necessary global needs is being expressed by parameter  $\alpha_t$ , and the respective contribution of each country (out of its infrastructure expenditures  $G_t^{is}$ ) is then adjusted by weights  $\beta_t^{cty}$ , which should express how much a country is able to contribute, and how much it is concerned by the problem<sup>63</sup>.

Second, administering continental money management with predetermined interest structures for local lending and saving, which just reflect administration cost at wage levels in the range of employees with similar education levels in other parts of the (European) economy. This typically would be the role of the ECB and its affiliates.

$$(i_t^{c,F} \cdot WT_t^F + i_t^{c,S} \cdot WT_t^S + i_t^{c,H} \cdot WT_t^H) = i_{t-1}^{s,H} \cdot WT_{t-1}^H + i_{t-1}^{s,B} \cdot WT_{t-1}^B + w_t^B \quad [17]$$

Equation [17] expresses the proposal that money attracted by the (public) administrative banking sector in period  $t - 1$  should be paid back in the next period (or with the same procedure in any later period) with an interest rate on credits, which also covers the cost of

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<sup>63</sup> The simple form of [16] hides a complicated political process.

administration  $w_t^B$ . Since the bank is not a private firm any more profits are zero, and there is no incentive to treat nation states like indebted firms; rather there is the common objective to enable reproduction.

Putting together the parts of this nutshell model is easy and difficult at the same time. It is easy because all of the quasi-physical formulations of ‘natural laws of economics’ used in mainstream neo-classical theory are not used, and cannot burden a search for a ‘quasi-natural equilibrium path’ of the economy. All that is used from standard macroeconomics is the accounting framework that describes necessary ex-post relations between monetary aggregates. After using these definitorial relationships the remaining variables are considered to be determined, to be set, by the agents constituting the political economy.

What, on the other hand, makes the approach extremely complicated is that agents make their choice with the help of an internal model, which they maintain, communicate, and continuously update. The core of the actual interaction that takes place thus is intricately interwoven with expectation formation processes. Since each internal model used by an agent is an example of what Herbert Simon [Simon, 1982] has called ‘bounded rationality’ – it is a subjectively zoomed projection of what really is going on – there is no hope for a closed mathematical analysis unless bounded rationality is replaced by omniscient representative agents<sup>64</sup>. It is the inevitable complexity of such a model, which leads to the necessity to use heuristically enriched *agent-based simulation*.

Nevertheless an agent’s internal model-building process could be approached by applying the old Newtonian framework, which was so successful in the natural sciences: Changes in essential variables are functions of the state of these variables, or

$$\dot{\xi} = f(\xi). \quad [18]$$

The dotted time derivative<sup>65</sup> of the vector of essential variables  $\xi$  is assumed to be a function  $f$  of the current state values of these variables. An eternally correct function  $f$  therefore waits to be discovered, and as soon as this is done all future development can be deduced. Boundedly rational agents might believe in the existence of such a function, but not knowing it would result in the use of simple approximations. The simplest way to do so, is to use linear approximations of the partial derivatives of the arguments of  $f$  in [18]. Using discrete time, a possible part of the internal model of firms might thus look as follows:

$$INN V_t^* = \alpha_{INN V,t} \cdot \xi_t$$

with  $\xi_t := (INN V_t, P_t, W_t, T_t, G_t, tax_t^W, g_t^{cm}, i_t^{c,F}, i_t^{c,S}, i_t^{c,H}, i_t^{s,H}, i_t^{s,B})$ . [19]

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<sup>64</sup> This assumption, of course, would immediately spoil the entire scientific enterprise because if no knowledge accumulation is necessary, then no science would have ever been emerging. Such a ‘rational expectations’-approach therefore is itself completely irrational.

<sup>65</sup> Note that in the natural sciences the assumption of continuous time usually is preferred to discrete time, a choice which is non-trivial. In the social sciences – and evolutionary theory in general – the need for at least two different essential time ranges suggests a preference for the assumption of a discrete time line.

The parameter vector  $\alpha_{INNv,t}$  is of the same length as the vector of essential state variables  $\xi_t$  and is empirically estimated. It approximates how much a change of these variables would influence the expected aggregated innovation activity  $INNv_t^*$ . If more arguments change then the simplest first approximation would just add up all influences; but of course more sophisticated heuristic behaviors can be postulated. Another analog parameter vector can be assumed for all other instruments to be set by a certain agent, and finally the consideration of all these proxies as a simultaneous system will lead to the possibility to determine a best choice of the agent's decision set.

Indeed, experiments with such agent-based simulations have been performed and the more or less continuous decline of labour productivity growth in Europe since 1945 could easily be modeled. But there is more to report than just the application of Newtonian methods to bounded rationality.

The most interesting part of re-telling economic history by the use of this formal model stems from the fact that each essential variable only makes sense as long as it stays within a finite interval: the innovation force  $INNv_t$  is between zero and one; the price level is bounded below by wages and interest rates and upwards has to be considered upper limits described by monopolistic competition; the range of tax rates is limited by basic infrastructural needs and maximum possible tax revenues; interest rates can only extract a part of the profits generated by firms and on the other hand need a minimum interest on households' savings to attract money to provide credits, etc ... Most important, the real physical quantities derived from symbolically determined actions in the monetary sphere do have borderlines of feasibility: minimum food consumption, heating and health conditions linked to the unemployment rate, environmental deterioration, and the like. The countervailing forces between agents realized by the setting of their instruments in times of relative stability of a political regime will lead to highly irregular trajectories, some variables sometimes getting very close to their borders but then being repelled by instruments set according to re-estimated values of the  $\alpha$ -parameters. These controlled irregular movements are the correlate of what mainstream theory usually calls business cycle theory. Contrary to the standard view in the latter, divergence – and not convergence – of essential variables is the rule. It is only the switch of expectation formation (sensitivity borders have to be made explicit, taking into account amplifiers of the communication environment) expressed by re-estimated  $\alpha$ -parameters, which for some time guarantees the relative stability of the regime. Nevertheless there is a high probability that after a somewhat longer time period the system gets stuck with numerous essential variables hitting limits and expectation models being unable to develop sufficient repelling force. This is a state of deep crisis calling for a change of political regime.

At this point it is the set of essential variables itself, which has to change. For the current crisis the proposal made for global financial intermediation (see [16] and [17]) is a typical blueprint for an element of such a regime change. What has been proposed as a mid-run strategy for the 4<sup>th</sup> commandment is another example of an element of a new regime. How

a change of the parameter set is to be carried out, the revolutionary dynamics needed in the physical domain, can certainly not be explained by the same modelling framework that was used for the old relatively stable regime. There has to be a second class of models generalizing issues of revolutionary dynamics. This class of models then might provide some insight into the slow long-run progress taking place with regime changes.

As will be elaborated in a forthcoming paper, the slow dynamics of regime change are the central methodological ingredient of evolutionary theory. Only by modelling the opposition and interaction between slow and fast dynamics the evolution of living entities can be fully understood. It is clear that this topic goes far beyond the exposition of a nutshell model helping to position the main issues of this policy paper in the larger context of economic theory.

#### A4 – Europe’s changing production structure

In the decades since the breakdown of the Soviet Union Europe’s structure of production units has been characterized by an accelerating speed of rather dramatic changes. While in the interwar period agriculture still played an important role, the period from the end of WW2 till the mid 70-ties can be considered as the era dominated by the renewed build-up of industry. European agriculture only played – and still plays – a role as major recipient of EU subsidies. When the global focus on industry started to leave Europe<sup>66</sup> a second wave of globalization at the firm level was emerging<sup>67</sup>. The new and old economic superpower of Europe, Germany, could enlarge itself by a reunion with the GDR in 1991, which first lead to somewhat disadvantageous accumulation conditions along the dominating political trajectory. The new territories were harder to bring in line with Western accumulation aspirations than first was expected. But as soon as the conservative dominance in Europe was starting to take hold (Merkel in Germany, Sarkozy in France, Berlusconi in Italy, and later Cameron in the UK) unbound enterprise activity – additionally stimulated by financial intermediaries – unleashed a new dynamics. The characteristics of firms diverged ever stronger between countries, as well as between firm sizes and between economic sectors<sup>68</sup>.

The demise of very small firms continued, despite the ideological trick of giving (part-time) unemployed people the title of ‘self-employed’ one-person firms - mostly with a turnover close to the poverty line. This is what US data already shows since 30 years (compare fig. 4).

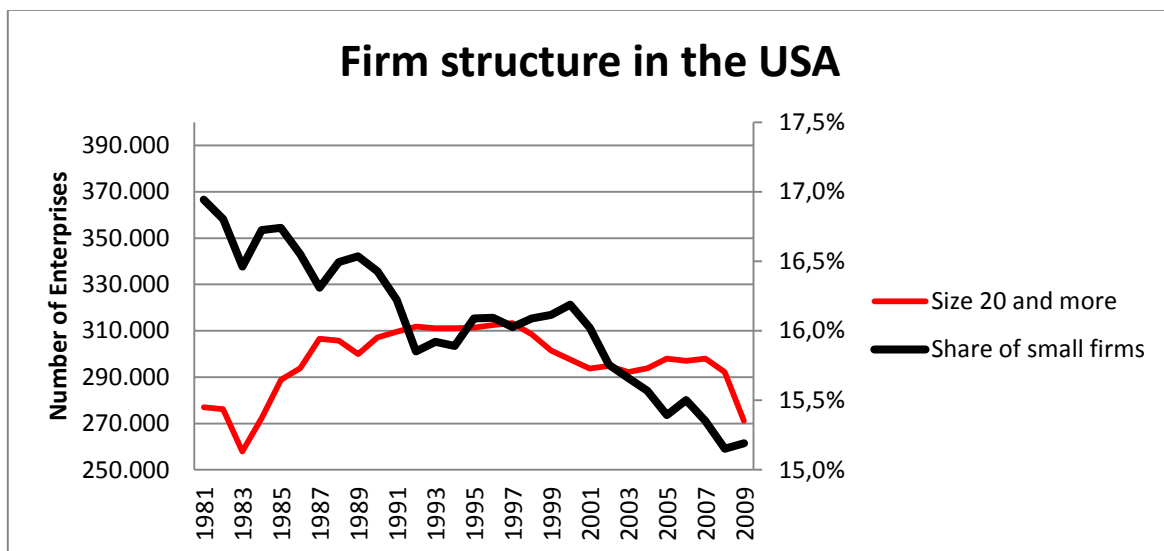


Figure 4: Firm structure in the USA

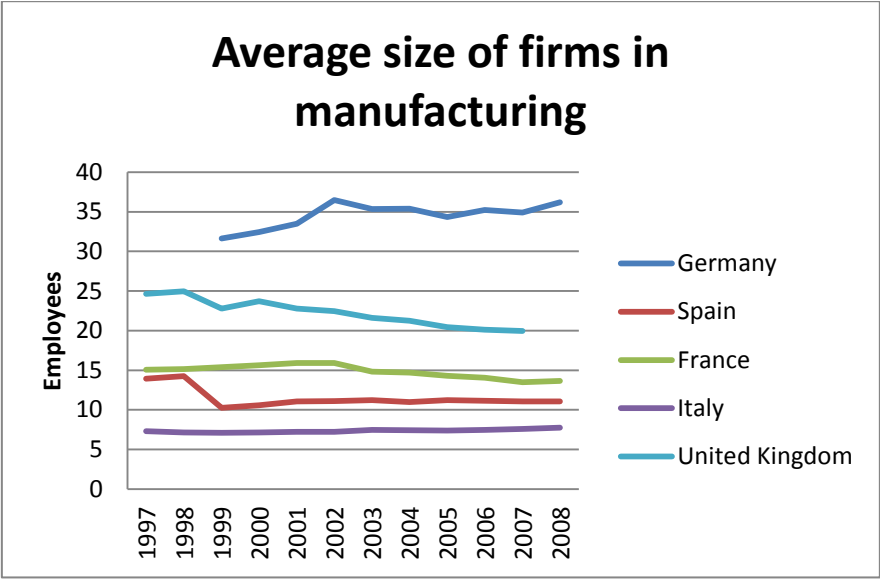
Source: OECD, SDBS database

<sup>66</sup> Today the largest steel producer is in India.

<sup>67</sup> The first wave of globalization took place just before WW1 and in more politically minded circles of political economy was called ‘imperialism’. It purported the view that any economic conquest of new territory always includes a political and a military element. This certainly is also the motivation for Hardt and Negri to revive the concept of ‘Empire’, compare (Hardt & Negri, 2000).

<sup>68</sup> An interesting recent study supporting these dimensions of heterogeneity is (Pagliarone, 2012).

For the two dimensions of size and country European data shows that developments on quantitative scales are astonishingly heterogenous. A comparison of the development of average firm sizes (measured by the number of employees) within the same sector but in different countries is revealing: Compare the large sector ‘manufacturing’ in Europe’s five largest economies in figure 5. Average firm size in the UK falls while it increases in Germany, but even more significant is that fact that the historically grown differences between countries are substantial. The overall picture is that Germany gets ever more different from the rest of the pack.

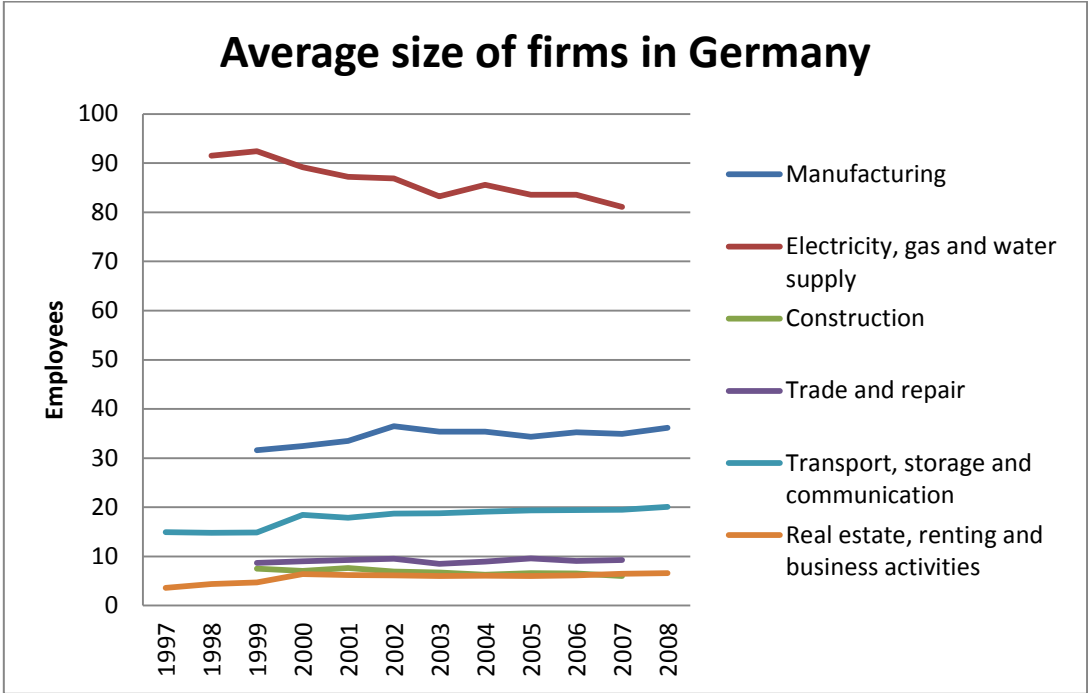


**Figure 5: Average sizes in different countries**  
 Source: Eurostat, , Structural Businesses Statistics

Comparing different economic sectors within the same country again startling differences can be observed, compare figures 6 to 8. Everywhere the size of energy sector firms is falling due to privatization efforts, but in France and Italy this change is much more dramatic than in Germany. Still this sector shows that larger production unit size is useful for the economic function it has; it provides an infrastructure to be used by all other agents<sup>69</sup>. The properties of energy production make it a globally interwoven activity fostering a highly complicated network of activities, a network that only can be coordinate by a production unit with many employees. The second largest size group in all countries is manufacturing and transport & communication. Again it is the nature of the more sophisticated division of labour in these areas which can be taken as the source of firm sizes larger than in the remaining two sectors. Average firm sizes of non-energy sectors remain remarkably stable over time in each country

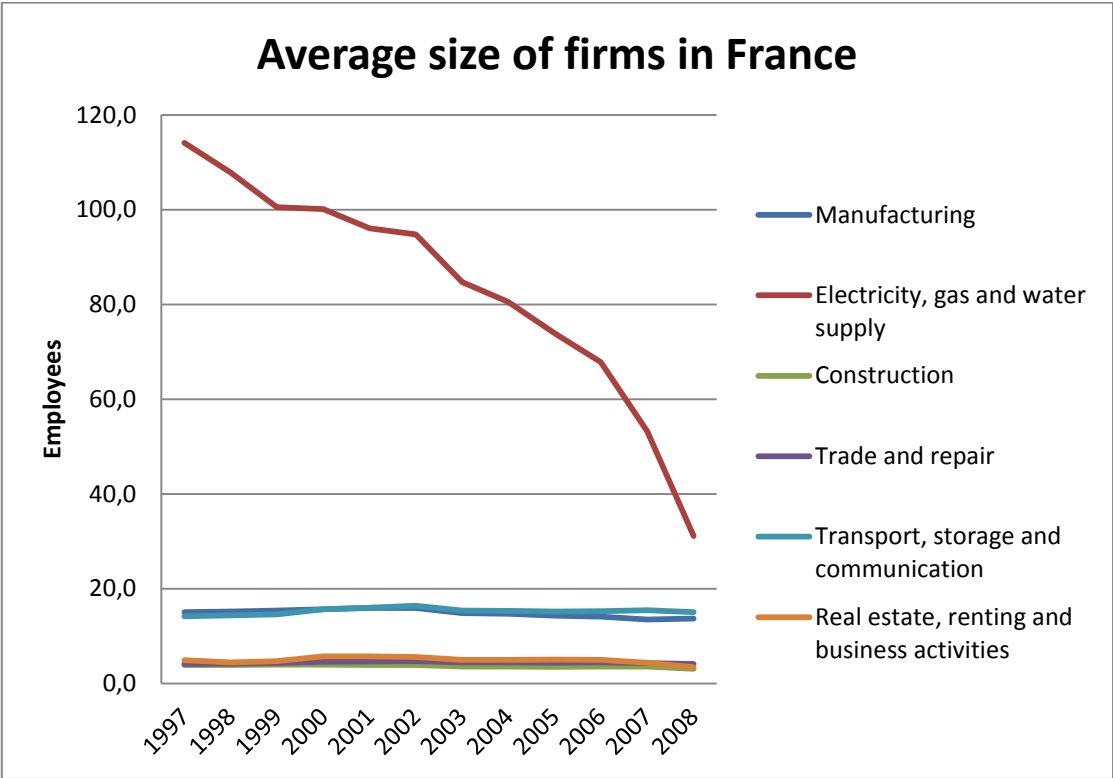
<sup>69</sup> The basic crux in energy economics is that it by ist functional disposition as infrastructure energy should follow a public good logic (and an appropriate political distribution algorithm), but that large multinational private energy producers were able to bypass single national political entities. And since a global political institution does not exist, the oligopoly of private producers is in an extremely strong position where it only has to arrange itself with the most powerful military agent, i.e. the USA. In this context the polemic arguing that fostering competition via privatization on a national level to provide low prices for consumers sounds rather ridiculous.

though the differences between countries are significant. German firms are larger than French firms, which in turn are larger than Italian firms.



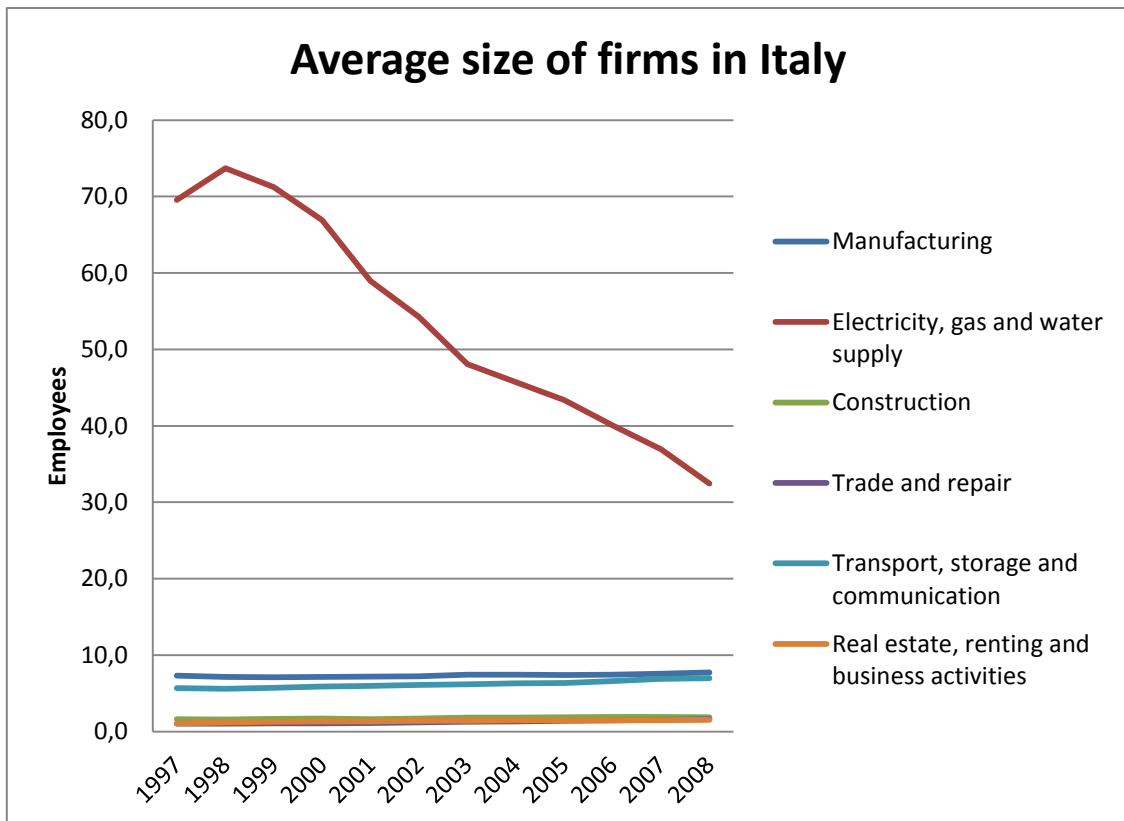
**Figure 6: Average sizes of different sectors in Germany**

Source: Eurostat, , Structural Businesses Statistics



**Figure 7: Average sizes of different sectors in France**

Source: Eurostat, , Structural Businesses Statistics



**Figure 8: Average sizes of different sectors in Italy**

Source: Eurostat, Structural Businesses Statistics

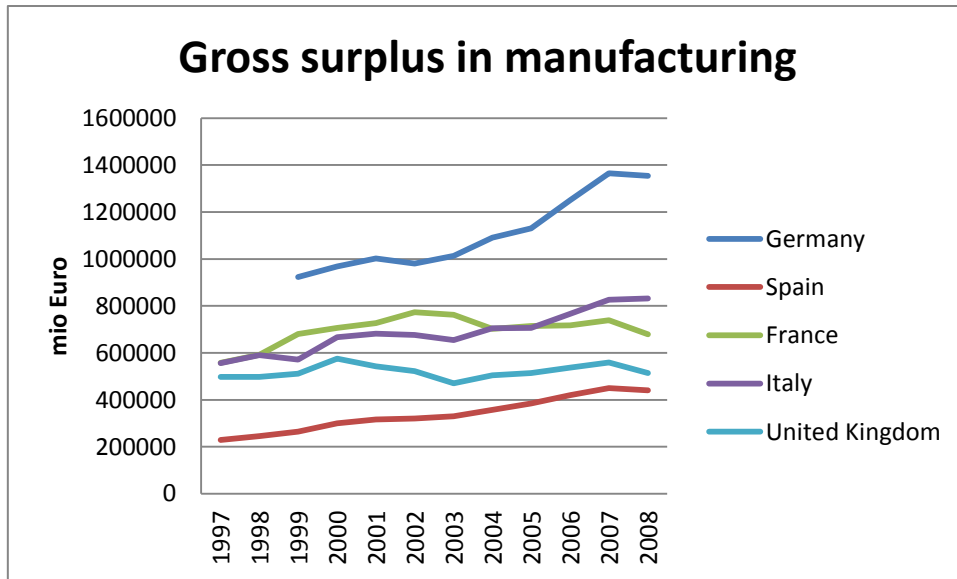
Once a certain firm size in a sector has been institutionalized and secured by a national legal framework, these structures seem to have a long-run stabilizing feedback effect.

Turning now to monetary quantities immediately changes the picture into a growth image – though heterogeneity remains. Figure 9 shows that in the largest reported sector, manufacturing, Germany has an increasing advantage of absolute gross surplus<sup>70</sup> (production value minus personnel cost) produced. The accelerating pace of manufacturing in Germany started after the ICT bubble broke in 2001. In a less dramatic way Italy and Spain did outperform France and the UK.

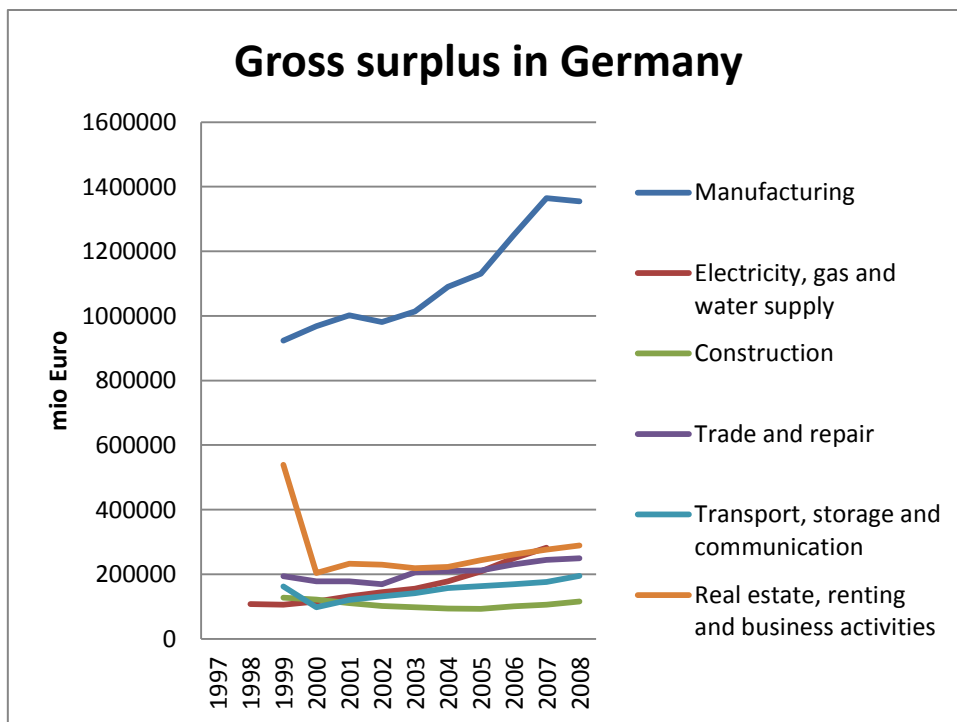
A comparison of different sectors in Germany shows how incredibly important (even compared to quantitative measures) manufacturing is. And increasingly so, as the upswing of manufacturing surplus following the ICT disaster, sector ‘real estate, renting and business activities’, shows (compare fig. 10).

But despite the fact that these absolute monetary values of gross surplus show an increasing dominance of the German part of Europe’s production structure, a glance at the indicators measuring gross surplus per employee shows something different.

<sup>70</sup> ‘Gross’, because this is the surplus extracted at the workplace before it is redistributed to other fractions of the ruling class (compare appendix A1). The state fraction as well as the finance fraction of the ruling class will also directly extract surplus by wage taxes and interest payments for consumer credits of worker households.



**Figure 9: Gross surplus in manufacturing**  
 Source: Eurostat, Structural Businesses Statistics



**Figure 10: Gross surplus in Germany**  
 Source: Eurostat, Structural Businesses Statistics

As presented in figure 11 the German dominance in gross absolute surplus in manufacturing coincides with a rather modest development of surplus per employee. It is not the case that German workers in manufacturing produce particularly high gross surplus, they rather are

below the average of the five large EU countries. What gives Germany an advantage is only the large number of employees in firms with growing size<sup>71</sup>.



**Figure 11: Gross surplus per employee in manufacturing**

Source: Eurostat, Structural Businesses Statistics

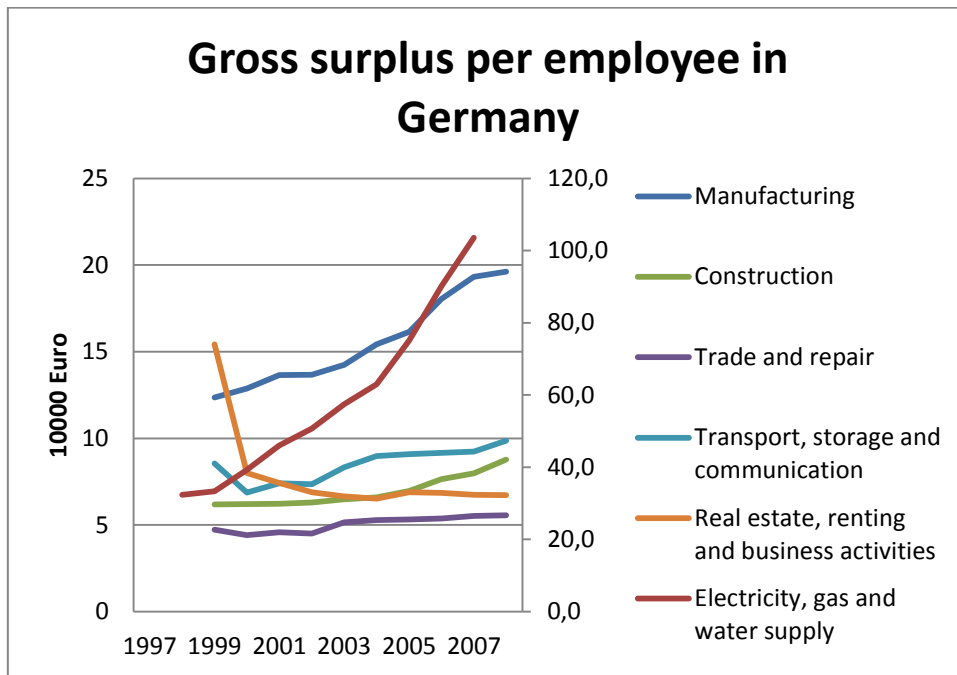
Comparing different sectors in Germany, see fig. 12, mainly reveals two facts: (1) The restructuring of the energy sector (right hand vertical scale!) has led to a boost of additional gross surplus per employee in this sector<sup>72</sup>. (2) In Germany manufacturing is the only leading force in the growth of surplus per employee, all other sectors stagnate.

All these findings clearly are preliminary interpretations rather weakly suggested by a first impression of a look at the most recent data – they are waiting for careful econometric analysis. Such an analysis certainly has to start with a methodology that allows for expanding disequilibrium and heterogeneity – this is what the data suggests.

While economic processes bound by material and institutional constraints are changing only slowly, there also exist reactions that are able to free themselves from such limitations rather quickly. As argued in appendix A2 all processes in the area of symbol manipulation, e.g. processes of electronic money transfer with a velocity approaching the speed of light, fall under this category. It is the contradiction between the relatively rigid former economic constellations and the ultrafast changes in the area of sign systems, which might lead to the abyss of self-amplifying expectations, of self-fulfilling catastrophe predictions.

<sup>71</sup> It is tempting to interpret this as another triumph of advancing division of labour in larger firms – and finding a proper place in the global division of labour. The latter interpretation, of course, is supported by Germany's surging role as global exporter.

<sup>72</sup> Note that this is not telling anything about the distribution of the salaries across the employees of the energy sector, top managers are employees too.

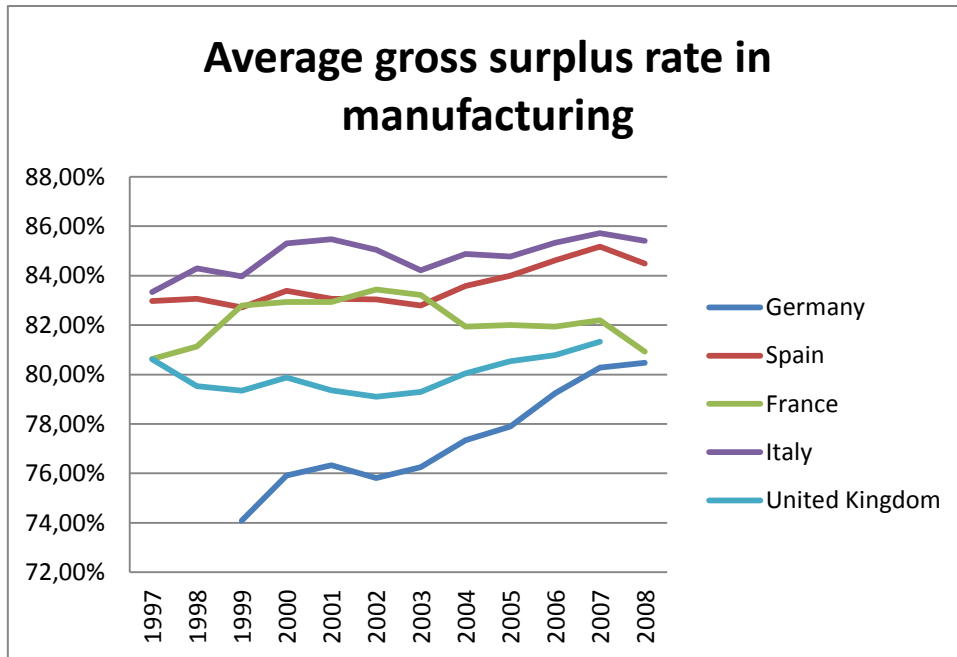


**Figure 12: Gross surplus per employee in Germany**

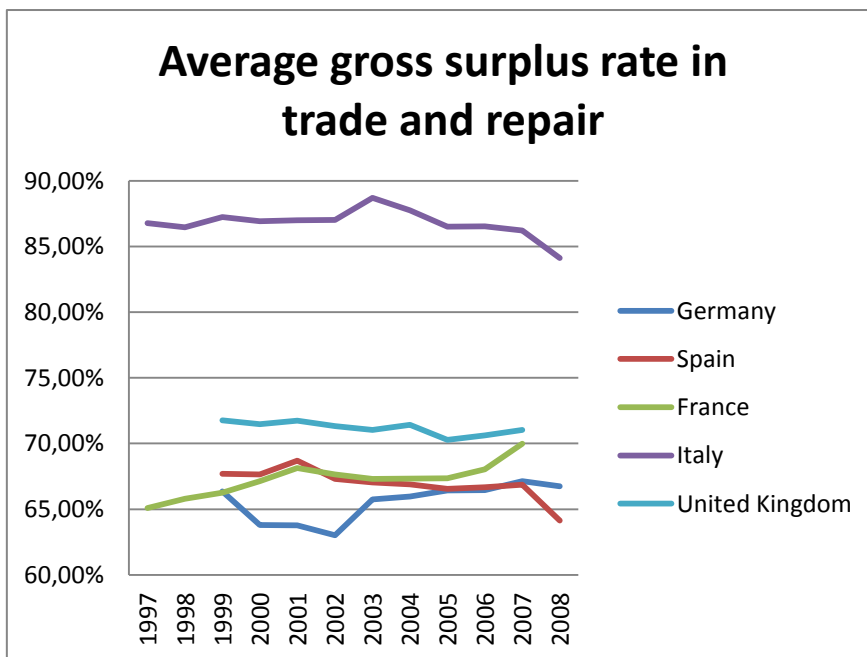
Source: Eurostat, Structural Businesses Statistics

But in different environments with different feedback mechanisms these quick and smooth adaptations can as well lead to a convergence of trajectories. As figures 13 to 16 show this is what happened to gross surplus rates (the ratio between gross surplus and production value) in Europe. Taking a look at the vertical scales of these diagrams it is clear that the differences between sectors and European countries are just within a band from 63% to 88% - adjusting scales to visualizing dynamics might at first glance hide this astonishing fact.

Surprisingly figure 13 shows that the German gross surplus rate has recently been finishing a catch-up process with the rest of Europe, proving again that the success of Germany with respect to absolute gross surplus is solely based on the mass of production that takes place in this country; and not on particularly exploitative circumstances on the workforce. And much in line with directly observable pressures on the labor force (though contradicting the media campaigns in Germany and Austria) the Mediterranean countries have higher gross surplus ratios. It remains to be investigated if indeed more authoritarian styles of work organization and hierarchical oppression forms are to be considered as responsible for this effect. Note also that the higher gross surplus rate might also lead to the redirection of a larger part of surplus towards the state fraction of the ruling class, causing more opportunities for bribery and corruption. Again this is just a hypothesis to be put to the test of extensive empirical research.

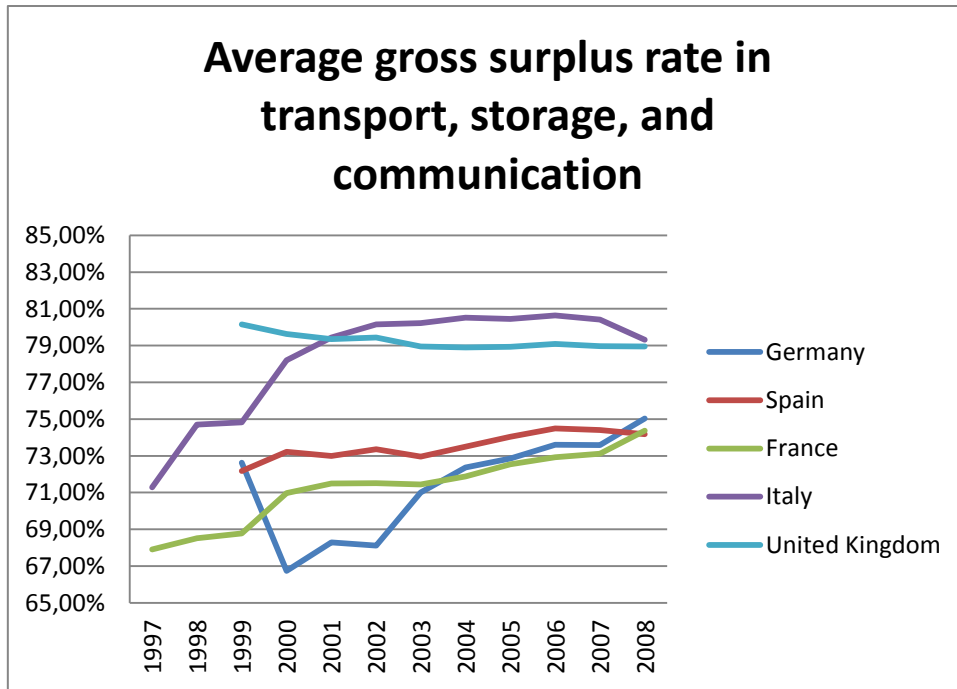


**Figure 13: Gross surplus rate in manufacturing**  
 Source: Eurostat, Structural Businesses Statistics

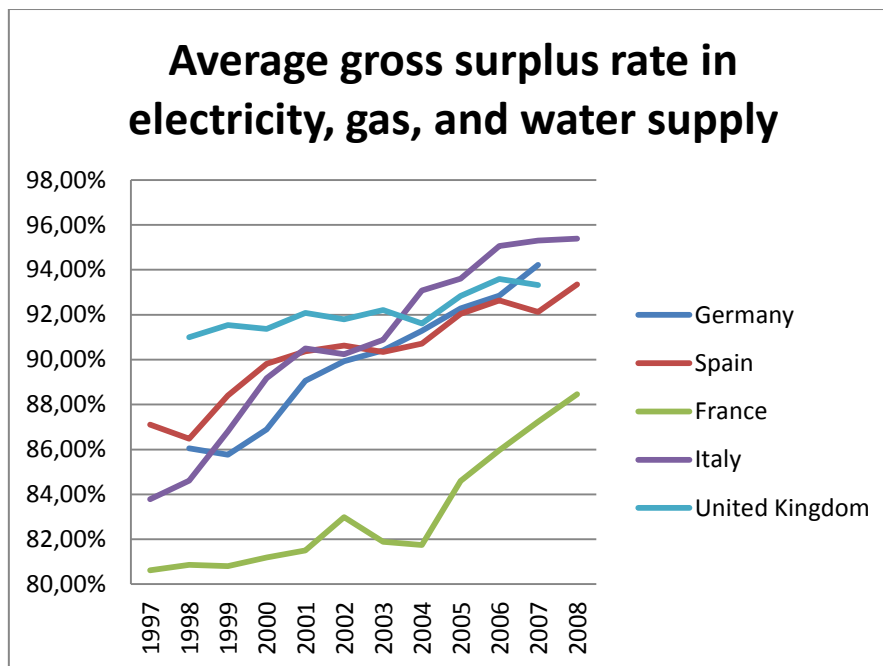


**Figure 14: Gross surplus rate in trade and repair**  
 Source: Eurostat, Structural Businesses Statistics

Trade and repair is a sector evidently offering Italian enterprises particularly good opportunities, which cannot be easily invaded by firms from other countries.



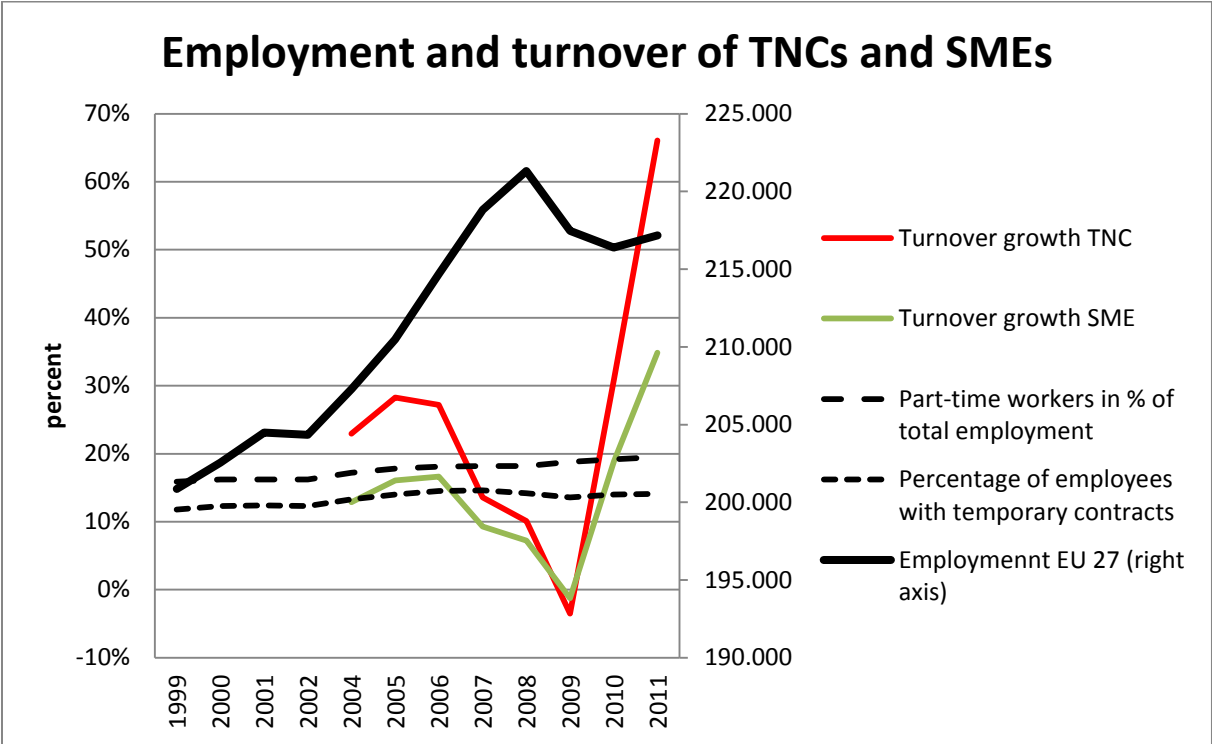
**Figure 15: Gross surplus rate in transport, storage and communication**  
 Source: Eurostat, Structural Businesses Statistics



**Figure 16: Gross surplus rate in electricity, gas and water supply**  
 Source: Eurostat, Structural Businesses Statistics

Infrastructure, exemplified here by the energy sector turns out to provide the strongest increase of surplus rates. This might be a hint that there the largest impact of new technologies can be expected.

A final question to be empirically highlighted is how the behaviour of transnational corporations deviates from the behaviour of small and medium sized enterprises<sup>73</sup>. In that respect just a few characteristics have to suffice (compare fig. 17).



**Figure 17: Turnover and employment in Europe**  
Sources: Eurostat Ameco database and Amadeus Bureau van Dijk database

Using a large database with firm level data (Amadeus Bureau van Dijk) made it possible to select Europe’s hundred largest firms and their turnover development as well as 400 SMEs and their data. The diagram shows that TNCs had reacted on the crisis sharper (falling down from substantially higher growth rates) but also were much faster with their recovery. The big differences indeed support the hypothesis that TNCs and SMEs are to be distinguished as fundamentally different types of production units<sup>74</sup>.

In figure 17 also the equally remarkable development of employment during the crisis is shown. While turnover of firms recovered in 2011 there is no improvement in employment as the slight upswing can be attributed to the increase in part-time work. Moreover the continuing increase in the share of temporary contracts indicates that business expectations are still depressed. Firm owners seem to be aware that the crisis is not over yet, and that it might be necessary to get rid of even more workers rather rapidly if a financial tsunami strikes again.

<sup>73</sup> Firm size evidently is only one of the dimensions, which make a TNC a different animal than a SME. For a more detailed discussion along these lines see [Serfati, 2011].

<sup>74</sup> Compare (Serfati, 2011) for a discussion on global value chains explaining global networks of TNCs in more detail.