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REGULAR ARTICLE

# As time went by - why is the long wave so long?

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## Abstract
Since the end of the expansionary period after the Second War, the world economy went through a long period of mediocre growth with a major recession in 2009 and another in 2020. This period is examined following *As Time Goes By*, the last contribution by Chris Freeman, with the cooperation of this co-author. As a long period of readjustment after the beginning of a structural crisis is imposed by the mismatch between the capabilities of the emerging techno-economic paradigm and the socio-institutional framework, my argument is that the duration of this transition is explained by the difficult process of replacing a successful institutional setting, that which supported the post-War expansion, by the new accumulation regime that is being constituted. Instead of most of the literature on long waves, which tries to uncover some mechanics of succession of radical technological innovations, this paper addresses different questions: how does the socio-institutional adaptation proceed, and how relevant is this process to explain the length of the downswing since the turning point of the 1970s. In order to investigate such process of readjustment, the conditions for the new rule of financial accumulation are discussed, including the forms and duration of the process of selection, reproduction, and education of the elite, and changes in institutions, norms, and social networks.

**Keywords** Business cycle · Long wave · Evolutionary economics · Secular stagnation · Schumpeter · Kondratiev

**JEL** E13 · E17 · E32 · E42 · E58 · E62

## 1 Introduction

It is widely accepted that the 1973–5 crisis represented the turning point of the post-Second War expansion. After the profit rate in major economies peaked at its historical

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maximum at the end of the 1960s, a drastic change was imposed in the larger economies by the corrosion of the conditions for sustained productivity gains and accumulation, the squeeze on profits generated by the rise of organized labor, and the turmoil with the end of the Bretton Woods system, leading to a structural crisis. In the following decades, the US model, based on technological dominance, domestic over-consumption, and military and political supremacy, eroded.

Like all previous downturns, the period since the recession of 1973–5 has been marked by the availability of a new constellation of technological and economic innovations, in this case based on computerization, automation, genomic science and new processes of flexible production, that are being developed for years. The key inputs (microelectronics), the carrier branches (computers and software industries and pharmaceuticals), the new transport infrastructure (based on telecoms and internet) and organizational innovations and cultural changes (such as the flexible forms of work organization, the rise of individualism, and expansion of the prerogatives of intellectual property) and new favorable location for the production process with high surplus (Asia), were available since the 1980s or the next years and, if fully developed, could generate favorable conditions for a new phase of recovered surplus gains. Yet, four decades have passed without full redefinition of the socio-institutional system following the prevailing agenda, as this transition is the longest phase B on record.

In *As Time Goes By*, Freeman and I explored how the potentialities of diffusion of major innovations changed the processes of production and distribution of goods and services and, thereby, the organization of the economy (Freeman and Louçã 2001). The book registered that, in the past, the fortunes of Carnegie, Krupp and Ford were accumulated by successful entrepreneurship in the new dominant paradigm. More recently, Alibaba, Amazon, Apple, Facebook, Google, and Microsoft became some the most profitable firms in the world. The constellation of innovations, products and processes generated by the information and communications revolution created new forms of investment, accumulation and realization, and by the mid 2020 Facebook is worth twenty times the market value of General Motors, and Apple's value is five times that of Wal-Mart. Table 1 summarizes our conclusion in *As Time Goes By* and indicates some recent changes, noticing both the expansion of new products and areas of business and of new areas of tension. The implication for the socio-institutional system will be explored in this paper.

Wee also emphasized that industrial or technological revolutions are insufficient to propel structural change. The reason is the distinction between the emergence of the new key factor of an industrial revolution and its diffusion, requiring further social and institutional change leading to a new productive order. This is why we focused on the landscape of the industrial and economic sectors concentrating or following the gradient of productivity and profitability, on the impact of the major changes in production and distribution, and essentially on the social relations supporting both. Rejecting technological determinism and mechanical views, we argued that the explanation for the long period of readjustment after a structural crisis should concentrate on the mismatch between the capabilities of the emerging techno-economic paradigm, established from the pool of available epoch-making innovations, and the socio-institutional framework required for each specific form of their deployment, as previously established (Freeman and Perez 1986). In that sense, a new expansion requires a far-reaching realignment of institutions and social relations and of the international

**Table 1** The dominant techno-economic paradigm (TEP) and the conflicts over its development

| | Constellation of innovations | Carrier branch | Key input | Transport and communications infrastructure |
|---|---|---|---|---|
| The dominant new TEP (Freeman and Louçã 2001, 141) | Computerization of the entire economy | Computer, software, telecommunications equipment, biotechnology | Chips | Information highways (internet) |
| Major developments and areas of conflicts | Internet and communications as tools for networking the entire society | Control of telecommunication circuits | Control of basic science and oligopolistic firms | Control of 5G technology and networks |

hierarchy, which is still incomplete. The analysis of institutional change is part of the unfinished legacy of evolutionary economics (Freeman 1998, 12; Louçã 2020), and this paper contributes to that objective.

In the next pages, I discuss some of the characteristics of this expansion of the new techno-economic paradigm and its contradictions with the institutional framework, in the context of a long wave explanation. The peculiarity of the mismatch is approached first considering a map of the recent evolution (section 2) and evidence for the crisis of accumulation forcing adaptations of the financial system (section 3); then, some contemporary institutional changes are inspected (section 4), and some conclusions are offered. As much of the literature on long term growth concentrates on technological potentialities, while ignoring the social and institutional adjustment processes, this paper focuses instead on those changes, which are crucial to understand the duration and difficulties of the reorganization of the mode of development.

## 2 The dominant agenda for changing the socio-institutional framework

The mismatch between technological potentialities and the social and institutional system is the battleground between adaptive and counter-adaptive forces. With some co-authors, I discussed how the mismatch is being addressed by neoliberal solutions that are been imposed through deep institutional transformations, for instance the status of independence of central banks, deregulation of capital flows, austerity policies, and removal of labor-market protections. Using case studies from the US, Europe, Latin America and Asia, we investigated the conformation of social forces and intellectual movements that shaped policy and politics, selected the personnel, trained the bureaucrats, reproduced the ideas, nd transformed institutions (Louçã and Ash 2018; Louçã et al. 2021). I draw on those findings here in order to explain the difficulty to impose the agenda of five combined solutions for the mismatch: changes in the pattern of work, the financialization of surplus extraction, the neoliberal reconfiguration of institutions, accumulation via intensified inequality, and changes in the international hierarchy, aiming at the expansion of profitability and restructuring the social framework.. Its main features are summarized in the description of the evolution of the accumulation regime in Table 2, compared to possibilities offered by the transition after the Fordist regime.

As noted, the last quarter of the twentieth century was dominated by intensive institutional change, but not in the sense Freeman would have preferred. Structural unemployment, a topic he had the time to address (Freeman and Soete 1994), dominance of monetarism in the management of central banks, and financialization emerged as drivers of liberalization and what came to be known as globalization.

The impact of this process was a partial recovery of the rate of profit just at the beginning of Phase B (the long period of slow growth, after Phase A, the period of intensive investment, profit and accumulation), as liberalization in the 1980s proceeded and transferred rents from the public to the private sector, and as, in the 1990s, the entrance of China and the ex-USSR in the world market provided an additional boost to the extension of labor in the production for markets global and to the intensive financialization of the world. This took new forms in the first two decades of our century, namely in changes of the type of labor contracts, of financial deregulation and the amplification of the scope of privatization processes. Yet, the 2007–8 subprime crash, igniting in 2009 the first recession since World War II to reduce global output, and the sovereign debt crisis that followed in Southern Europe in 2011, expressed the tensions of this mode of development based on free circulation of capital. This further aggravated instability. As these processes of adjustment undermine the conditions of relative stability of the economic and social management prevailing during the previous expansion wave in the largest economies, they lead to fragile regimes and to chaotic international relations, which are dominated by the decay of the US hegemony. This is currently called either "stagnation" or the "end of globalization".

In any case, more than forty years of drastic changes in the economy were not enough to fully redefine social relations. This is why it is relevant to analyze the institutional and social conditions for the slow recovery and recurrent crises.

## 3 Accumulation and profit in the long downturn

The long-wave hypothesis is that long-term expansion is propelled by radical innovations enabled by rising profitability, which reduces the price of fixed capital and elevates the surplus rate, under a convenient institutional setting (Phase A). The expansion accelerates accumulation of capital under a stable monetary and financial system and enlarging markets. Instead, in the long downturn, stagnating productivity and reduced the rate of profit lead to frequent and deep recessions (Phase B). The devaluation of capital during the stagflation of the 1970s constituted an adjustment of sorts, as it also happened with the speculative crisis of 2000 and the subprime crash and the consequent 2009 recession.

This section identifies some recent trends in the profit schedule, and then describes the characteristics of the current form of accumulation, mostly using US data.

**Table 2** Conflicts formatting the accumulation regime

| | Changes in patterns of work | Financialization | Reconfiguration of institutions | Accumulation and in/equality | International hierarchy |
|---|---|---|---|---|---|
| Post-Fordist possibility for the adoption of the new TEP (Freeman and Louçã 2001, 325) | Higher and diversified skills | Control of international movements of capital | Extension of the welfare state (e.g., a national health system in the US) | Social inclusion | EU consolidation |
| | Labor contracts promoting capacitation | Insulation of commercial banks from speculation | | Education and public goods as the driving factors for equality | Negotiated management of the international order |
| | Sharing economy | | | | New windows of technological opportunity for developing economies |
| Evolution for last quarter of the twentieth century | Large structural unemployment in developed economies | Independence of the Central banks and monetarist dominance | Privatization of public goods and reduction of the welfare state | Social inequality driving accumulation | Decadence of US hegemony |
| | | Finance based on rents (contracts, taxes, privatization of social security systems) | Neoliberal education of cadre for central banks and governments | | Asia emerges as the factory of the world |
| Twenty-First century changes and conflicts | Gig-economy and deskilling | Financial profits based on extraction of rents | EU treaties establishing an ordoliberal rule | Social exclusion amplifying inequality in developed economies | Emergence of China as an international power |
| | Generalization of precarious and informal work with no labor contract or representation | Subprime crash | Dispute on the future of social security and national health systems | | Sovereign debt crisis in European countries |
| | | Financial bubbles (housing, price of shares, derivatives) | | | |
| | | Rift among monetarists as unorthodox monetary policy is adopted | | | Emergence of populist alternatives in some regions |
| | | | | | Brexit |
| | | | | | Restrictions on international trade |

### 3.1 Was there a recovery after the 1980s?

Tracking the profit rate in UK, Italy, France and Germany, Angelo Reati found "a durable recovery" since 1982 (Reati 1990, 6–8). Other authors concurred: in spite of slow accumulation, in the 1980s there was a "modest restoration" of the profit rate, or even a longer recovery peaking in 1997 or in 2009 (Duménil and Lévy 1993, 250; Carchedi 2011; Basu and Vasudavan 2013, 57–89). Brenner identified a "period of prosperity" beginning in 1993, at least for the manufacturing sector, and observes that the US performance during the second half of the 1990s was better than in any period since 1970s, but the uptick did not extend to all developed economies, with some lagging significantly (Brenner 2002, 49, 265–6, 278). Roberts cited a rise in the profit rate from 1975 to 2008 for the world and from the 1980s to 2007 for the US economy. This eventually led some authors to raise the question of whether a new phase of capitalism was opening: "The fall of the profit rate was a crucial factor of the structural crisis of the 1970s, and its recent recovery (in the last years of the century) may signal the emergence of a new phase in the history of capitalism in the 20th century" (Duménil and Lévy 2002).

Yet, evidence indicates that these years of upswing of the profit rate were but short term Juglar phenomena. As Shaikh noticed, in what he identifies as a 1982–2007 boom, low interest rates raised the net return on capital and allowed consumer debt to maintain workers' standard of living despite decreasing wages (Shaikh 2011, 45). Kliman emphasizes that "before-tax rates of profit of US corporations did not trend upward since the early 1980s because of an increase in the rate of exploitation, but because of a long-term decline in interest rates" (Kliman 2010, 10). The management of monetary policy was pivotal for the short recovery of the profit rate.

### 3.2 The subprime crash and the next bubbles

Even if in the developed and some emerging economies, a combination of factors partially restored the profit rate in the 1980s, namely through the imposition of lower wages, the expansion of world markets, easy credit and cheaper imports softening the social impact of lower disposable income on consumption, a global and sustained upswing did not occur. If some controversy remains on the dating and measurement of the short recovery in the 1980s and 1990s, the fact is that the subprime crash in 2008 provoked a major recession marked by financial havoc. The severity of the impact of this crisis on the financial system is certainly a consequence of its fragilities and interlinkages, but it also reveals the systemic tensions amplified by the long transition.

In fact, the subprime crash confirmed the dangers of leverage and dissemination of toxic assets through the financial system. The subprime market itself was small, accounting for just US $1 trillion out of the US $12 trillion value of all outstanding US mortgages, and the whole US stock market represented around US$18 trillion. Even if half of the subprime mortgages corresponded to bankrupted families, it would account for no more than 3% of the stock market. Nevertheless, the panic propagated through the interlinked system and, even when buffered by massive and unprecedented intervention by central banks, provoked a global recession. Global contagion had happened before with the 1998 Russian crash, as six of the top ten lenders in the subprime mortgage market in the US had gone bankrupt, but never to the extent of the

2008 crash and the following recession. Its combination of financial devaluation and debt growth precipitated a deep (US) and long recession (Europe).

As Perez pointed out, the technological bubbles and manias are endogenous to the diffusion of a new techno-economic paradigm. As the internet bubble (1997–2000) and the “easy liquidity bubble” (2004–2007) proved, the extension of this process may be overwhelming (Perez 2009: 780). The financial system, the core of the accumulation process, is the major factor for its instability. Figure 1 exhibits Shiller’s cyclically adjusted price-earning index for a long period (1860–2020, compared to long term interest rates), showing the 1929 and 2000 peaks, as well as a smaller peak preceding the subprime crash, and the new peak in 2020. These bubbles are part of this turbulent process, as long stagnation increases the appetite for profitable ventures in leading sectors or just for speculation, and as financial inflation draws savings into the markets and multiply the notional value of capital. Shiller’s index is an apt description of the new accumulation regime.

In any case, as bubbles lead to crashes, devaluation of financial capital is not enough to create the condition for a new rise in the profit rate. Only a new stable productive order may give place to a new prolonged expansion, if profitability and accumulation are reestablished at a convenient and sustained level.

### 3.3 The financial system

Finance has played a crucial role for the reproduction of the neoliberal model for the last four decades, although it is a destabilizing force. The role of finance is to facilitate and to widen the transfer of value and to impose coherence on the model, but the rapid expansion the financial titles, which establish rights of access to the uncertain future distribution of surplus value, creates new vulnerabilities. Its rise is an expression of competition in order to ascertain political and legal rights to capture future flows of surplus and, as the financial share of profits grows, a new regime of accumulation is

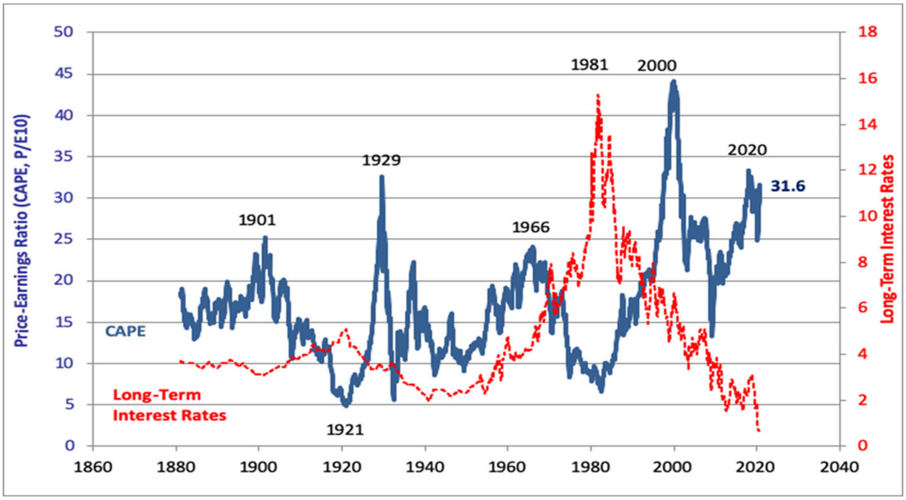


**Fig. 1** Shiller’s cyclically adjusted price-earning index (1860–2020). S: Shiller, url: http://www.econ.yale.edu/~shiller/

being defined. Figure 2 highlights the amplification of the share of finance in total profits for the US, which rose on average by 57% from Phase A to Phase B. Furthermore, the graph shows oscillations in the financial share of profits, obviously with the subprime crash generating large volatility.

This rise of finance is described as “financialization”, as part of the internationalization of production, labor, and value chains, generating monopoly rents. Namely because a part of profits is not retained for purchases of new fixed capital, but expended as payouts to shareholders and to interest, financialization leads to a shortfall of investment and of aggregate demand. This suppression of physical investment highlights the distinction between capital as property and capital as function. The thirst for dividends as shareholders and managers look for short-term maximization is detrimental to investment. By the time of the subprime crash, the share of US profits dedicated to investment had fallen to the 1949 level. Indeed, the rate of investment diverges from the profit rate for some decades in the Eurozone and the US (Kliman and Williams 2012, 134) and this is the crucial expression of the long Phase B.

Evidence from firms confirms this trend. A panel analysis of balance-sheet data for 2881 non-financial listed European firms in 1995–2015 found financialization associated with increased financial payments but stagnant or declining accumulation (Tori and Onaran 2017, 35). In the US from 1980 to 2015, dividends tripled as a share of the gross domestic income. Furthermore, the expansion of finance has changed the mode of distribution of profit. As the knowledge-based and information-based economy grows, intellectual property rights and network externalities represent new forms of appropriation of value. These two characteristics define finance in the new century: it concentrates resources in the dominant economies, which receive payments as property rights, and financial agents capture a larger part of the pool of surplus value. But this leads to bubbles and crises when financial assets are abruptly devalued,

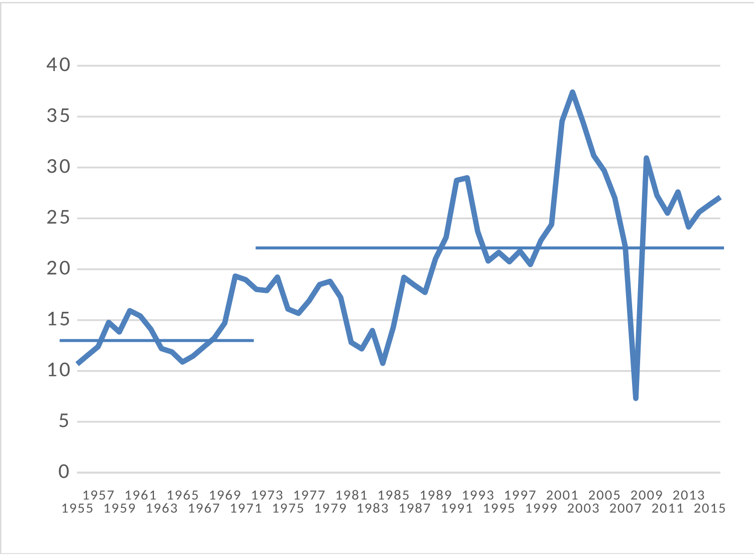


**Fig. 2** US financial profits as percentage of corporate profits of domestic industries, 1955–2016. S: Data on total profits, financial and non-financial, from the National Income and Product Accounts (NIPA), US Bureau of Economic Analysis (BEA). The average for each period is marked (1955–1974, 1974–2016)

a likely occurrence because their size is largely decoupled from the surplus actually generated in the economy (Perez 2009). The 2007–8 crash and its fallout revealed a deep systemic crisis.

### 3.4 The evolution of the profit rate

Following Shaikh's approach, the next figures plot the schedule of the profit rate in the US.[1] The results indicate that the post-1970s is marked by business cycles with two deep recessions, the dot.com and the subprime crashes. Comparing the rate of profit and its value net of corporate taxes, we obtain a realistic proxy for the "profit of the enterprise", to use Marx's concept (Marx 1894). If an average of the annual profit rate is computed for the available statistical data, a reduction of 36.7% is obtained from 1955 to 1974, Phase A, to 1975–2012, the available years for Phase B, as shown in Fig. 3.

Evidence shows short cycles of recovery of the profit rate, namely in the early 1980s and 1990s, as the Juglar cycles proceed, but not reaching the level of the previous Phase A. If financial profits are also considered, the total profit rate is higher, still following a long wave downturn as compared to the previous epoch. As finance used its might to obtain special deductions and exemptions, a special legal status was established: in fact, two thirds of the decline of corporate taxation in the US is attributable to the firms shifting profits to tax havens, primarily financial corporations (Fiebiger 2016, 19).

Considering taxes on corporate income, evidence shows that the average annual rate of profit of the financial and non-financial US corporate sector still declined by 15.8% from Phase A (1955–1974) to Phase B (the available years are 1975–2012). In spite of the reduction of corporate taxes and the price of capital, through the historical decline of the interest rate, profits did not recover to fuel a new Phase A.

### 3.5 Technological paradigm and accumulation regime

Each techno-economic paradigm corresponds to a dominant regime of accumulation. In the long downturn of the fourth long wave that regime is financialization, that synthesizes two trends: a peculiar reconstitution of social power (with the prevalence of financial giants) and the dominance of a specific form of extraction of surplus (namely through the capture of rents). Its main agent, the new institutional framework emerging as a dominant force in recycling credit and financial assets, is the shadow-banking mechanism, as bank-like functions are undertaken on a massive scale by shadow agencies without public regulation, oversight, or insurance required of traditional banking, and as they intermediate a huge share of the global savings. From roughly 5% of credit creation in 1945, when the wings of the crisis began to spread in 2008, shadow banking constituted more than 60% of the credit transformation, and even more today. The main supplier of credit had shifted from the traditional banks to this system, which is unstable, as noted when the financial interlinkages amplified the stampede as the first funds ceased payments in the summer 2008.

[1] The computation is: $(P/KN_{t-1})*100$, in which P is the non-financial corporate profit, computed at current cost with inventory valuation and capital consumption adjustment; KN, stock of net fixed capital, including equipment and structures. The variables are obtained in real terms (Lapavitsas and Mendieta-Muñoz 2016).

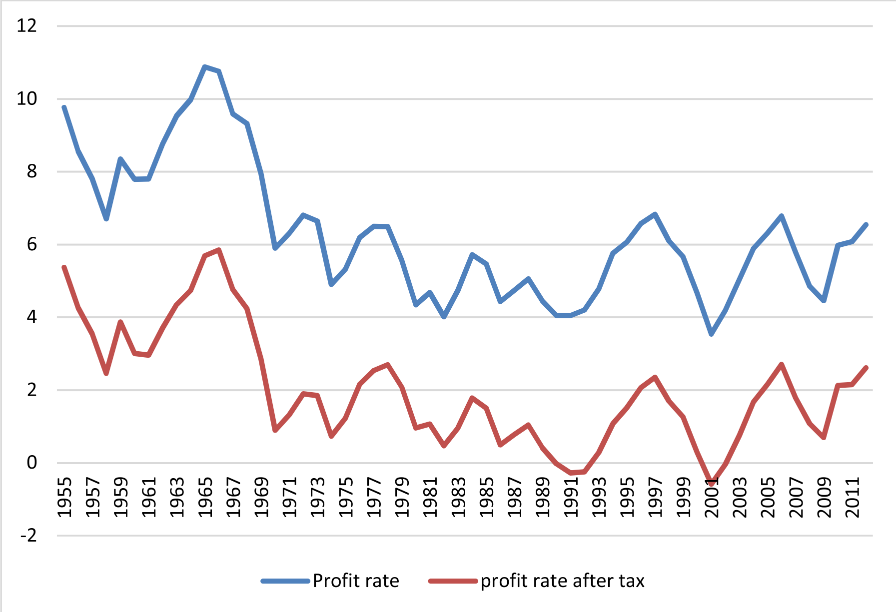


**Fig. 3** Profit rate in non-financial firms in the two sub-periods (Phase A, 1955–1974, and Phase B, 1975-...), for the US, total and net of corporate tax. S: Profit rate, adjusted, of the non-financial corporations/fixed assets equipment and structures, according to the definition of Shaikh. From "Table 1.14. Gross Value Added of Domestic Corporate Business in Current Dollars and Gross Value Added of Non-financial Domestic Corporate Business in Current and Chained Dollars"; "Table 6.1. Current-Cost Net Stock of Private Fixed Assets by Industry Group"; "Tables 6.16A, B and C: Corporate Profits by Industry", National Income and Product Accounts (NIPA), US Bureau of Economic Analysis (BEA). Taxes on corporate income, same source (Lapavitsas and Mendieta-Muñoz 2016). Only data for these years is available

This shadow system weathered the crash and revived long before most of the global economy. A decade after the 2007 crash, the mountains of debt increased in the dominant economies plus China for one third, and the banking assets were larger than on the eve of the crisis. In the process, shadow firms were reconstituted and rapidly came to dominate as the top five shareholders of the largest US banks: BlackRock is the first, Vanguard the second, and State Street the third shareholder in the major banks (JP Morgan Chase, Bank of America, Citigroup) and BlackRock is second and Vanguard is third in the other largest bank (Wells Fargo). BlackRock, Vanguard and State Street, taken together, are the largest shareholder in 40% of listed US firms, which represent 80% of that economy (Azar et al. 2016). After the crash the shadow system reestablished again its preponderance in the global concession of credit and speculative movements.

Two conclusions are relevant for the discussion on how institutional change proceeds. First, this accumulation regime based on financial inflation and the shadow-banking dominance is highly unstable, in the sense Carlota Perez identified as the ubiquity of manias and bubbles in the global economy. Second, several major changes influence the evolution of the rate of profit: first, the wage share of total value added declined; second, the reduction of policy interest rates augmented the "profit of the enterprise"; third, austere fiscal and budgetary policies protected rents; fourth, transfers of public resources have financed and bailed out private capital in several crises. Furthermore, massive injections of liquidity by the central banks promoted low interest rates, thus reducing the cost of portfolio investments. But these processes were insufficient to restore the conditions for a process of accumulation leading to a new long wave, as the average rate of profit never regained the level of the thirty golden years. Furthermore, this led again to combined bubbles in the stock market and the bond market, as well as, in some relevant cases, the housing market. The increased volatility in 2020 may indicate the danger of another bubble.

## 4 The long adaptation of the socio-institutional framework

During the Phase B of the fourth long wave, the average profit rate in developed economies was inferior to that of the previous period, namely for the US and European cases. Yet, the new techno-economic paradigm was already constituted by the 1990s and 2000s, after a long period of installation. Indeed, if we consider the number of years required for different products to achieve dominance of the markets, a pattern of a lengthy adaptation emerges: radios had become widespread to more than 80% of US households in less time than VCRs or color TV, but cellphones were much quicker (20 years) than standard telephones (60 years); yet the microwave was diffused quicker than the cellphone. In other cases, there were social barriers for further expansion after 50%, such as with automobiles (more than 60 years), but smartphones have dominated in less than a decade, as the internet (The Economist 13 April 2012).

Many of the new products prove the potential of the microchip, as a general purpose technology, to reshape the economy (e.g. internet, smartphones, AI, virtual reality, robotization of production). But, as with electricity and the automobile, the full development of their potentialities requires a new set of infrastructures, business models, cultural norms, production chains, forms of mass production, nationwide and international transport systems, dedicated energy network, changes in city patterns, adaptation of means of production, and new legal and environment rules.

The fulfillment of the potentialities of the new technologies for reshaping production and increase profits therefore depends on the prevailing social conditions. This is generally admitted. Perez presents the case, from past history, as a sequence: "The process follows a basic stable sequence: irruption of the revolution, two or three decades of a turbulent installation period ending in a major bubble collapse, then a recomposition of the socio-institutional framework that regulates finance and sets the conditions for the final deployment period, a time of more organic growth that lasts until maturity and exhaustion are reached, setting the stage for the irruption of the next technological revolution" (Perez 2009, 781). This section provides arguments for the consideration of such recomposition of the socio-institutional framework, noting that, as each process is unique and does not necessarily reproduce details of historical precedents, understanding the specific social and institutional adjustment is the key for analyzing long term dynamics.

As next paragraphs indicate, shocks were instrumental to force adaptation of socio-institutional systems to the accumulation regime and, in spite of that, long periods of instability followed. Two hypotheses have been usually presented to explain the length of this adaptation. One is popular resistance to change, the other being institutional inertia. In the next subsections I will briefly examine and reject the first and then consider the alternative one.

### 4.1 The impact of shocks

The adaptation of the socio-institutional systems to a new accumulation regime proceeded during the 1970s and the 1980s through shocks, which determined different forms of social and economic change. Arguably, the new agenda may only be viable through this type of converging shocks. It was the case in Chile of hyperinflation, the balance of payments crisis in 1973 and then the military coup, the pound crisis in 1976 and the radical program of Margaret Thatcher in the UK from 1979, and the victory of Ronald Reagan in 1980 and in particular his ability to crush the union of the air traffic controllers in the US. Other shocks were the Mexican debt collapse in 1982, the failure of the French government expansionary policy in 1981, the IMF intervention in Portugal in 1977 and 1983, the debt crisis for the Southern European countries in 2011 or the crisis in Brazil since 2013.

These shocks opened a road for liberalization through means that mobilized ideological (as in Britain under the pressure of the IMF) or authoritarian processes (as in Chile, under a dictatorship), or pragmatic adaptation (as in Mexico and France). The change could be imposed through a financial crisis (as in Mexico and Argentina) or through largely domestic transformation of the state apparatus (France, Brazil and China), or still the emergence of a new governing elite subordinated to the financial interests (Portugal and Spain) (Babb 2001, 189; Camp 2002; Fourcade-Gourinchas and Babb 2002; Fourcade 2009). But regardless of the pathways, the remarkable feature of this period was not the particular enabling shocks but their coalescence on a single direction of change towards establishing neoliberalism as the law of the land. This is how the mismatch is being repaired, with an intense but necessarily slow reconstruction of the rules of power, and it is the reason for considering the first condition for the new accumulation regime, the change in social and work relations.

### 4.2 Social conflict in the long waves

Eric Hobsbawm suggested that social conflicts follow a historical pattern consistent with long economic fluctuations. His intuition was that the social conflicts were temporally clustered at the end of "long phases of development" or Kondratiev waves. Hobsbawm's four cases were the strike movement of 1847–8 at the end of the first wave, the 1868–1873 strikes at the end of the second-wave expansion, the 1889–1893 strikes at the end of the second-wave depression, and finally the strikes at the turning point of the third wave (Hobsbawm 1964, 158, 163). Mandel also associated intensification of class conflict with turning points (Mandel 1995, 45).

The explanation of this clustering of social conflict provides clues on the mismatch, considering two conjugate hypotheses. The first is that technological revolutions deeply affect the relations among social classes. Social conflict depends of course on more factors than the shape of technologies, capital markets, government intervention, and social habits, but the framework for these variables is provided by the dominant productive order. Indeed, its adjustment may drastically change the routines for the workers, demanding a change of skills and professional distribution, new rhythms and forms of mental and manual work, new forms of control and hierarchy. In any case, daily life changes.

The second basic hypothesis is that of the clustering of social conflict at the turning points of the long wave. In the long phase of expansion, the worker's movement tends to build strong organizations, namely trade unions, on the basis of full employment. Consequently, strikes tended to cluster near the upper turning point, as was clearly the case with the 1968–1969 and 1974–1975 periods. Another form of clustering is related to the resistance to the structural crises, which takes place around the lower turning point of the wave. This was the case in 1920–1926, 1936 and immediately after the end of the Second World War.

The United Kingdom is a telling example, considering its history of workers' organization (and the availability of strike statistics since 1890). For the first half of the century, strike movements closely followed the economic dynamics. Yet, after the defeat of the 1926 general strike and under the pressures of the Great Depression, strikes abated substantially.

Then, in the post-World War period Britain the economic expansion and full employment lead to a strike peak in the 1970s and 1980s, around the turning point of the fourth long wave (Fig. 4).

The record confirms an intense history of labor conflict until the defeat of the miners in 1985. A researcher called the following period the "strike drought" (Van der Velden et al., eds, 2007). The defensive posture of the workers may be explained by a combination of factors: the defeat of the trade unions under Thatcher (a process of marginalization pursued by Blair), a change in the social recognition of the working class, namely through financialization of debt of the households, and the vulnerability of the labor status, as diverse precarious forms of contract became the norm for young workers and skilled professionals. The same story can be verified for France (Chauvel 2016, 163).

The record is similar in other countries. If these strike movements can only tentatively be taken as a proxy for social tensions, they show that after the turning point of the 1970s the workers' resistance was reduced.[2] For all advanced economies, Glyn proposed a comparison between the days on strike and the average wages relative to share prices. Again, the rise of workers resistance in the late 1960s and the early 1970s is shown, as well as the turning point and then the long decline of the social power. The effect of financial inflation is also present (Fig. 5).

Recent research reached similar conclusions: in spite of long term sluggish wage growth, the workers' action and representation diminished even when profitability raised. Private sector union membership in the US reduced from one third in the 1950s, and still 24% in 1973, to 6% in 2019, and inequality was accentuated (Bivens et al. 2018; Stansbury and Summers 2020). At the same time, the firm's power increased (the average price markup went up from 7% in the 1980s to 15% in the 2000s in the US; Farhi and Gourio 2018). As the traditional workers action waned before the turn of the century, other social movements emerged, such as the climate justice movement, in some cases with deep social roots and electoral impact, but they are at the beginning of a process of disputing new ideas. If profitability only marginally

[2] A reviewer pointed out that the accountability of days lost on strike is but a poor representation for social conflict. This is right, mostly for some of the periods under consideration and given other historical constraints. Social unrest is also expressed under other forms, although not easily measurable, and that is the reason to use this limited proxy.

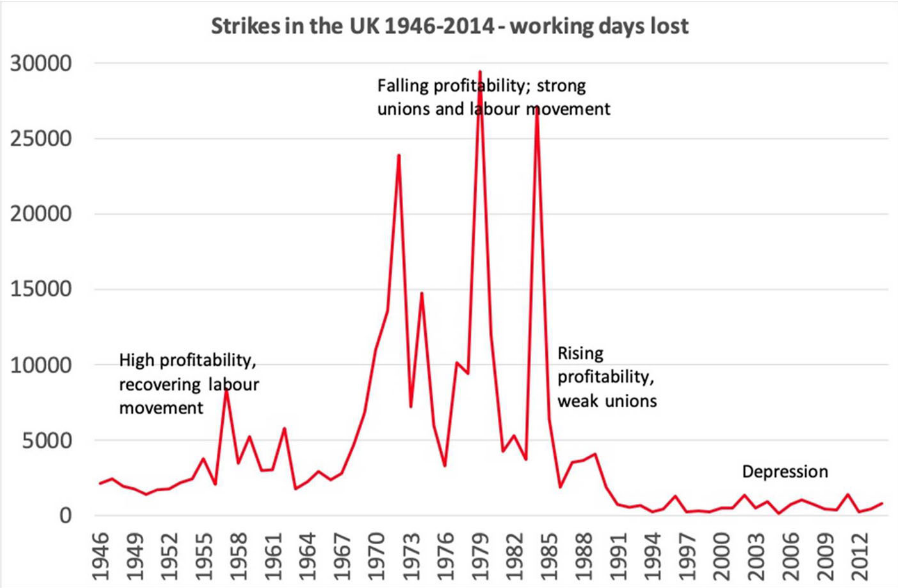


**Fig. 4** UK strikes from 1946 to 2014. S: Roberts 2018. His labels

recovered, it was not because of such popular forms of resistances, but because of other obstacles. This suggests a larger revision of the social and institutional framework.

### 4.3 Social regulation and the institutional conditions

The second hypothesis about the length of the process of socio-institutional adjustment, that emphasizing the weight of inertia of the current settings, is considered in this subsection. Inertia should be understood as a structural condition; it is the result of social negotiations, contracts and impositions. As the new agenda for the socio-institutional framework is aimed at displacing the historically most successful

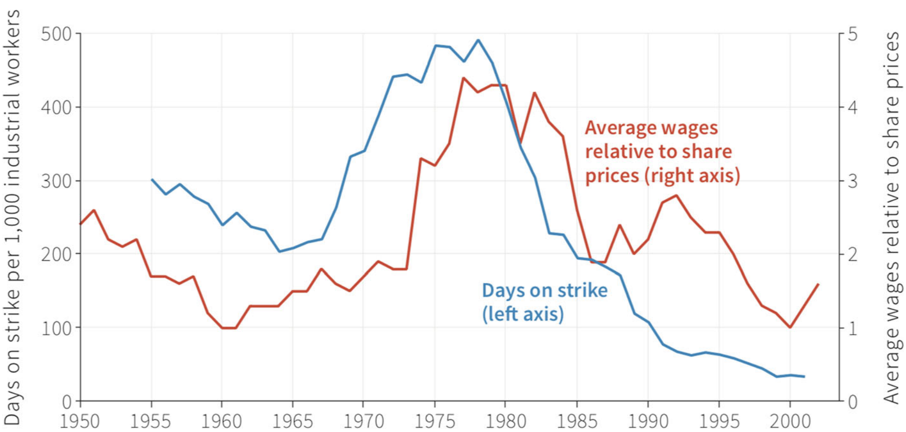


**Fig. 5** Days on strike and wages relative to share prices, for the advanced economies (1950–2002). Source: Glyn 2006

institutional setting ever created, that of the post-Second War period, it faces huge difficulties. Therefore, a long period is required for the reconfiguration of the institutions, namely through the hegemony of new ideas, providing the networks for dissemination and education, selecting the cadre and establishing their authority, generating national and international leadership in order to impose these values, personnel and power to the whole social fabric.

In the following, I will describe evidence for these processes of change, presenting some examples on how they required a long period of inception and maturation. This discussion has not been developed in most of the long wave literature, but the argument can be made that it is crucial to explain the duration and dynamics of the adjustment periods.

The next paragraphs briefly examine how the adaptation to this liberalizing movement proceeds under the impacts of these shocks, namely identifying some preconditions for the application of the liberal agenda. The first process to be mentioned is the education of cadre through schooling and networks. The second is the revolving door between business and politics and how it promoted deregulation and the command of finance. Case studies and examples are presented in order to illustrate the complex processes at work.

### 4.3.1 Education and selection of cadre

Education, recruitment, reproduction and persuasion play a major role in the formation of the ruling elites and require generational transformations. As noted through this section, long-term changes in universities, special programs for attracting foreign students to the US, who then would become decision makers, hiring strategies for essential institutions (central bank, government) creating invisible colleges, plus adaptation to membership of international fora (World Bank, IMF, private banks) and to external legitimation (by OECD and other institutions), were crucial to change economic thinking and policy making in different countries.

**Teaching** The careers of three Nobel Prize winners in Economics, Friedrich Hayek, Milton Friedman and James Buchanan, as well as the role of their Mont Pelerin Society in the generation of the neoliberal wave have been recently discussed in detail (Mirowski and Plehwe 2009; Burgin 2012; Ban 2016). Although marginal for the first decades of its existence, this network of economists came since the mid 1970s to dominate important academic departments and, in Chile, to shape the economic strategy of the Pinochet dictatorship (with Hayek, Friedman and Buchanan); soon after, it informed the economic strategies of Thatcher (Hayek) and Reagan (Friedman). But the most decisive contribution of the Mont Pelerin network to the neoliberal era was to prepare a large number of students to fill vacancies in universities, in the central banks and governments, and in other official institutions.

The case of Latin America is a telling example. A program of teaching and networking was developed since the 1950s under the guidance of some US universities, achieving a decisive influence by the late 1970s in several countries. Arnold Harberger, from Chicago, was the dominant constructor, namely in Chile, where the program was successful and the "Chicago boys" held power, and in Argentina, where it was a failure. Harberger claimed that his courses trained more than 300 Latin American economists, and the count would include the former presidents of Panama and El Salvador, more than 45 cabinet ministers, and more than 15 heads of central banks, including those of Chile, Costa Rica and Argentina, as well as of Israel (Levy 1999; Fourcade 2009; Harms 2014).

The same path can be detected in other countries. In the case of Mexico, the instrumental institution for the neoliberal education was the central bank and the faculty it promoted from the 1970s and 1980s. Babb, who wrote one of the most complete appraisals of these changes, summarizes the Mexican story: "From a historical perspective, the Banco (of Mexico) was the government organization most responsible for the Americanization of Mexican economics. The central bank was responsible for Mexico's first foreign scholarship program for economists and played a role in the founding of economics at the ITM (later ITAM, Instituto Tecnologico Autonomo de Mexico) and the Colégio de Mexico and the renovation of economics at the University of Nuevo Léon. Furthermore, Bank of Mexico officials were instrumental in the remaking of ITAM economics into a much more Americanized program oriented toward sending students to postgraduate studies in the United States" (Babb ibid., 126, 189). As with the Bank of Mexico, the central banks of Argentina and Colombia constituted the anchor institution for the neoliberal turn in these countries (Pastore 1989; Urrutia 1994).

This intimate connection between the central banks as guardians of orthodoxy and faculties of economics reproducing the canon was crucial for the education of new generations of future policy makers. In took several decades to construct the new programs, to educate disciples and to elevate their careers to the apex of the institutions, although without them it would not be even possible to formulate the radical new politics.

**Networking** If the selection of cadre begins at school, their promotion to ruling functions is pivotal for the reproduction of the ideas and decisions favoring liberalization. As experience proves, the process of displacement of old ideas and pals is long, in particular in countries where the dominant views were opposed to the liberal agenda.

One of the successful reproduction strategies is networking. Take the example of the decisions of the IMF on adjustment programs, which have been crucial for different economies in Africa or Latin America, or more recently in southern Europe. A scholar perused the connections among three hundred IMF staff members and 1173 officials of 44 developing countries, including chiefs of government, ministers of finance and heads of central banks, from 1969 to 1998. The author then checked in detail 143 loans to 29 developing countries for the period 1975–1998, to conclude in both cases that better loans went to governments with officials sharing the professional training with IMF staff: "The results provide evidence that the staff provide favorable treatment to government officials with similar professional characteristics," namely education in US and UK economic faculties, and or course "countries where there is significant exposure to US commercial banks receive more generous loans" (Chwieroth 2013, 287). Another inquiry on 486 loans by the IMF during the period from 1980 to 2000 proved that, when the local policymakers are neoliberal, the IMF adjustment program is more generous and requires lighter enforcement – this is again evidence of "playing favorites" (Nelson 2014, 486).

The case of the Mexican mandarins is another telling example of networking, also proving the effect of the Americanization of the teaching of economics. When Carlos Salinas de Gortiari, the president for 1988–1994, took office after a major debt crisis, he challenged the longstanding developmentalist views of his vetust nationalist party, the PRI, which had dominated Mexico for 60 years, and delivered a radical neoliberal agenda. Although Salinas was a graduate from UNAM, which long held the torch for developmentalism in Mexican economics, then he got a PhD from Harvard University (1978), and, as he took power, selected many US graduates for his administration. His finance minister was Pedro Aspe (PhD at MIT, 1978), the minister of commerce was Jaime Serra Puche (PhD at Yale, 1979), the NAFTA's chief negotiator was Herminio Mendoza (PhD at Chicago, 1978), and the minister of budget was Ernesto Zedillo (PhD at Yale, 1981, then Salinas's successor as president). The combination of international finance pressures through the debt crisis and the rise of US trained technocrats in government created the map for the neoliberal reforms (Santiso 2004, 33; Babb 2001, 83, 171 f.).

This was a triumph. The Salinas privatization program reshaped Mexico: it included airlines, chemical and steel industries, national insurance companies and banks, television, radio and telephone, the communications system. Salinas also destroyed the rules of sharing community land, liberalizing land markets for sale or rental, radically unsettling peasant and indigenous communities. Then in 1992 he signed the NAFTA agreement with US and Canada, assuring free movement of goods and capital. NAFTA reconfigured Mexican industry with the intensification of "maquiladoras", border factories for intensive use of labor for finishing products. The beneficiaries of NAFTA included Carlos Slim, whose adroit purchase of communications launched his fortune, which compares to 6% of Mexico's GDP (Rockefeller's wealth, in his best years, reached only 2% of US GDP, and Bill Gates less than 0.5%) (Freeland 2014; Camp ibid).

The example of Salinas in Mexico was mirrored by other ascendancies of neoliberal dignitaries to power in other countries, such as Fernando Henrique Cardoso in Brazil in the late 1990s or Mauricio Macri in Argentina in the 2010s, even if all leading to fragile coalitions.

### 4.3.2 Ideas and power

The second process to be described in this section, which is also a result of that of education and selection of cadre, is social promotion connecting business and politics. Goldman Sachs (GS) is the best-documented example of the efficiency of the revolving door, as the firm regularly recruits distinguished politicians and happily lends its staff to public endeavors. The voluminous list of the GS administration includes, among others, two past presidents of the European Commission, a former director-general of the World Trade Organization and a president of the World Bank,

European commissioners, four former prime-ministers, and three of the last eight Secretaries of Treasury of the US.

For the purpose of this paper, the career of Alan Greenspan is eventually the most defining recent case of the revolving door. He began his career at Townsend-

Greenspan, a consulting firm, then he was the chair of the Council of Economic Advisers under Gerald Ford in 1977, and later adviser to President Reagan. Prior to his appointment as Fed Chair by Reagan in 1987, most of Greenspan's time was dedicated to serving private firms, including the Aluminum Corporation of America, Automatic Data Processing, General Foods, J.P. Morgan, Morgan Guaranty Trust, and Mobil. Appointed to the Fed, he served as Chair for 19 years under several presidents and gaining unparalleled power. He managed the Fed through significant crashes, the Savings and Loan scandal, the 1987 stock market crash, the 1997–8 crashes in Russia, Asia, and Mexico, and the 2000 burst of the dot-com bubble. After stepping down in late 2005, Greenspan took a job as consultant at Pimco, the largest player in the world bond market. A consistent man, he fought for deregulation for his entire professional life, and in his practice he fine-tuned the liberal approach to financial markets.

Greenspan's argument for deregulation, reproducing his professional experience and ideological inclination, was that the market is wiser than public regulation: "In the essence, prudential regulation is supplied by the market through counterparty evaluation and monitoring rather than by authorities (...). Private regulation generally has proved far better at constraining excessive risk taking than has government regulation" (Greenspan 2005). Although he did not invent the process of liberalization, Greenspan, in his long tenure at the Fed and as the most powerful of all the central bankers, developed the theory and practice of self-regulation, fought those challenging it, and imposed laws and norms that would directly lead to the collapse of the subprime, something he lately accepted at a Congress hearing, saying that "it turned out to be much broader than anything I could have imagined", as a "once-in-a-century credit tsunami." Asked if he had been wrong on deregulation, he famously stated "I discovered a flaw in the model that I perceived is the critical functioning structure that defines how the world works. I had been going for 40 years with considerable evidence that it was working exceptionally well." US treasury secretary Henry Paulson, another Goldman Sachs man, also self-criticized his failure to anticipate the collapse in the US mortgage industry, "I could have seen the sub-prime crisis coming earlier", before adding the utterly shocking, "I'm not saying I would have done anything differently" (*The Guardian* 24 October 2008). The reason why Greenspan, Paulson and others could not anticipate the crash was because they imagined their deregulation agenda would make the market efficient. They were successful, not because the market is efficient, but because this social machinery was imposed. This celebration of liberal markets required power and staff to dismantle the regulations, as it demanded social acceptance for proceeding and, for that, a patient education in what these mentors called "good economics", in Harberger's parlance. Their education, professional career, and their institutional environment promoted a world view that could only conceive of perfect markets.

Another dimension of the revolving door is the direct connection and representation of social interests. Evidence is the direct involvement of political ruling families in business: firms representing no less than 8% of the total world market capitalization in 2003 were run by relatives of their countries' political leaders (Faccio 2006). This is true in particular in cases of recent reconfiguration of capital ownership. In China, no less than 103 descendants of the "eight immortals" of the Mao Zedong era held ruling positions in state-owned firms.[3] Three of them run firms with combined assets

[3] The eight were Deng Xiaoping, Wang Zhen, Chen Yun, Li Xiannian, Peng Zhen, Song Renqiong, Yang Shangkun, and Bo Yibo.

amounting to one fifth of the Chinese economy (Oster 2012). For instance, in the giant firm Dalian Wanda, operating in real estate – it owns properties in Beverly Hills, the AMC Theatres, and 20% of the Spanish football club Atletico Madrid – stakes are reserved for the elder sister of current President Xi Jinping and the daughter of former prime-minister Wen Jiabao.

In many other countries, the public authorities provide contracts or create oligopolies that are decisive for the accumulation of capital. For India, the list of billionaires typically includes persons operating in rent seeking sectors, such as real estate, construction, cement, media, infrastructure and mining, as in the case of Mukesh Ambani, the richest person in the country. Other cases of politically connected billionaires are conspicuous in the list of world fortunes: in Nigeria, Folorunsho Alakija got her fortune from the oil license; Carlos Slim, as previously indicated, got his fortune from politically motivated privatizations in Mexico. These contracts and concessions generate new entrants in the bourgeoisie, as entrepreneurs are favored by political power and eventually sheltered by their governments from competition in the home market, tending to benefit from the new techno-economic opportunities. Those would be the cases of Terry Gou of Foxxconn, Taiwan's largest exporter, with one million employees; of Zhou Qunfei, the world richest self-made woman, who owns Lens Technology; the owners of the two internet giants, Alibaba and Baidu; or of the largest drug maker from India, Dilip Shanghvi (Freund and Oliver 2016).

The revolving door mobilizes public resources and the power of the State to abet private accumulation. That also explains the time that is required for the operation. A case study is that of Russia, in particular when then President Yeltsin initiated a first phase of mass privatization. From 1992 to 1994, the ownership of 70% of medium and large-sized public enterprises was transferred, ostensibly through the issue of vouchers to the general population but which were rapidly accumulated by the wealthiest. From 1994 to 1997, the government borrowed heavily from banks, offering the ownership of large firms as collateral, in what came to be known as the loans-for-shares agreements. In practice, this meant that a handful of oligarchs were selected to manage the firms involved in mineral extraction and export. Large international banks financed this process, such as Deutsche Bank. By comparing the voucher auction prices of the first phase of privatization (1993–4) with the stock market prices for the same firms in August 1997, the dimension of this embezzlement can be assessed: Gazprom, the largest gas producer and distributor, increased in value by a factor of 162, to US $40.483 billion; United Energy Services, a provider of electricity, increased its value 19 times; Lukoil, Yukos and Surgutneftegas, oil producers, respectively increased their value 22, 18 and 84 times (Klebnikov 2002).

This form of primitive accumulation is one instance of the processes of concentration of capital by direct political intervention. It is not an unprecedented form of action, but there are two peculiarities which are relevant to this discussion: first, privatization waves are a mold for the concentration of power and fortunes; second, the information and communication sectors open new windows of opportunity for the emergence of dominant firms. Again, these processes require a long period to be established.

### 4.4 The fragility of international hierarchy

As this paper discusses the socio-institutional adaptation in the downswing, a brief reference to the challenges to the international order is adequate, since changes in leadership are a feature of these transitions.

Unlike the previous long wave downturn, in the decades immediately following the turning point of the 1970s democracy in Europe broadened, with the fall of the dictatorships in Portugal, Spain and Greece. This process then extended to Latin America with the end of the military regimes of Brazil, Argentina, Chile, Paraguay and Nicaragua, and to Africa with the final wave of independence of the Portuguese colonies and the end of apartheid in South Africa. As a consequence, popular claims for social rights and for the extension of welfare were amplified through the final years of the uspwing and the initial years of the new downswing. But since the 1980s and 1990s a long-term counter-offensive was put into motion through privatizations, liberalization, the management of debt crises, restrictive monetary policies, austerity, and recently populism and xenophobia.

The socio-institutional system is being shaped by these conflicts. Indeed, this long transition, including the degradation of international leadership, plus the modification of the processes of accumulation as set by financialization, creates a peculiar selection of forms of power, challenging regimes that were established in the aftermath of the Second War and favoring a wave of populist governments, from the US to Brazil and India. On the other hand, after a brief flirtation with democracy, the cracked-up remnants of the Eastern European state-authoritarian model settled rapidly into a capitalistic oligarchy. East Asia, beginning with China and including Taiwan, South Korea and Vietnam, has continued rapid growth, that was initiated and cultivated by strongly *dirigiste* policies, leading to an extraordinary concentration of wealth.

In the last decade, the reconfiguration of political regimes is also marked by the ascendance of populist governments in the US, United Kingdom, Hungary, Poland, Slovakia, Czech Republic and Austria, militarist governments in Egypt and the Philippines, coups in Paraguay, Bolivia and Brazil, this leading to the election of Bolsonaro, the electoral fraud in Honduras, civil confrontation in Venezuela, repression in Turkey and ethnic cleansing in Myanmar, Israel, and Iraq, wars in Yemen, Syria and Palestine. The capriciousness and instability of world leadership and hierarchy is aggravated, particularly as Trump promotes a trade war and weaponizes the system of international payments, China emerges as a major player, and European Union suffers the vulnerability of the euro and Brexit. The dispute for hegemony in international affairs is also part of the tormented process of globalization, as liberalization undermines the conditions of social hegemony that prevailed in the after War period. Instability and the democratic void lead to further dangers of degradation of social rights, aggravated by increased inequality across the globe.

## 5 Conclusion: new systemic crises as the form of adjustment

The socio-institutional agenda for a new long term expansion requires four radical conditions: the liberalization of financial flows, privatization of public goods, general precarization of work, or low wages for qualified labor, and globalization of markets.

Indeed, what is necessary for this agenda is not a recovery of aggregate demand, which is indeed opposed to the needs of capital given its distributive effects, but a social victory for the rulers, imposed as the reestablishment of a convenient rate of profit, in particular through generous financial rents. Such social mutation requires a new sort of social organization and might. This is being vigorously pursued, requiring a deeper change of the capital-labor relation as well. In the past that relation was designed in the developed economies to establish low wages of unskilled workers as a form of coercion (first and second long waves), whereas currently it is designed to impose precariousness of skilled workers as a form of hegemony (phase B of the fourth long wave). The concentration of international organizations, namely IMF and OCDE, in proposals of labor contract flexibilization, is part of this trend. This also requires an alteration of social rules, restricting the provision of public goods and therefore changing the functioning of the States.

In the paper, the socio-institutional conditions for this adaptation are discussed and illustrated with examples from long term changes in education and ideology, namely the establishment of networks and selection of cadre, and in the synthesis of business interests and political figures. These processes take decades and are more difficult than in the past, given the consolidation of institutions in the post-Second War framework and the successful routines they established. This is why the emergence of shadow finance and the dominance of accumulation through rents may correspond to the construction of authoritarian populist regimes, in order to erode the welfare forms of social distribution. As a consequence, this leads to two forms of instability. One is the accumulation based on the reproduction of financial capital. The supremacy of finance generates specific forms of booms, necessarily leading to abrupt devaluation. The subprime collapse and the stock market crash of march 2020 are expressions of such devaluation, and new systemic crises are possible. The other is social and political instability, namely given increasing inequality.

In *As Time Goes By*, we cite a dictum by Walter Inge, the Dean of St. Paul who, in 1229, presented his version of the Genesis as Eve telling Adam, as they were expelled from Paradise, “my dear, we live in the age of transition”. Indeed, we do. But time does not flow linearly to a destiny and this is why the fundamental things apply: the secret of the event, as always, is social choice.

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