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Attributes and Trends of Rentified Capitalism

Giovanni Dosi[1] · Lucrezia Fanti[2] · Maria Enrica Virgillito[1]

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Abstract

What is rentified capitalism? And, how can we characterise its unfolding into the socio-economic sphere? This paper theoretically and empirically defines attributes and trends of rentified capitalism, that we shall argue, it is more than a stage of capitalism, but it rather represents a new socio-economic paradigm characterised by the primacy of rent accumulation. The functioning of rentified capitalism is based on three mechanisms, namely, *appropriation*, *exclusion* and *commodification*. From income distribution, to financialization, from housing to intellectual property rights, the definition of the ownership structure is nowadays progressively favouring the power of rentiers in the production and redistribution spheres, as such jeopardizing the very capacity of capitalism as a system able to generate new economic value and a social and equitable prosperity.

Keywords Rents · Political economy · Modern capitalism · Accumulation regime · Power asymmetry

JEL Classification P1 · O11

This work elaborates upon some of the topics discussed by Giovanni Dosi during his keynote presentation of the book *The Foundations of Complex Evolving Economies* (Dosi, 2023) at the 64th Annual Scientific Meeting of the Italian Economic Association (L'Aquila, 19–21 October 2023).

✉ Maria Enrica Virgillito
m.virgillito@santannapisa.it

Giovanni Dosi
g.dosi@santannapisa.it

Lucrezia Fanti
lucrezia.fanti@unicatt.it

[1] Institute of Economics, Scuola Superiore Sant'Anna, Piazza Martiri della Libertà 33, 56127 Pisa, Italy

[2] Department of Economic Policy, Università Cattolica del Sacro Cuore, Via Lodovico Necchi 5, 20123 Milan, Italy

1 Understanding Rentified Capitalism

The current phase of capitalism has been defined in many alternative ways, including techno-capitalism, turbo-capitalism, unbridled capitalism, unleashed capitalism, managerial capitalism, surveillance capitalism.

In this paper, meant to contribute to the literature on the political economy of modern capitalism, we suggest the notion of *rentified capitalism*, defined as a configuration of capitalism based on the progressive rentification of the socio-economic fabric, acting via three mechanisms: *appropriation*, *exclusion* and *commodification*. Delving into a classical political economy distinction of rents alternatively seen from a distributive versus a market-exchange perspective, we ask the following questions: are rents simply a form of functional income source or, rather, a process of redefinition of property rights allowing for distopic patterns of resource accumulation? What are the attributes and trends of a rentified capitalism? How can we distinguish the realms of the process of rentification? How can we measure the degree of rentification of an economy? In order to address the latter questions we identify some distinctive realms and spaces of rentified capitalism e.g., resource distribution, financialization also of previously non-market domains including the welfare state, housing and IPRs monopoly power.

We analyse countries characterised by different social and economic architectures, namely, the US, Germany, and Italy as representative of a variety of capitalisms, and we identify distinct but generalised trends in terms of rentification of capitalism. Our analysis specifically refers to advanced countries. However, the mechanisms at stake occur in developing countries as well, and at an accelerated speed. In that, the implication for developing countries are even harsher. In fact, many of them have missed the minimum benefits and opportunities associated with *productive* capitalism, and have instead mostly suffered the consequences of *rentified* capitalism. This applies to the case of rentification in terms of exclusion from, what we define in the following as, *decent rights*. Dispossession from natural resources, extractivism and capitalist colonialism represent realms of investigation which coherently fit into the notion of rentified capitalism and its implication for the Global South.[1] Given the pervasiveness of the phenomenon, and the lack of comprehensive theoretical underpinnings, we conclude on the urgency of a new analytical thinking advancing on the understanding of the causes and consequences of rentified capitalism. Fundamentally, we contribute to the construction of a new political economy able to integrate power asymmetries, redefinition of property rights and use of markets, especially financial ones, for resource accumulation. If capitalism has been so far understood as the socio-economic system able to grant growth, today it is rather becoming an engine of rents creation and rights dispossession.

This paper is organised as follows: in Sect. 2 we discuss the process of rentification, while in Sect. 3 we present how various instantiation of rentified capitalism can be measured. In Sect. 4 we lay out our conclusions.

[1] The focus on developed countries is due to data availability, as the Macrohistory database, employed in the following, provides information only for developed economies.

2 Rents in Economics

Let us start by presenting two alternative perspectives on rents put forward by Classical Political Economy, on the one hand, and by Marginalist/Neoclassical Economics, on the other hand. We shall refer to the distinction by Wessel (1967), who clearly traces the boundaries of the two approaches. In a distributive perspective, rents in Classical Political Economy, following Ricardo, are the remuneration of fixed assets of production such as lands and natural resources. They are valued because of their scarcity deriving from an inelastic supply:

> Economic rent is defined by the followers of Ricardo as the excess amount earned by a factor over the sum necessary to induce it to do its work (Wessel 1967, p. 1222)

We define this as a distributive analysis because it inherently looks at the subjects defining the factors that are able to appropriate rents, that are, the owners of non reproducible, scarce assets. The marginalist approach embraces instead a market-exchange analysis: rents, in marginalist theory, are the surplus over opportunity-costs, deriving from non-competitive market settings. They represent therefore a deviation from competitive equilibrium conditions, that give rise to acquisition of profits because of distortions to competitive settings.

> The Paretian rent concept is the excess earning over the amount necessary to keep the factor in its present occupation. (Wessel 1967, p. 1222)

If rents are the result of uncompetitive settings, they are not actually framed as derivation from an unfair distribution of property rights, but rather as an inefficient allocation of market resources because of some forms of monopolistic conditions, often temporary and destined to vanish, and confined to imperfections. In the following, we embrace a Ricardian perspective of rents based on the unequal distribution of property rights on some actual, but also artificially created, scarce assets.

2.1 From Rents to Rentified Capitalism

Concentration and monopoly capitalism are well-known traits of capitalist development (Hilferding 1910; Sawyer 1988) as a stage of capitalism characterised by monopoly and oligopoly market structures. But, what we call the "rentification of capitalism" (Dosi and Virgillito 2019) has recently acquired new disturbing dimensions. The concept of rentification we use is much more expansive than the concept of financialization, which it encompasses. The latter properly refers to the changing balance between real and financial spheres of the economy. The former concerns the very mechanisms by which social product is generated and appropriated.

Rents have always existed—as per the "law of rent" expounded by Ricardo (1821)—but have historically been considered a parasitic tax on the process of transformation of inputs into outputs: in Ricardo's example, capitalists hire workers to plant and harvest corn, but in order to do that they have to pay some share of the value added to the

"rentiers". This is not to say that such form of rent has disappeared. On the contrary, rents related to real estates and land have recently enormously increased.

However, when capitalism becomes rentified the processes of value creation and value extraction become increasingly de-linked. The latter no longer rely on transformation, but instead on three other mechanisms, namely, exclusion, commodification of previously non-economic activities, and their appropriation. Therefore, rentified capitalism is a configuration of capitalism based on the progressive rentification of the spaces of the social fabric. Let us define the three mechanisms of rentification:

- EXCLUSION: restriction of the rights to use previously non-rentified assets
- COMMODIFICATION: pricing of previously non-market services and universal rights (health, education, justice)
- APPROPRIATION: creation of artificial scarcity by redefinition of property rights.

Exclusion works by creating fictitious value for physical and immaterial assets, stemming from limitations to access them. This is clearly the case of real estate rents. After all, an apartment in Manhattan and a house in the Bronx satisfy the same basic need; however, thanks to exclusion, their exchange values are dramatically (and increasingly) different. Exclusion concerns more generally all positional goods and services (Hirsch 1976), where the value comes from the very exclusion of other potential users (e.g. visiting the Galapagos Islands alone).

A major driver of rentification is the commodification of activities that were previously (fully or partly) outside the market domain: health and education are two major cases in point. In contemporary capitalism, appropriation, or alternatively, digital appropriation, consists in the extraction and collection of individual immaterial assets (mainly data) with the aim of monetizing them. Together with appropriation, exclusion, and increasing commodification, they today appear to make ever-higher claims on the total social product in the form of huge rents.

Progressively, concentration of property rights or ownership on "rentifiable" goods have been raised and thus the (private) appropriation spaces have enlarged and therefore the exclusion spaces. As such, rentified capitalism goes even beyond the creation of pseudo-wealth (Guzman and Stiglitz 2016) and sheer financialization (Epstein 2005), meant as an increasing penetration of financial motives and financial activities into the real economy, affecting corporations and individuals. Indeed, rentification of capitalism is inherently linked with *dispossession* from social and economic rights. Such dispossession is exerted from the rights to decent pays to rights to decent housing, rights to decent pensions, rights to decent care.

When such mechanisms are at work, rents are not simply a form of functional income source remunerating fixed assets, but alternatively, they represent a process of redefinition of property rights. Such redefinition of the mechanism of attribution and transferability of property rights allows for distopic forms of resource accumulation, exactly deriving from the processes of appropriation, exclusion and commodification above defined. The perspective that we take interprets the rentification of capitalism as a process largely occurring in both the production and redistribution of value, rather than in the market-exchange process, ultimately resting over asymmetric distribution of power among actors in the socio-economic spheres. Power, is not simply market

power, but is relational power constructed on the basis of accumulation of property rights, being them physical, but increasingly so intellectual ones.

Beyond a theoretical definition, what are the attributes and empirical trends of rentified capitalism? How can we distinguish realms and spaces under the process of rentification? How can we measure the degree of rentification of an economy? Let us try to identify the domains and mechanisms of rentified capitalism, comparing countries characterised by different social and economic architectures (the US, Germany, Italy) as representative examples of a *variety of capitalisms* comparison. We present a discussion around "focal points" which are not meant to be representative of the entire diversity across countries, but to compare countries at a similar development stage, but still differently affected from the processes at stake. The three countries are clearly not fully representative, but they allow to capture some forms of structural heterogeneity in they way in which capitalism is organised.

Table 1 synthetically offers an overview of the *spaces*, *attributes and effects* of rentified capitalism. In the next section we will discuss them in more details, presenting the empirical evidence connected to each of the different cases discussed.

3 Attributes and Trends

3.1 The Long Run Decline of Labour Power and the Upsurge of Managerial Power

Labour power has been dramatically declining since the neoliberal turn in the eighties. A convergence trend among different varieties of capitalisms has been empirically detected, including both developing and developed economies (Riccio et al. 2022). In Fig. 1, top, we show that wage compression has invested both Anglosaxon, Continental and Mediterranean capitalisms. Using data from Ameco, the dynamics of the aggregate wage share for Italy, Germany and the US presents a declining trend, particularly after the 1990s, steadily below 60%.

Declining wage shares are not only a signal of wage compression and functional inequality but also a widespread signal of the reorganization of capitalism in favour of managerial stockholder power. The rise of managerial power has been acting as a force able to push for managerial remunerations in terms of shares and stock options, up to the point that Bivens and Kandra (2022) documented a rise of almost 400 times of the CEO/average worker compensation ratio in listed companies present in the Compustat dataset (Fig. 1, bottom).[2] Such an increase represents a dramatic process of redistribution of resources on the basis of drivers that cannot be certainly ascribed to worker productivity. For sure it cannot be due to wide and growing cognitive ability: indeed, psychological theories and psychometric studies reveal that cognitive intelligence represents a strong factor of commonality across individuals (Gottfredson 2011; Deary 2001), and discrepancies of 400 times in cognitive capacity, able to mirror the difference in compensation across individuals are unimaginable.

The increase in managerial power is not only represented by managerial compensation but also by the growing role of financial incomes in the remuneration of CEOs

[2] Compustat might be affected by over representation of US listed firms.

Table 1 Understanding rentified capitalism

Spaces	Attributes	Effects	Empirical evidence
Resource distribution	Appropriation	Labour disempowering	Falling labour share
		Rent-extraction as wealth generation	Upsurge in managerial power
	Exclusion	Restructuring strategies	Profit-inflation spiral
		Anti-redistributive policies	
Finance into the Welfare state	Financialization		Exponentially growing financial assets
	Commodification	Finance as provider of welfare state services	Increasing pension funds and life insurances
Housing	Commodification	Reducing housing opportunity	Increasing financial returns from housing
	Dispossession		
IPRs and Big Pharma	Commodification	Limiting rights to care	Disproportionate patenting activity
	Exclusion		Declining breakthrough innovations

(Edmans et al. 2017). Financialization, power asymmetries and rent extraction are the only forces able to make such remuneration grow 400 times in forty years. The clash emerging from strategies meant at maximizing share-holders value vis-à-vis those meant to pursue the growth of firms is a well-known negative side effect of financialization. Whenever the objective is the stock market valuation and CEOs are paid with reference to stock market dynamics, the scope of their strategy is clearly meant to augment and extract rents from financial markets. The result of increasing financialization has been found to be strongly related with increase in functional income inequality against labour income, as the result of rent-seeking extraction and accumulation (Sawyer 2018).

3.2 A Wage-Inflation Anti-spiral: The Case of the Pandemic Crisis

The pandemic crisis was supposed to be an opportunity for the rebalancing of labour power. Indeed, right after the pandemic peak in 2020, commentators were already offering alarming considerations about the explosion of a new inflation hype due to a resurgence of labour power, mainly driven by the so-called Great Resignation (Gittleman 2022) and labour market slackness (Domash and Summers 2022). After three years, however, the signs of the Great Resignation are less visible, with the quitting rate coming back to the pre-crisis values. The surge of quits, rather than a complete rejection of bad jobs, has been more a tentative to ameliorate individual working conditions, moving to better paid jobs and career prospects. However, the phenomenon has been temporally and sectorally limited, that is restricted to the labour force more exposed to the pandemic, the so called-essential jobs. The increase in wage deriving from higher quitting did not translate in actual *real* wage growth (Stiglitz and Regmi 2023), and in general, the wage-quit elasticity has been found to be very low, particularly in most vulnerable occupations (Naidu and Carr 2022).

Although the 2023 has been acknowledged as the year of the resurgence of labour power, marked by the long Hollywood actors strike against generative AI, and by the historical three-big-US-automakers strike launched by the UAW, the evidence of a long-lasting labour power resurgence is still missing. In Fig. 2 we present the Consumer Price Index vs real wage growth in the period 2006–2022 for the US, Germany and Italy. In all three cases an evident wage-inflation anti-spiral emerges, with CPI increases strongly eroding the overall wage growth dynamics. Therefore, rather than a wage-inflation spiral, the current inflation is mostly acting in favour of corporate profits, via asymmetric price-setting monopolistic behaviour and rising mark-ups (Weber and Wasner 2023).

A misguided wisdom on a new phase of structural wage-inflation spiral is currently dominant among policy makers. A political use of monetary policy that has in fact increased the cost of indebtedness, entailing anti-redistributive policies, has been embraced. The case of a supply-driven inflation spike, due to production bottlenecks plus the energy crisis, has been and is an occasion to re-normalize a purported labour power resurgence represented by temporary higher quit rates and modest nominal wage growth, to be tamed via higher unemployment. Currently, while the cost of energy has been declining reducing total inflation, the rise in the interest rate is largely

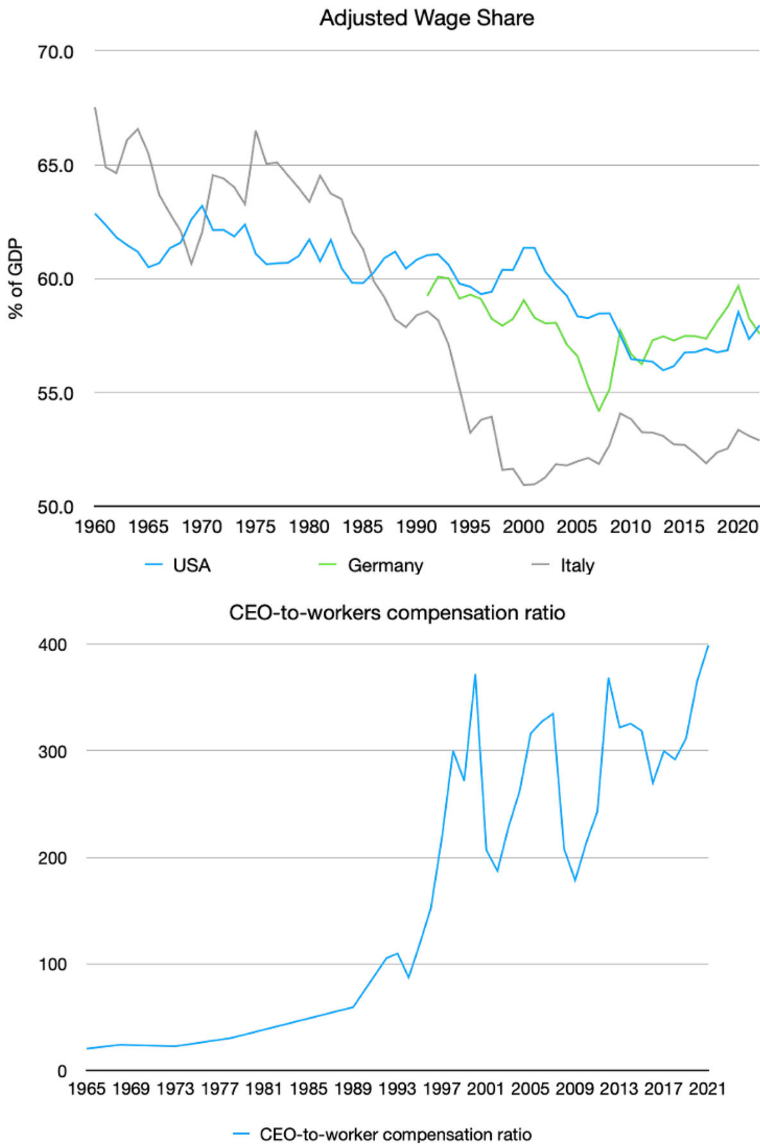


Fig. 1 Adjusted aggregate wage share. Source AMECO (top). CEO-to-workers compensation ratio (bottom). Source: Bivens and Kandra (2022)

acting as a channel to deteriorate debtors' positions, particularly consumer credit and mortgages, with core inflation permanently higher than its historical levels, before its rise in 2021 (Stiglitz and Regmi 2023).

The way in which rentification has acted in the redefinition of the balance of power between the social actors in the pandemic crisis has been inducing exclusion, in particular from decent pays and working conditions, for an increasingly larger fraction of the

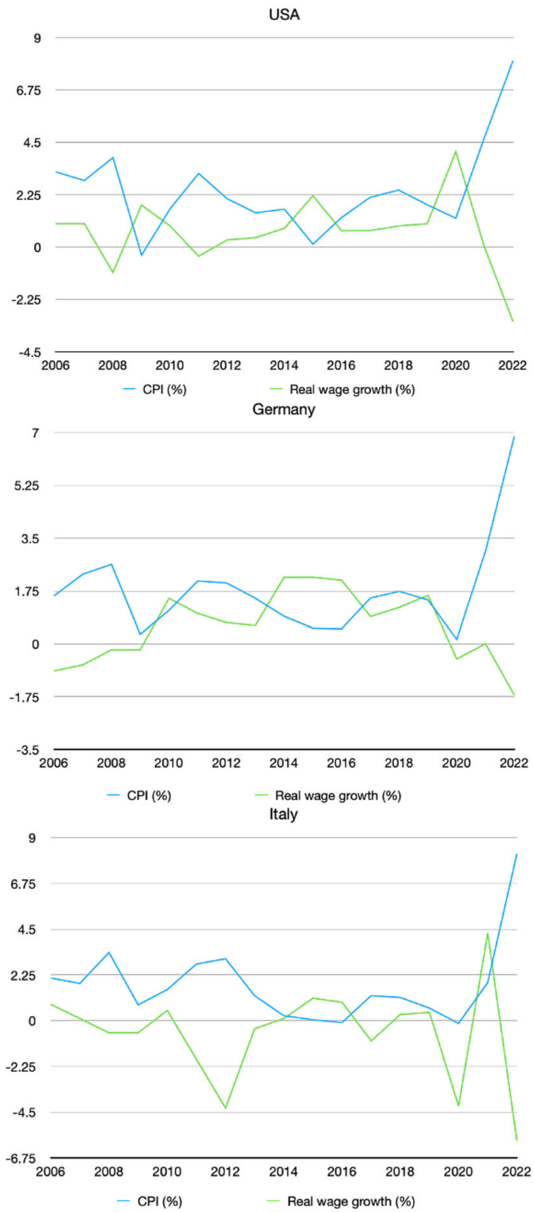


Fig. 2 Consumer Price Index vs real wage growth 2006–2022 by country. Source: OECD and ILO—Global Wage Report

labour force. In addition, via appropriation of the gains of power asymmetry, enacted via mechanisms of financialization, corporate profits have been the actual winners of the pandemic crisis (Ferguson and Storm 2023).

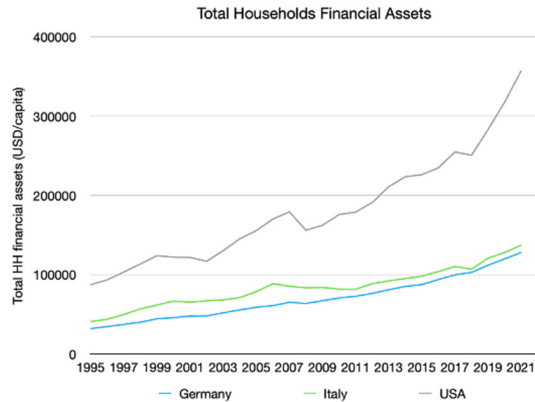


Fig. 3 Total households financial assets by country. Source: OECD data

3.3 Finance and the Welfare State

The pervasiveness of financialization is tentacular and ramified, affecting financial and non-financial corporations, and supporting therefore forms of managerial/stockholder capitalism. The tendency is strikingly revealed also by the secular explosion of stock market values well faster than the growth of GDP.[3] Financialization however extends nowadays even toward individual, everyday life (Van der Zwan 2014), representing therefore not only a form of income source, but also a way to rearticulate the fulfilment of basic needs. Figure 3 presents total household financial assets by country. Although the three countries show different levels, with the US clearly emerging as the most financially oriented country, the rates of growth are remarkably growing in a relatively short time horizon, from 1995 to 2021. Notably, neither the 2008 financial crisis nor the COVID-19 crisis represent actual turning points for what has been defined a new accumulation regime (Boyer 2000).

Empirical stylized facts on financialization mostly refer to debt-driven consumption expenditure, sluggish investments, exchange rates volatility and massive capital flows, moderate and volatile growth (Stockhammer 2008). However, less attention has been devoted to financial assets as a source of individual income generation. In addition, the relationship between financialization and the welfare state has somewhat been less analysed, together with the composition of aggregate household investments. In Fig. 4, in line with the variety of capitalisms view, we present the diverse composition of household investments, as three different forms of rentified capitalism. They range from "tamed" German capitalism where the majority of financial investments are directed towards currency and deposits, to unbridled US capitalism, where shares and pension funds represent the lion share of household investments.

The increasing role assumed by investments into pension funds and life insurances in the US, but in Italy as well, is a clear evidence that domains previously managed by the welfare state, at least in European societies, are progressively becoming spaces of financialization. In this respect, finance becomes even a substitute of the welfare state,

[3] https://www.nytimes.com/2023/12/30/business/dealbook/inflation-economy-stocks-year-in-charts.html.

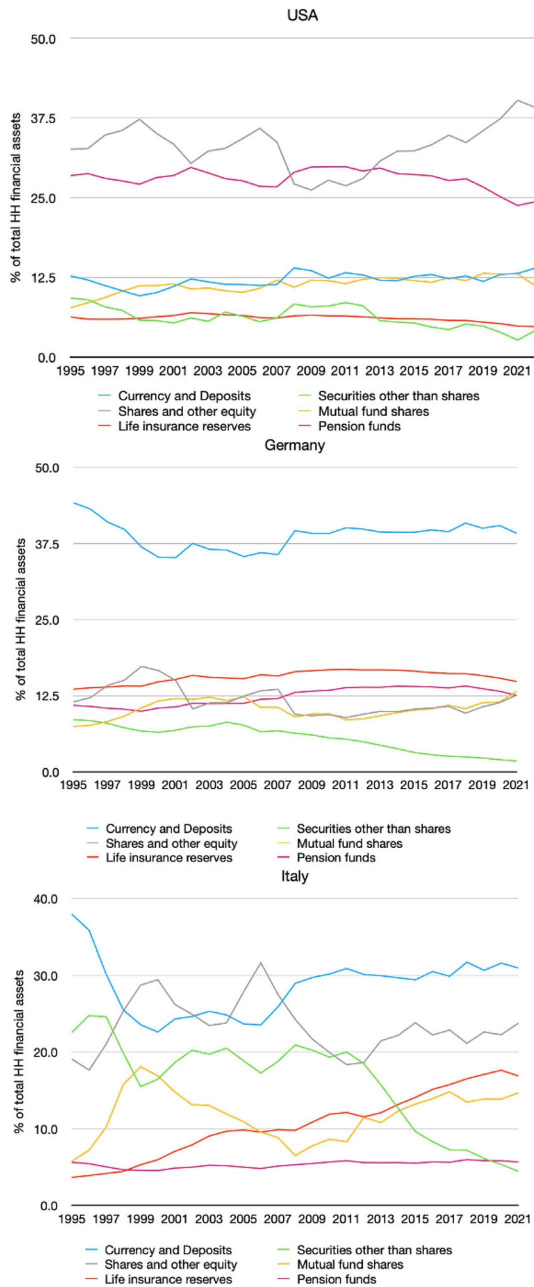


Fig. 4 Composition of households financial asset by country. Source: OECD data

provider of pension funds and life insurances. This process is a clear example of the mechanism of commodification of rights into economic services/goods, as discussed above. Notably, here we observe the phenomenon not from the perspective of the financing or the destination of public expenditure, but, alternatively, of the increasing relevance of welfare provisions and services, previously provided by states, in financial portfolios. In particular, pension funds have increased their investments in private equities (Mittal 2022). In turn, private equities are valued for their capacity to maximize shareholder values, often undertaking layoffs, wage dumping and labour restructuring inside acquired companies (Davis et al. 2021). The *pension funds–private equities–labour nexus* results into a short circuit of workers "firing" other workers, essentially via Wall Street.[4] This is a clear by-product of the financialization of non financial activities which brings to rent accumulation.

The above attributes represent a manifestation of the process of rentification, acting via commodification of decent pension and care rights, transformed into commodified and volatile outcomes. Together, rentification acts via exclusion from decent labour rights, as the right to maintain economic security and wage stability, above all under a process of firm restructuring operated by a private equity fund. Notably, the actors in the arena of rentified capitalism assume multifaceted configurations and roles, turning therefore from being the financial investors of worker pensions, into an autonomous actor, in favour of whose financial interests other workers are fired, or subject to wage compression.

3.4 Housing

Although in the mainstream literature housing price is still believed to be mostly related to the user cost of capital, usually proxied by the mortgage interest rate, new evidence is casting doubt on the arbitrage theory. Particularly after the financial crisis, the role of credit constraints (Mian et al. 2013) and the loan-to-value ratio, the latter a proxy for the shadow price of credit rationing, have been found to be co-integrated with the price-to-rent ratio (Duca et al. 2016). Beyond the user cost of capital, other factors, primarily scarcity in land use, the interaction between debtor balance sheets and creditor lending practices, together with country specific institutional characteristics, should be taken into consideration to explain housing prices dynamics (Duca et al. 2021). Housing represents per se an industry hugely propagating forms of financial accelerations (Delli Gatti et al. 2010). Indeed, skyrocketing city housing prices, after the pandemic crisis, are becoming one of the most relevant reason of exclusion from the right to decent housing, as a result of the combination of predatory lending practices, connected to app-based short-stay rents (Barron et al. 2021), and the lack of stringent regulatory policies in the rent markets.

In addition, contrary to the predictions of arbitrage theory, even if the user cost of capital has increased because of higher interest rates on mortgages, due to monetary policy tightening, the price-to-rent ratio has not actually decreased, because of endogenous house pricing increases due to market-expectations and processes of gen-

[4] For more information see: https://prospect.org/labor/2023-10-04-workers-funding-misery-private-equity-pension-funds/.

trification. Indeed, rather than substitutability between home ownership and renting, as assumed by the user cost of capital approach, empirical research detects complementarity, with higher rental costs affecting housing prices (Li et al. 2022). Such processes have enormously impacted rent accumulation in the housing market.

To measure such accumulation, employing the *Macrohistory database* by Jordà et al. (2017), in Fig. 5 we present the cumulative sum of the rate of returns of four different forms of rent remuneration, namely returns from equities, housing, bonds and bills. One of the advantages of this dataset (whose employed variables are defined in the Appendix) is the long run, comparative dimension. The evidence shows a growing trend over time of the rates of return in all three countries, but with a variety of capitalisms influence and the emergence of country specificities in the type of leading asset returns, in particular bond vs housing. Indeed, home ownership becomes progressively an increasing source of income generation, with an exploding role of housing returns in all three countries. However, Germany remains more tamed in its rentification when compared to the US, with rents from bonds still prevailing over rents from home ownership, while the US records the highest equity and home rates of return. At the opposite, Italy shows a quite strong and pervasive rentification via housing returns, but lower appreciation of equities.

In order to have a comparative picture of the role of rents from housing among the three countries, in Fig. 6 (top) we specifically focus on home rents. We detect a clear phase of comovement across country housing markets, signalling housing cycles, in the last decade, while previous phases are both characterised by periods of comovement (e.g., between the end of the seventies and the beginning of the eighties) but also anti-comovement (e.g., in the mid of the nineties). The emergence of medium-run housing cycles coupled with the increasing returns deriving from housing represents a useful proxy for the role of home ownership as a form of creation of exclusive rights to access to a basic good, progressively becoming a positional one.

In Fig. 6, bottom, we make an *r-g* comparison between the rate of return from housing vis-à-vis the rate of growth of GDP. The evidence, rather than showing any *capitalism contradiction* as in Piketty (2014), is in our view basically a useful comparative measure between real and housing cycles, and their rates of return. It informs about the dynamic growth of rentier assets vis-à-vis productive economic activity. Whenever bars are positive, $r_t > g_t$, and viceversa. The graph shows a prevalence of returns on housing higher than GDP growth in the majority of years (positive bars), distinct across countries in terms of intensity. The last decade has seen persistent excess of housing returns in all three countries, in line with the above synchronization of the housing cycles, signalling patterns of harmonization in the financial sphere across capitalisms, historically marked by profound differences. Finally, after a short period of declining prices of city housing in favour of suburb housing at the peak of the remote working shift (Gupta et al. 2022), since the end of the pandemic crisis a new ascending phase of housing returns is exploding.

Accumulation of rents from housing applies to all three cases, although the home ownership structure is quite differentiated, as shown in Fig. 7 where the household asset composition is presented. With the exception of the US, both Italy and Germany present a higher share of household assets in home ownership, primary and secondary. A more diffused ownership structure might indeed guarantee that income from value

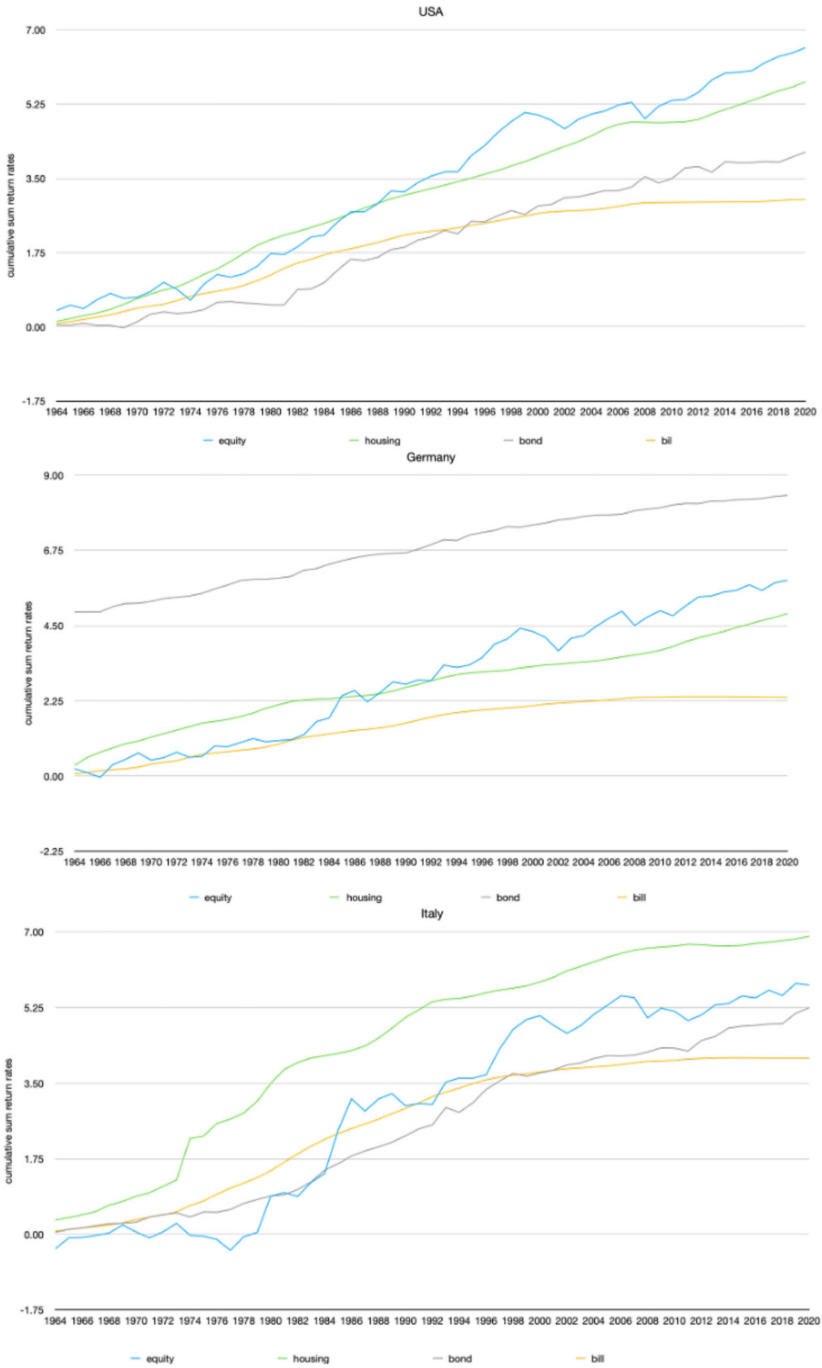


Fig. 5 Cumulative (annual) sum of rates of returns (1963–2020) by type of asset: equities, housing, bonds, bills. Source: Jordà et al. (2017) Macrohistory Database, 6th release

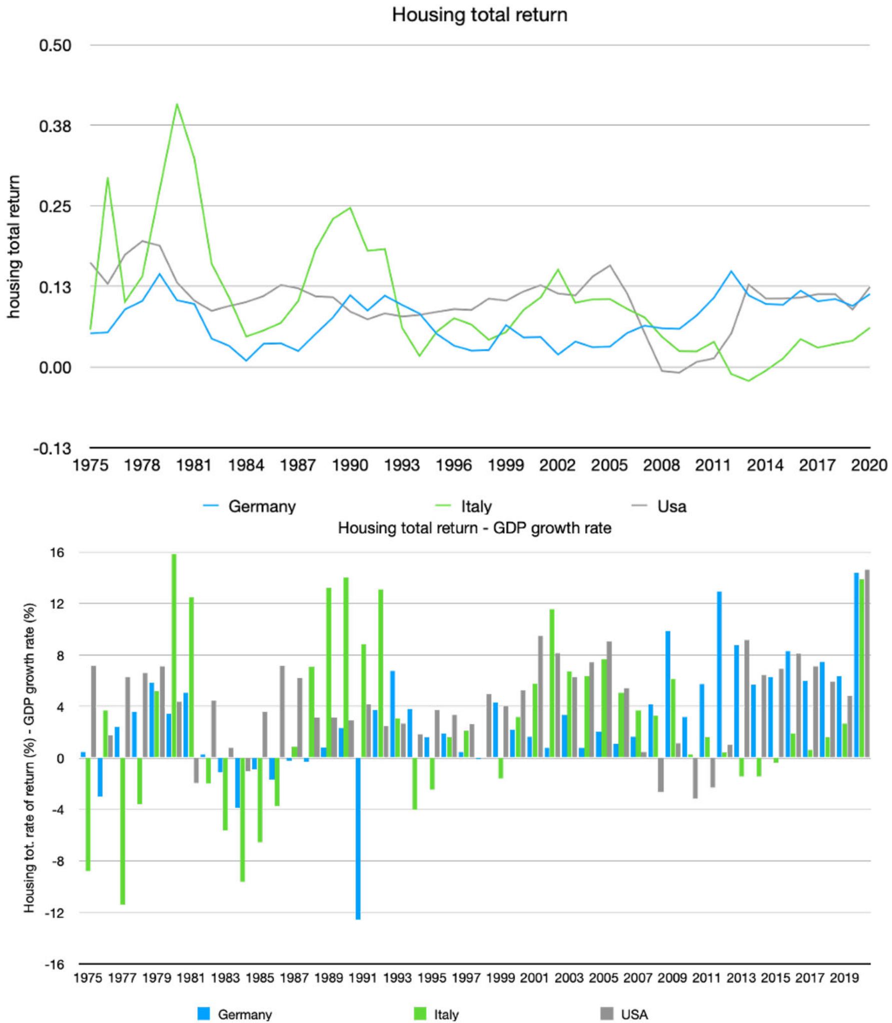


Fig. 6 Housing total rate of returns (top). Housing total rate of return minus nominal GDP growth rate by country (bottom). Source: Jordà et al. (2017) Macrohistory Database, 6th release

of housing is allotted to a larger fraction of households. And indeed, a diffuse housing ownership in the case of Italy has been so far one of the mechanisms transmitting wealth across generations. However, in the last twenty years, the transmission of wealth between cohorts via home ownership is progressively reduced, while new generations are loosing the possibility to buy a house for the restricted employment opportunities they face. Within cohorts, those inheriting home ownership mostly belong to the upper class (Gritti and Cutuli 2021). In addition, with the reconfiguration of the industry, due to the penetration of platform-based services allowing for short-term rents, a diffused ownership structure is progressively loosing the capacity to equilibrate wealth distribution and act as an equality enhancing mechanism. This is due to the progres-

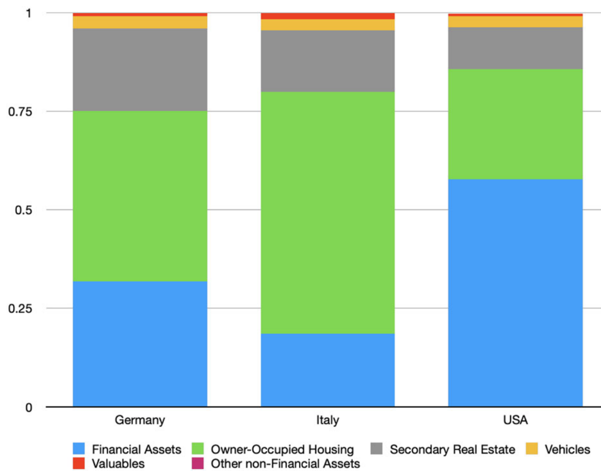


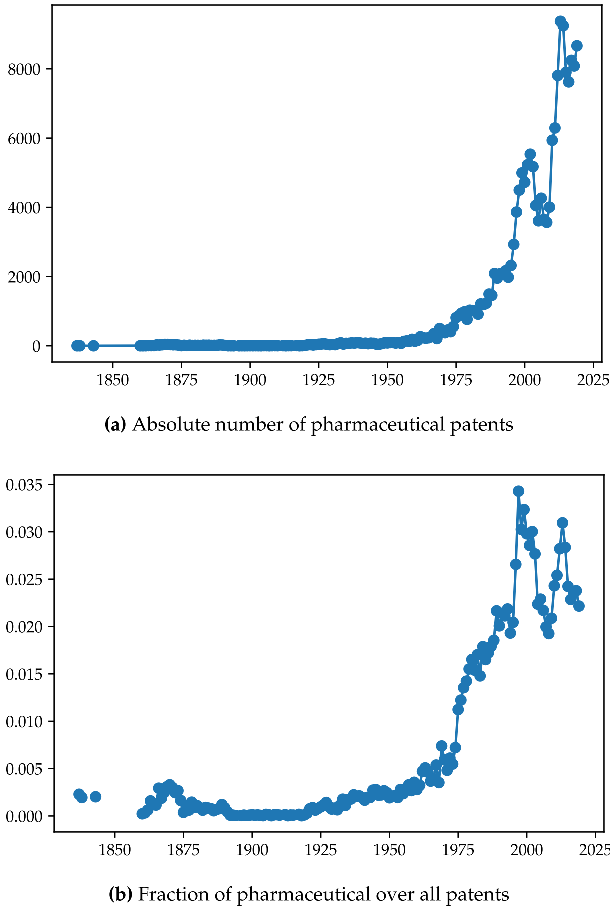
Fig. 7 Composition of household assets by category, 2019 or latest available year. Source: OECD (2022)

sive divide in the value of houses, with increasing market value and corresponding appreciation in cities, particularly highly service-supported and tourist oriented ones, versus inner areas recording depreciation. In that, although the ownership structure is diffused, the process of wealth accumulation keeps being concentrated, and favours wealth accumulation for owners of houses located in highly demanded urban areas. Finally, even within cities, a core-periphery duality is emerging, with the stream of income deriving from home ownership in suburbs that definitely cannot be compared with the value generated from home ownership in the centre.[5]

The evidence presented in relation to housing is yet another case of the process of rentification of capitalism, highlighted by the comparison between the gain from economic activity and the gain from property rights. Processes of appropriation, represented by the rising land cost, exclusion, represented by gentrification and restricted access for medium-low income people to home ownership, and commodification, via the transformation of the house into a status good, are the core mechanisms acting as forces behind the process of rentification. Notably, even country differences in terms of the forms of welfare state become second order with respect to the prevailing regime of rentification. Indeed, over time, heterogeneity from the variety of capitalisms tends to decrease, and a convergence tendency towards rentification appears to emerge, making rentification a new general socio-economic paradigm. A process of rent destruction in the housing market might occur for those houses which did not undergo the adoption of energy-saving and carbon-friendly domestic technologies. However, so far, green preferences for durable goods remain a niche, wealthy domain, as in the case of cars (Sovacool et al. 2018), while the mechanism of rent generation in the housing market is a much more generalised phenomenon.

On the ground of this evidence, it is not straightforward to identify a clear starting point of the process, ultimately connected with the rise of Neoliberalism. The process in any case has seen an explosion in the last decades, particularly after the eighties,

[5] Unfortunately, we do not have data on the breakdown of home ownership by location.



(a) Absolute number of pharmaceutical patents

(b) Fraction of pharmaceutical over all patents

Fig. 8 Source: Dosi et al. (2023)

and seems to have been progressively accelerated, last but not least, by the pandemic crisis and the energy and natural resource wars. Taking a secular view, however, it is a subtle and creeping mechanism behind capitalism, possibly interrupted only during the "glorious thirties", after WWII, as such, more an exception rather than the norm.

As we shall discuss, when also intellectual property rights become increasingly important, even more important than physical property rights, we enter in a face of accelerated rentification enacted by big intellectual oligopolies.

3.5 Intellectual Property Rights and Monopoly Power

The redefinition of the space of property rights certainly represents one of the major mechanism to gain rents. Intellectual property rights are configurations of ownership structure exercised over knowledge meant to secure appropriation. The case is particularly evident from one exemplary sector, the pharmaceutical one. According to the

recent evidence (for reference see Dosi et al. 2023), the sector displays an increasing propensity to secure property rights via patenting activities unrelated to the rates of innovation. Figure 8 (top) shows such increasing trend, starting in the nineteenth century. The non-linear increasing pattern is quite remarkable. Although patenting activities have been rising in all sectors, the steep pattern is confirmed when looking at the share of pharma patents vis-à-vis the total (Fig. 8, bottom). In fact, the paper finds that the number of firm-level patents in the industry is more correlated with profits, rather than with firm-level R&D expenditures. As such, patents result to be more a tool to secure property rights meant at fuelling profits, rather than the result of innovative activities financed via R&D expenditure.

Other features of the long term accumulation of property rights in pharma can be summarised as follows. First, such patents increasingly rely on prior (rather than novel) art and scientific knowledge, as testified by the growing number of backward citations to scientific literature, showing a relatively low degree of innovativeness; together, one observes a decreasing amount of breakthrough innovations, either in terms of new Molecular Entities or in the yearly number of patents receiving the top 1% of citations. Second, the innovative activity in new pharmaceutical products is largely concentrated into a few trade names, that is by patenting around a small set of commercial products, involving a restricted number of molecular combinations and diseases to be treated, often chronic diseases affecting high-income elderly people, as such, with higher market opportunities. Third, the government support in pharmaceutical product patents (Orange Book patents) has been decreasing over time and concentrating in few innovations, as such a mark of declining disruptive contents in new research, being public financing usually associated with more disruptive, and less market-rewarding, discoveries, such as neglected diseases (Moran et al. 2009).

Such evidence is a footprint of the so called *innovation crisis* in the pharmaceutical sector (Light and Lexchin 2012) characterised by the explosion in patenting activity which does not map into a corresponding growth in innovative activity. In this respect, pharma patents have increasingly constituted legal barriers to protect intellectual monopolies rather than an incentive and a reward to innovative efforts. Within an overall pattern of increasing patenting activities in pharma, those patents receiving approval from the Food and Drug Administration are extremely low, as well as the number of the new molecular entities per year. Therefore, what do the rest of patents do?

Considering the higher correlation of pharmaceutical patents with profits rather than with R&D, the accumulation of patents represents a form of legal barrier allowing to exclude access from the use of their knowledge, and, chiefly, creating increasing opportunities of infringement litigation. Although we lack precise data able to account for the total rate of returns from patents, as done by Jordà et al. (2017) for macroeconomic time series, intellectual property rights represent a huge possibility of rent extraction from the ownership of an artificially-scarce asset, as such because ex-ante *legally* excluded. In this respect, the accumulation of intangible assets, rather then physical capital, is the source of intellectual monopolism yielding a new breed of intellectual monopoly power.

4 Conclusions

We have discussed the notion of rentified capitalism as a configuration of the modern socio-economic fabric that goes beyond the factual recognition of economic rents (Mazzucato et al. 2023). We characterised theoretically and empirically the process at stake via three key mechanisms acting along different economic spheres, namely appropriation, exclusion and commodification. On top of these three processes, the current configuration of capitalism is affected by pervasive forms of penetration of digital technologies, adopted well beyond the scope of increasing productivity gains inside workplaces, but instead more apt to exercise forms of governance over the societal sphere (Dosi and Virgillito 2019). The connection between the rentification of capitalism and pervasive forms of digital control might well prefigure the architecture of a sort of techno-feudalism, an organization of society which should be firmly abhorred. In addition, the research agenda should go in the direction of developing new theories and measures of labour disempowerment and advancing on the study of new technologies and their potential to shape the system towards techno-feudalism. In that, specific analyses on AI worker management technologies should be performed, coupled with studies on the capacity of technologies to exert more and more pervasive forms of labour management. Such a dystopic scenario will rest essentially on the massive use of these technologies, associated with the attempt of managerial power to turn into centralised, unquestionable, automatic algorithms.

Notwithstanding the economists obsession with ultimate causes of whatever phenomenon, rentified capitalism has no simple cause. Rather, it is part of an overall reconfiguration of the contemporary socio-economic systems; the identification of its drivers well resonates with Joe Stiglitz seminal work on the economic roots of unjust societies (Stigilitz 2012). Indeed, in order to understand such a phenomenon, economists ought to be less of a plumber and more of a social scientist.

The analysis of rentified capitalism needs also to integrate an ecological perspective, including the mechanisms of appropriation of natural resources and raw materials. In addition, it requires to incorporate in a coherent manner the notion of power asymmetries into political economy, in order to define the conditions under which resources are appropriated by the different actors in the arena, again, in line with the work by Stiglitz (2019). In this respect, we need to re-articulate the neutral measurement and notion of inequality, simply resulting from wage or income differences, into a systematic analysis of social and economic asymmetries deriving from crystallised class structures.

The perspective of rentified capitalism bears profound implications also for policy directions. First, it requires massive redistributive policies deriving from taxation on rents. This goes in line with proposals on the introduction of a global scale tax on individual wealth but also on corporate profits of listed corporations (Saez and Zucman 2023). A fiscal reform is needed with the aim of reunifying the different sources of income, at the individual level, and at distinguishing the different taxation burden that wages, profits and rents should bear. The effect of such tax reforms should be progressivity, not just for wages, but for profits and rents as well (Dosi et al. 2020). At a deeper scale, acknowledging the existence of rentified capitalism implies a process of massive redistribution of property rights, particularly with the aim of preventing

the appropriation of public or common goods by private entities (Dolcerocca and Coriat 2016), and to envisage a new ownership structure able to guarantee not only equal, but mostly *fair and just* access to public goods and commons. This objective mostly revolves around the need to massively rearticulate the definition of intellectual and tangible property rights on the basis of social justice principles, decommodifying knowledge and restricting the space of market domains only to privately produced goods, rather than to appropriated public goods and commons. Considering that all private goods and services in their generation profoundly depend on the access and use of both material and immaterial common goods, taxation on income deriving from private market exchanges is based on a principle of social justice. A clear application of private use and even appropriation of material commons is nature and natural resources. The right of extraction of natural resources cannot be exclusively assigned with a perpetual ownership structure to private corporations. Natural resources should remain in the domain of public ownership, and only the right to use, with limited and controlled scopes, should be eventually granted. Nature and natural resources are not *res nullius*, but rather a common heritage that cannot be uniquely appropriated. At the same time, knowledge generation should be free from market mechanisms, being knowledge the exemplary case of an immaterial common. Decommodification of public goods and redefinition of property rights implies also a profound reorganization of the legal structure of capitalism, and in that, in the scope of institutions enforcing such rights, as the TRIPs agreement or the existence of patents in the health domain, as the case of patents for vaccines, antibiotics or antivirals.

Appendix: Variables Description

Variables description from Jordà et al. (2017).

Bill Returns. The canonical risk-free rate is taken to be the yield on Treasury bills, that is, short-term, fixed-income government securities. The yield data come from the latest vintage of the long-run macrohistory database (Jordà et al. 2017). Whenever data on Treasury bill returns were unavailable, they relied on either money market rates or deposit rates of banks from Zimmermann (2017).

Bond Returns. These are conventionally the total returns on long-term government bonds. Unlike earlier cross-country studies, they focus on the bonds listed and traded on local exchanges and denominated in local currency. This focus makes bond returns more comparable with the returns of bills, equities, and housing. Moreover, this results in a larger sample of bonds, and on bonds that are more likely to be held by the representative household in the respective country. For some countries and periods they have made use of listings on major global exchanges to fill gaps where domestic markets were thin or local exchange data were not available (for example, Australian bonds listed in New York or London). Throughout the sample, they target a maturity of around 10 years.

Equity Returns. These returns come from a broad range of sources, including articles in economic and financial history journals, yearbooks of statistical offices and central banks, stock exchange listings, newspapers, and company reports.

Housing Returns. They combine the long-run house price series introduced by Knoll et al. (2017). For most countries, the rent series rely on the rent components of the cost of living of consumer price indices constructed by national statistical offices. They then combine them with information from other sources to create long-run series reaching back to the late nineteenth century. To proxy the total return on the residential housing stock, the returns include both rented housing and owner-occupied properties. Specifically, wherever possible they use house price and rental indices that include the prices of owner-occupied properties and the imputed rents on these houses. Imputed rents estimate the rent that an owner-occupied house would earn on the rental market, typically by using rents of similar houses that are rented. This means that, in principle, imputed rents are similar to market rents and are simply adjusted for the portfolio composition of owner-occupied as opposed to rented housing. Imputed rents, however, are not directly observed and hence are less precisely measured than market rents, and are typically not taxed.

Variables description from OECD data: financial assets, such as saving deposits, investments in equity, shares and bonds, form an important part of overall wealth of households, and are an important source of revenue, either through the sales of these assets, or as a source of property income (such as interest and dividends). Pension entitlements are only included, if they relate to (funded) employment-related schemes, which may affect cross-country comparability to a considerable extent. Developments in the short term may show quite diverse movements, depending on the risk profile of the assets. The value of shares, for example, can show a relatively high volatility over the years. This indicator represents total financial assets of households per capita in US dollars at current PPPs.

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Declarations

Conflict of interest The authors declare that they do not have any conflict of interest.

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