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THE NICE ROBBER BARONS: ELITES' SUPPORT IN REDISTRIBUTION AS A SEDUCTION STRATEGY

Abstract:

This article explores why certain classes achieved social rights peacefully while others had to fight and the counterintuitive elites' support for redistribution. Using the overlapping-generations model platform, I describe the economy as a political confederation of sub-economies characterized by different economic horizons and the political process as a recursive biform contest. I show that elites' support for redistribution is a seduction strategy to sedate political tension through temporary transfers to lower classes while maintaining the elites' stationary social superiority. Then, I provide necessary conditions for a dynamically consistent social compromise and present an application that explains Director's law.

Keywords:

Overlapping generations, Bargaining, Biform contest, Seduction strategy, Political equilibrium

JEL Classification: C70, D30, D60

And king Rehoboam consulted with the old men that stood before Solomon his father while he yet lived, and said: How do ye advise that I may answer this people? And they spake unto him, saying: If thou wilt be a servant unto this people this day, and wilt serve them, and answer them, and speak good words to them, then they will be thy servants for ever.

(Kings I, 12, 6-7, King James Version)

Be heedful of the ruling power for they bring no nan high to them save for their own need: they seem to be friends such time as it is to their gain, but they stand not with a man in his time of stress.

(Mishnah, "Ethics of the Fathers", Aboth Ch. 2 §3, translated by H. Danby)

1. INTRODUCTION

This article aimed to address two salient phenomena regarding social conflicts. First, free people and workers have better chances to achieve certain rights (e.g., improved working conditions or higher salaries) peacefully through negotiations, although under the shadow of conflict, than enslaved groups who achieved nothing without violence, rebellions, and even civil wars[1]. Second, economists and journalists pointed out the anomaly of elites' support for redistributive policies, apparently contrary to their self-interests (Delmas et al., 2016; Goldberg, 2009; Pasovsky, 2020)[2]. While it is very tempting to disregard celebs, tycoons, and large conglomerates' support for redistribution as a public relations gimmick, there are indications of a positive correlation between socioeconomic status and social-democratic political orientation (Broitman, 2020; Hughes, 2017; Starkman, 2013). The post-WWII rise to power of social democratic parties in prosperous European states (e.g., Great Britain, West Germany, and the Scandinavian Peninsula), as well as the election of Democratic governors in affluent states in the United States (e.g., California and New York), could not happen without generous donations by wealthy individuals and firms[3].

I suggest that since struggles involve costs and risks, inequality will not lead to a violent confrontation inevitably, although jealousy is a powerful human trait. Moreover, individuals may tolerate a certain level of inequality and even bear poverty if they view it as temporary, believing that all dynasties share the same unique *horizon*. I.e., converge towards a typical steady state within a reasonable near future. Inequality

[1] Slave rebellions have been known around the world from ancient to modern history. Most slaves' revolts failed (Aptheker, 1993), but few achieved remarkable military successes (e.g., the *helots*' revolts against Sparta and the Servile Wars during the Roman Empire). The most notable occurred in 1791 in Haiti, when uprising slaves won their French masters and founded the second American independent state.

[2] For example, "Most Millionaires Support a Tax on Wealth Above $50 Million, CNBC Survey Says" (CNBC 6/12/2019). "Billionaire Bill Gates all for Higher Taxes, But Not a Wealth Tax" (Fox Business, 11/6/2019).

[3] Piketty described a shift of "blue-collar" workers from left-wing parties to the right or abstention from voting, while nowadays, most left-wing supporters are highly educated (Pasovsky, 2020).

becomes potentially explosive when that utopian egalitarian steady state is "too far" in the future, or people realize it is simply non-existent. Namely, lineages diverge in their horizons and converge toward steady states predetermined by initial endowments. Such a vision of stationary social stratification intensifies envy and stimulates redistribution demands by the poor (henceforth – the *proletariat*) against the rich (henceforth – the *elite*)[4], which may deteriorate into violence. The elite, seeking to sedate the political tension while maintaining its socioeconomic supremacy, would adopt a *political seduction strategy* of offering a redistribution scheme that temporarily improves the proletariat's welfare while minimizing its impact on stationary social stratification. The transfers from the elite to the proletariat are political insurance premiums on avoiding the risk of insurrections and manipulating lower classes to cooperate contrary to their long-run interest for contemporary bonuses.

I define a *sub-economy* as a collection of dynasties sharing a typical (socioeconomic) horizon and describe society (i.e., the grand economy) as a political confederation of sub-economies; each operates within the classical overlapping generations' model and converges towards its characteristic steady-state determined according to its initial capital-labor ratio. The political process is a recursive *biform contest*. That is, a two-stage game whose first stage is a bargaining game and the second is a contest in which contestants' winning probability depends on relative efforts. Consequently, confrontation is costly while its fruits are contingent, implying that all societal classes may benefit from a social compromise. The main result is that under common knowledge of rationality, a dynamically consistent compromise exists if and only if it is reversible, society tolerates some inequality, and the proletariat is sufficiently impatient. However, comparing the relative burdens induced by different redistributive schemes on the elite is ambiguous. Therefore, the elite's preferences regarding redistributive systems are unpredictable on a theoretical basis.

The seduction strategy is applicable even in environments with complete and symmetric information and perfect foresighted agents, as long as immediate costs of a conflict are inevitable while future benefits are contingent. Cognitive biases and heuristics (e.g., hyperbolic discounting, myopia, bounded rationality, etc.) may be

[4] I use the terms *elite*, *middle-class*, and *proletariat* for convenience, abstract from any political or ideological context.

helpful for the seduction strategy's success, but none is necessary. Yet, in a standard compromise, at least one side genuinely concedes to his rival. The elite's concessions in a seductive equilibrium are merely dummies and temporary. Moreover, usually, the persistence of distortions indicates that they serve a powerful lobby able to impose their costs on society or ruling politicians who seek to enforce politically unacceptable measures by deliberately exacerbating welfare losses caused by those distortions, e.g., accelerating hyperinflation (Drazen & Grilli, 1993; Hirschman, 1985). Distortive redistributions, on the contrary, may reveal consensually supported by differently motivated societal classes. (I return to this insight in section 5).

***Outline*:** The subsequent section contains a brief survey of related literature. Section 3 describes society as a political confederation of sub-economies; each operates within the classical overlapping generations' model and converges towards its characteristic steady-state determined according to its initial capital-labor ratio, discusses the differences between economic and political equilibria, classifies the main redistributive systems the elite may offer to the proletariat according to their reflected social norms, and describes their impact on the economic dynamics and stationary social stratification. In section 3.6, I analyze the recursive *biform contest* and its subgame-perfect equilibrium. Section 5 applies the theory to explain the empirical finding known as Director's Law and the limited scale of inter-classes capital flows. Section 6 summarizes, and the appendix (section 7) contains all proofs.

2. RELATED LITERATURE

The study of sincere and strategic motives for supporting redistribution started with the seminal papers by Romer (1975) and Meltzer & Richard (1981). Sincere motives include, for example, personal history and prospects of social mobility (Benabou & Ok, 2001; Giuliano & Spilimbergo, 2013; Piketty, 1995), distributive justice philosophy, values, education, altruism, and cultural norms or religious imperatives (Alesina & Giuliano, 2011; Bénabou & Tirole, 2006a, 2006b; Durante et al., 2014; Rawls, 1971; Stark, 1999)[5]. Strategic motives include social status and identity politics (Alesina

[5] One may argue that sincere motives should express in private donations and voluntary activities rather than supporting redistribution policies imposed on other people's money. This debate is beyond the scope of this article.

& La Ferrara, 2005; Edlund & Pande, 2002)[6], social insurance (Alesina & Giuliano, 2011; Samuelson, 1958; Schwarz, 2006), and political economy considerations, e.g., firms' public relations gimmicks and political populism aimed at enhancing electoral chances, or seduction strategies to reduce political tension and avoid insurrections (Acemoglu & Robinson, 2000). While individuals may have mixed preferences and motives (Alesina & Giuliano, 2011; Schwarz, 2006), controlling for all other factors, rich people tend to be more redistribution averse (Alesina & Giuliano, 2011)

The study of the impact of force on equilibrium income distribution, allocation of production factors, and *agreements in the shadow of conflict* produced extensive literature (see, for example, Bush & Mayer, 1974; Gonzalez, 2012; Grossman, 1991; Piccione & Rubinstein, 2007; Schwarz, 2019; and references there). Strategies of force avoidance like cheating and seduction, although well known in ancient epochs (see motto) and lauded by Machiavelli (2008, Ch. 15)[7], attracted relatively less attention in modern political economy literature (Aghion et al., 1999; Benhabib & Rustichini, 1996; Stiglitz, 2016). Instead, the literature studied techniques used by politicians to repel public criticism, like obfuscation and blame deflection (Fiorina, 1982, 1986; Schwarz, 2022), and their typical intention to postpone necessary but unpopular reforms to times of crisis (Alesina & Drazen, 1991; Cukierman & Tommaso, 1998; Drazen & Easterly, 2001; Drazen & Grilli, 1993; Fernandez & Rodrick, 1991; Hirschman, 1985; Orphanides, 1996 and more) and related topics[8]. Two notable exceptions merit attention. Roemer (1985) applied the seductive strategy argument to show how opposite classes select appropriate ideologies (which may contradict their class interests) to recruit potential support. Acemoglu and Robinson (2000) modeled a

[6] Stationary dispersions in beliefs create stationary diffusions in political attitudes towards redistribution. Self-enhancing beliefs explain differences in societal-political equilibria and may drive societies to adopt inefficient institutions and policies. (See Romer 2003, and Acemoglu, Johnson, & Robinson 2005 for criticism). Generally, however, the political economy literature focused mainly on the status effect on political *activity* (e.g., voting participation), which is less relevant to our topic due to various factors that may divert actual voting from political orientation. (E.g., strategic voting or abstention, low probability of being pivotal, etc.). The psychological literature studied the status effect on political orientation more extensively and pointed out that support for redistributive policies designed to reduce economic inequality is present across all social classes and political parties (Brown-Iannuzzi et al., 2017a, 2017b).

[7] Indeed, Machiavelli's meaning is nonetheless controversial due to his deliberately vague writing style.

[8] E,g., "Tyranny of the Status Quo" (Friedman & Friedman, 1985), collective action problems (Olson, 2009), and obstacles related to the Laffer curve and budgetary constraints (Lundberg, 2017).

related counterintuitive anomaly of western elites' support for enfranchising extension as a seduction strategy to avoid revolts, arguing that enfranchisement is a commitment device to enhance the credibility of future redistribution promises. In a subsequent study (Acemoglu & Robinson, 2001), they argued that since democratization is reversible through coups, "democracy is more likely to be consolidated if the level of inequality is limited, whereas high inequality is likely to lead to political instability"[9], (an oscillation between regimes accompanied by fiscal volatility)[10]. However, as Acemoglu et al. (2015) indicated, successful revolutions often replaced one dictatorship with another and did not increase equality. This theory does not explain poor support for dictatorships and rich support for redistribution, and the consistently successful and risk-free coup assumption seems highly unrealistic[11].

Despite some similarities, seduction and obfuscation strategies differ substantially. Obfuscation relates to cheating, while the seduction strategy relates more to blackmailing. An obfuscation strategy is relevant in a signaling game for politicians unable or reluctant to fulfill their commitments. For example, "placebo reforms", inefficient measures yielding (probably temporary) fast fruits to convey that the government is "doing something", initiated by politicians eager to avoid the political costs associated with necessary but unpopular reforms while their successors reap their fruits. Voters credit the competence of politicians who initiate inefficient reforms more than that of politicians who can only explain why the optimal reform is unachievable. Thus, governments implement numerous sub-optimal inefficient reforms yearly, usually small in size and scope, not designed to succeed but to increase the re-election probability of the initiating politicians (Gustafsson, 2019)[12]. Placebo

[9] The authors rely on studies showing that democracies offer higher wages (e.g., Rodrik 1999) while emphasizing that dictatorships against wealthy interests are out of the scope of their research. Similarly, they rely on many studies showing that fiscal policy in Latin America is significantly more variable than in consolidated democracies. However, they admit that there is no evidence that this volatility is associated with more redistribution. On the other hand, they also quote many studies showing that transitions towards democracy in Latin America are more likely to occur in economic crises. These facts comply with my thesis since recessions widen the gap between the rich and the poor, implying that redistribution demands are more likely to arise following recessions.

[10] On the other hand, Aidt & Jensen (2013) provided an identification strategy to tackle the fact that democracy is endogenous, arguing that "revolutionary threat," measured by revolutionary events in other countries, is a viable instrument for democracy in a panel of Western European countries between 1820 and 1913. Democracy, as measured by the extent of suffrage, has a robust positive effect on government spending relative to GDP.

[11] About 50% of coups succeed (Powell & Thyne, 2021, 2011).

[12] Like portfolio managers who inflate their activities to convey a "working hard" signal to justify higher

reforms and other obfuscation techniques work because their consequences are contingent and delayed; thus, "this is not informational asymmetry in the usual sense, but rather an asymmetry in the level of understanding of a stochastic environment" (Spiegler, 2013)[13]. On the other hand, political seduction is not signaling, but a bargaining strategy played by the elites to calm political tensions and preserve their social superiority. As indicated above, bounded rationality and other cognitive biases may increase this strategy's chances (Osborne & Rubinstein, 1998; Spiegler, 2004), but none is necessary. Usually, obfuscation reforms do not transfer wealth from one societal class to another. Yet, political seduction involves some level of redistribution, typically temporary and designed to leave the steady-state social stratification unchanged (see section 5)[14].

Acemoglu et al. (2015) pointed out that the extensive empirical literature on the interrelations between democratization, redistribution, and inequality, reached no clear-cut conclusion, but estimated the long-run effect of democracy as "about a 16% increase in tax revenues as a fraction of GDP". Still, they indicated: "we find a much more limited effect of democracy on inequality. In particular, although some measures and specifications indicate that inequality declines following democratization, there is no robust pattern in the data (certainly nothing comparable to the results on taxes and government revenue). These authors attribute the vagueness of their results to "poorer quality of inequality data" and others (e.g., Dorsch & Maarek, 2019) to the transition's preconditions, but it seems more related to the fundamental problem associated with this literature. Namely, viewing inequality as a static situation and using Gini and other indices based on cross-section or panel data that pool young and old individuals together. However, inequality is dynamic and varies along the life-cycle; only a few stay in their initial percentile. Classifying young students as poor according to their current percentile affiliation, for example, ignores their prospect

commissions (Dow & Gorton, 1997).

[13] Other obfuscation techniques used by incompetent politicians are charisma, demagogy, leadership skills, caring nature, or blame deflection (Congleton & Zhang, 2013; Fiorina, 1982, 1986; Schwarz, 2022).

[14] In a fascinating manifestation of the seduction strategy's success, Anthony Crosland, a prominent socialist politician and thinker, argued that the social-democratic welfare state eventually and irreversibly turned capitalism into active socialism (Crosland, 1956). Ronald Reagan and Margaret Thatcher debunked Crosland's prediction, proving that the reversibility of the welfare state enabled its creation from the beginning. Yet, radical socialists criticized social democracy as designed for the capitalist system's survival, contrary to the socialist goal of overthrowing capitalism (Clarke, 1981).

flows of income as they move to higher percentiles during their life cycle. From a societal perspective, the vital issue is the long-run steady-state social stratification—namely, the social mobility opportunities that determine individuals' and dynasties' *life-cycle* or *permanent* income (Sowell, 2001).

3. THE MODEL

3.1. *The Overlapping Generations' Model Platform*

Consider an overlapping generations' economy producing a single good using capital (including physical, human, and composite capital) and labor (including quality labor units). Assume that the technology exhibits constant returns to scale and is described by the production function[15],

$$F(K_t, L_t) = A\left[\alpha K_t^{-\rho} + (1-\alpha) L_t^{-\rho}\right]^{-\frac{1}{\rho}},\ A, \rho > 0,\ \alpha \in (0,1), \tag{1}$$

where K_t and L_t denote period t amounts of capital and labor, respectively. Defining $k_t = K_t / L_t$ enables reducing (1) to $f(k_t) = A\left(\alpha k_t^{-\rho} + 1 - \alpha\right)^{-\frac{1}{\rho}}$. In a competitive equilibrium,

$$\begin{aligned} r_t &= f'(k_t) = A\alpha k_t^{-(1+\rho)}\left(\alpha k_t^{-\rho} + 1 - \alpha\right)^{\frac{\rho-1}{\rho}} \\ w_t &= f(k_t) - k_t f'(k_t) = A\left[1 - \alpha k_t^{-\rho}\left(\alpha k_t^{-\rho} + 1 - \alpha\right)\right]\left(\alpha k_t^{-\rho} + 1 - \alpha\right)^{-\frac{1}{\rho}}, \end{aligned} \tag{2}$$

where r_t and w_t denote capital rate of return and labor wage, respectively.

Individuals live for one period and derive utility from their consumption, c_t, and capital bequests for their offspring, k_{t+1}. The individual's life-cycle utility is,

$$U_t = u(c_t) + \beta u(k_{t+1}), \tag{3}$$

where $\beta \in (0,1)$ is the individual's subjective discount factor. The contribution of generation t to k_{t+1} is indirect, through saving, s_t. Denote the exogenous demographic growth rate by n, and for simplicity, assume no depreciation. Individuals allocate their wage, w_t, between c_t and s_t, to maximize (3) subject to:

$$c_t + s_t = w_t, \tag{4}$$

and the economy's transition trajectory function,

[15] The specifications of all functions in this article were chosen to ensure solvability and enable simulating. However, our central result, Theorem 1, is independent of any assumption regarding functional specifications.

$$(5) \qquad k_{t+1} = \frac{s_t\left(1+r_t\right)}{1+n}.$$

Solving the individual's optimization problem assuming $u\bullet = \ln\bullet$ (to enable simulations), we obtain,

$$(6) \qquad c_t^* = \frac{w_t}{1+\beta}, \quad s_t^* = \frac{\beta w_t}{1+\beta}.$$

Combining (2), (4), (5), and (6) with the consumer's equilibrium condition $\beta = \left(1+r_t\right)^{-1}$, $\forall t$ (Hall, 1978) yields,

$$(7) \qquad k_{t+1}\left(k_t\right) = \frac{A\left(1-\alpha\right)k_t^{\rho+1}}{\left(1+n\right)\left(\alpha A + 2k_t^{\rho}\left[\alpha+\left(1-\alpha\right)k_t^{\rho}\right]\sqrt[\rho]{1+\alpha\left(k_t^{-\rho}-1\right)}\right)}.$$

3.2. *Economic vs. Political Equilibria*

A *sub-economy* is a collection of dynasties converging towards a common steady state, thus sharing the same economic horizon. Labor is mobile, but there are no capital flows between sub-economies. Therefore, each sub-economy is characterized by its typical horizon, predetermined by the initial capital-labor ratio[16]. The *grand economy* is a political confederation of sub-economies with joint sovereignty, legislature, executive, bureaucracy, and a judicial system. Therefore, it is crucial to distinguish between *economic* and *political* steady-states. An economic steady-state preserves the capital-labor ratio from period to period within each sub-economy. A *political* steady-state refers to the polity's *stationary social stratification*, namely the disparities between sub-economies' wealth (even when they all grow permanently)[17].

This description deviates from the traditional assumption prevalent in macroeconomics that the rich own the entire capital and the poor supply the labor, but by no means weird or less realistic. On the contrary, the assumption that all agents are both workers and capital owners seems more natural for a political economy study and has prevailed in microeconomics since Arrow-Debreu (1954)[18]. Our assumptions

[16] The justification for this assumption is discussed in section 5 below.

[17] With carefully chosen parameters, the model would yield permanent growth. Nevertheless, this article is *not* a macroeconomic study of growth, but a political economy analysis of social class interrelations using the overlapping generations' model as a convenient platform. Therefore, I abstract from the permanent growth issue, although macroeconomists would consider the model's prediction of zero growth rate at the steady state obsolete.

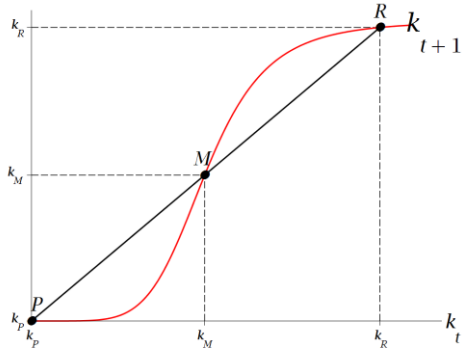
[18] Self-employed artisans usually own small workshops, and workers who provide labor services to wealthy

about competitive markets and constant returns to scale ensure zero profits from capital and neutralize the effect of capital distribution within each sub-economy.

3.3. *The Economic Steady-States*

By definition, an economic steady-state satisfies $k_{t+1}(k_t) = k_t$. Although by our assumptions, each sub-economy converges to its characteristic unique steady-state, I describe them together in a unifying graph for visual convenience. Figure 1 simulates (7) calibrated carefully to produce a separating equilibrium with three steady-states denoted P, M and R, representing the proletariat, the middle-class, and the elite steady-states, respectively. The proletariat sub-economy is populated by all dynasties starting at $k_t < k_M$ and converging on the k_{t+1} trajectory towards P (the *poverty trap*). The elite sub-economy consists of all dynasties starting with $k_t > k_M$ and converging towards R (the *rich* equilibrium). The middle-class sub-economy consists of dynasties beginning with $k_t = k_M$ and staying in the *medium* equilibrium, M [19].

Figure 1: The Sub-Economies' Steady-states



Calibration: $A = \rho = 5,\ \alpha = 0.5,$ and $n = 0.1$

3.4. *The Political Compromise*

As argued above, the explosive potential of political tension relates to the *political* steady-state. Political pressure becomes potentially explosive due to significant stationary social stratification; when a dynasty's economic horizon and the derived social status are predetermined by its initial endowment. Therefore, while the unifying multi-equilibria graph presented in Figure 1 is visually convenient, the

industrialists may be professional and possess significant human capital. Moreover, even the poorest classes in developing countries hold significant *dead capital* characterized by the underproduction of income streams due to political and institutional obstacles (De Soto, 2000).

[19] The political role of the apparent "zero-dimensional" middle class is discussed in section 5. For a microeconomic analysis of the origins of the initial k_t distribution, see Schwarz (2019).

traditional textbooks' classifications of points P and R as *stable* steady-state equilibria and point M as an *unstable saddle-point* make no political sense. On the contrary, the more (economically) polarized the society is, the greater the political tension that naturally would invoke redistribution demands by the proletariat and threats to confront the elite in case of refusal[20].

Practically, the proletariat demands to establish a redistribution system that taxes the rich and uses the receipts to subsidize the poor[21]. The political classifications of *rich* and *poor* depend on societal norms. Denote the *societal reference level* of dynastical capital holding per-capita by $\bar{k}$, and the *societal inequality tolerance degree* by ε. A dynasty is politically associated with the elite if $k_{t+1} > \bar{k}_R = \bar{k} + \varepsilon$, the proletariat if $k_{t+1} < \bar{k}_P = \bar{k} - \varepsilon$, and the middle-class if $k_{t+1} \in \bar{k}_P, \bar{k}_R$. Define $\Delta k_{t+1} = k_{t+1} - \bar{k}_i$, $i \in \{P, R\}$, and denote the rich tax rate by θ and the poor subsidy rate by δ. Assume zero deadweight loss for simplicity, and it follows that the system's balanced budget constraint implies that total taxes equal total transfers:

$$\delta \int_{k_P}^{\bar{k}} \Delta k_{t+1} dk_t - \theta \int_{\bar{k}}^{k_R} \Delta k_{t+1} dk_t = 0,\ \delta, \theta \in (0,1). \tag{8}$$

Naturally, the sub-economies differ in population size L_t , thus $\theta \neq \delta$. Nevertheless, given one parameter and assuming that the contemporary budget constraint is binding for every period, the other is derived from (8).

3.5. *Social Norms and Redistribution*

It would be helpful to classify societies (with a slight abuse of language) according to their attitude towards inequality as *social-democratic* and *egalitarian* (or *Rawlsian*)[22].

A social-democratic society legitimizes private property rights and tolerates limited inequality, conditional on being created through legal and fair economic activity. Thus, a social democratic society tax *incremental* change in dynastical capital and avoids repeated taxation on accumulated wealth, implying that its reference level

[20] As noted in footnote 17, I abstract here from the permanent growth issue. Nevertheless, it is worth noting that social anxiety in a permanently growing economy would even exacerbate, especially if the elite sub-economy grows faster than the proletariat, encouraging grievances like "only rich people benefit from economic growth".

[21] The moral basis of these demands is beyond the scope of this article.

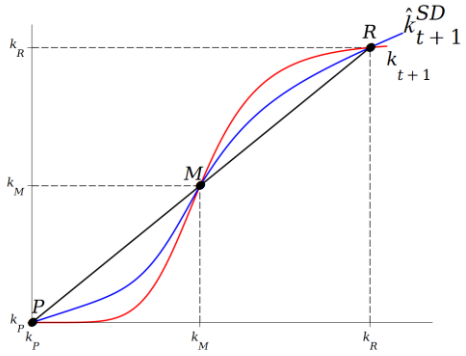
[22] I omit the third option of a *libertarian* society, which finds no moral fault in economic inequality reflecting innate inequality in talents and abilities because such an envy-free society seems utopian.

is $\bar{k}_i^{SD} = k_t$, $i \in \{P, R\}$, $\Delta_{k+1}^{SD} = k_{t+1} - k_t$, and its *modified* transition equation is:

$$\hat{k}_{t+1}^{SD} = \begin{cases} k_{t+1} - \theta \Delta k_{t+1} & k_t > \bar{k}_R \\ k_{t+1} & k_t \in \left(\bar{k}_P, \bar{k}_R\right) \\ k_{t+1} + \delta \Delta k_{t+1} & k_t < \bar{k}_P \end{cases} \tag{9}$$

where k_{t+1} is given by (7). Notice that under the social democratic system $\Delta_{k+1}^{SD} = 0 \Leftrightarrow k_{t+1} = k_t$, implying that the social democratic economy converges on its modified transition trajectory $\hat{k}_{t+1}^{SD}$ towards the original steady-state equilibria, as simulated in Figure 2. In other words, a social-democratic system does not affect stationary social stratification, but since $\hat{k}_{t+1}^{SD}$ is flatter than k_{t+1}, the modified convergence is slower.

Figure 2: The Dynamics of a Social Democratic Economy



Calibration: $A = 5$, $\rho = 5$, $\alpha = \theta^* = 0.5$, $n = 0.1$, and (by Lemma 5, see appendix) $\theta^* = p_P^*$.

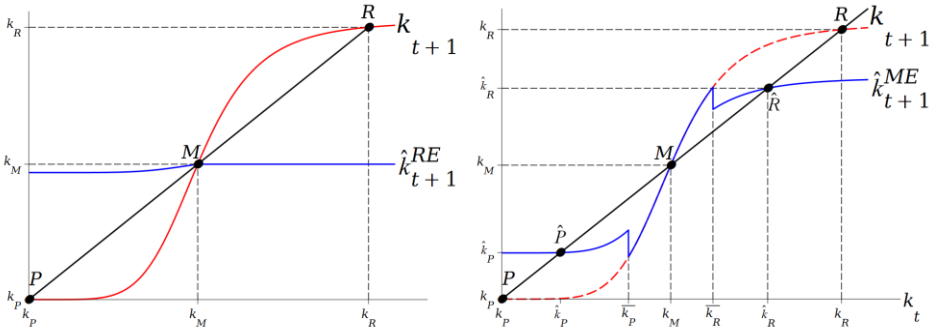
An egalitarian society seeks to eliminate inequality and therefore refers to *total* dynastical capital holding, implying $\bar{k}^E = k_M$. An egalitarian society is *radical* if $\varepsilon = 0$, *moderate* if $\varepsilon > 0$, $\bar{k}_P = k_M - \varepsilon$ and $\bar{k}_R = k_M + \varepsilon$. The *modified* egalitarian economy transition equation is,

$$\hat{k}_{t+1}^{E} = \begin{cases} k_{t+1} + \delta\left(k_{t+1} - \bar{k}_P\right) & k_t \le \bar{k}_P. \\ k_{t+1} & \bar{k}_P < k_t < \bar{k}_P \\ k_{t+1} - \theta\left(k_{t+1} - \bar{k}_R\right) & k_t \ge \bar{k}_R \end{cases} \tag{10}$$

Since under an egalitarian system $\Delta_{k+1}^{E} = 0 \Leftrightarrow k_{t+1} \in \left\{\bar{k}_P, k_M, \bar{k}_R\right\}$, it inevitably affects stationary social stratification, leaving only the middle-class steady-state unaffected, as simulated in Figure 3. Panel (*a*) of Figure 3 simulates the radical egalitarian economy modified transition equation $\hat{k}_{t+1}^{RE}$ and shows its instantaneous convergence

towards its unique steady-state M[23]. Panel (*b*) of Figure 3 simulates the modified moderate egalitarian economy's transition equation $\hat{k}_{t+1}^{ME}$ and demonstrates that the proletariat and the elite converge towards modified steady-state equilibria $\hat{P}$ and $\hat{R}$, respectively. In both panels, the middle-class equilibrium, M, is unchanged. (I return to this point in section 5)[24].

Figure 3: The Dynamics of Egalitarian Economies

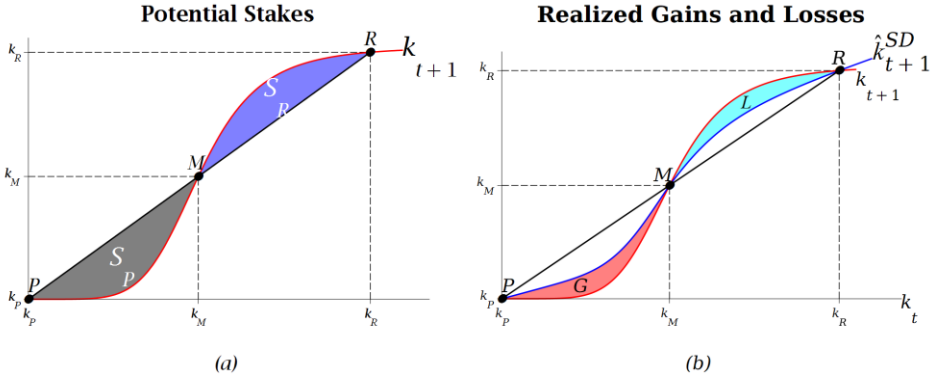


Calibration: $A=5,\ \rho=5,\ \alpha=\theta^{*}=0.5,$ and $n=0.1$, and (by Lemma 5, see appendix) $\theta^{*}=p_P^{*}$.

3.6. *The Redistributive Effect of a Social Compromise*

The proletariat and the elite's stakes (potential gains and losses) in a social-democratic society are $S_P^{SD}=\int_{k_P}^{k_M}\Delta_{t+1}^{SD}dk_t$ and $S_R^{SD}=\int_{k_M}^{k_R}\Delta_{t+1}^{SD}dk_t$, respectively (see panel (*a*) of Figure 4). The classes' *realized* gains and losses under a social-democratic compromise, θ^{*}, are $G_P^{SD}=\delta^{*}S_P^{SD}$ and $L_R^{SD}=\theta^{*}S_R^{SD}$, respectively (panel (*b*)).

Figure 4: The Social Democratic System's Redistributive Effect



Calibration: $A=5,\ \rho=5,\ \alpha=\theta^{*}=0.5,$ and $n=0.1$, and (by Lemma 5, see appendix) $\theta^{*}=p_P^{*}$.

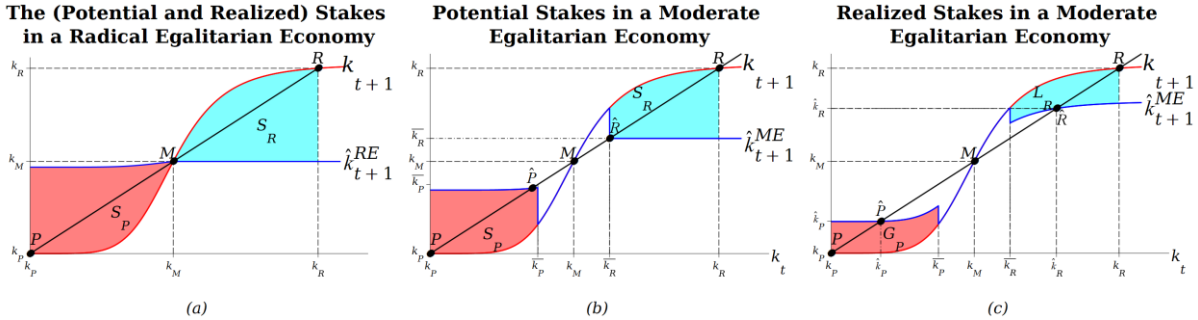
Similarly, Figure 5.**שגיאה! מקור ההפניה לא נמצא** simulates the classes' stakes in an

[23] The $\hat{k}_{t+1}$ curve in panel (*a*), between k_P and k_M, is not horizontal because usually k_M is not necessarily on the midrange between k_P and k_R, and $\theta\neq\delta$.

[24] Each system's effect on (stationary) social welfare depends on social norms. For example, an egalitarian system certainly increases Rawlsian social welfare, while its impact on the Benthamite social welfare is ambiguous.

egalitarian society, $S_P^E = \int_{k_P}^{k_M} \Delta_{t+1}^E dk_t$ and $S_R^E = \int_{k_M}^{k_R} \Delta_{t+1}^E dk_t$, and their realized gains and losses $G_P^E = \delta^* S_P^E$ and $L_R^E = \theta^* S_R^E$. Notice the influence of θ^* on the $\hat{k}_{t+1}^{ME}$ curve, as shown in panels (*b*) and (*c*).

Figure 5: The Egalitarian System's Redistributive Effect



Calibration: $A = 5,\ \rho = 5,\ \alpha = \theta^* = p_P^* = 0.5,$ and $n = 0.1$, and $\varepsilon = \frac{1}{4} k_M$ for visibility.

Proposition 1: $\Delta L_{RE,SD} = L_R^{RE} - L_R^{SD} > 0$ *but* $\operatorname{sgn}\left(\Delta L_{ME,SD}\right) = \operatorname{sgn}\left(L_R^{ME} - L_R^{SD}\right)$ *is indeterminate.*

Proposition 1 states that a radical egalitarian redistribution induces a heavier burden on the elite than a social-democratic redistribution, but if society tolerates some inequality $(\varepsilon > 0)$, the relative burden is ambiguous.

Proof: see appendix.

Intuitively, ΔL_{t+1} is continuous and decreases with ε monotonically, implying that there is a critical value, ε_c, satisfying $\Delta L_{ME,SD} \le 0,\ \forall \varepsilon \ge \varepsilon_c$. It follows that elite support for egalitarianism is compatible with a seduction strategy, given that $\varepsilon > \varepsilon_c$. Namely, when the margins of nominal egalitarianism are sufficiently broad to exempt most elite dynasties from taxation.

4. THE POLITICAL BIFORM CONTEST

A *biform contest* is a two-stage n*-player game*, where the first stage is a bargaining game and the second is a contest (Schwarz, 2012, 2019)[25]. Formally, a biform contest is a tuple $\langle \mathbf{e}, p, \mathbf{v}, \theta \rangle$ where $\mathbf{e}$ is the contestants' efforts' profile, p is the contest success function, $\mathbf{v}$ is the vector of contestants' utilities, and θ is the disputed object. In this analysis context and without loss of generality, the political controversy is about the rich tax rate θ (recall that δ is derived from (8)); the proletariat seeks $\theta \to 1$ while the elite seeks $\theta \to 0$. If first-stage bargaining fails, the parties engage in a second-stage

[25] For *biform* (or *hybrid*) *games*, see Stuart (2005) and Brandenburger & Stuart (2007). For Tullock (1980) contest, see Epstein & Nitzan (2007).

contest, and the winning class imposes its favorite value of θ.

The course of the game is as follows (see Figure 6):

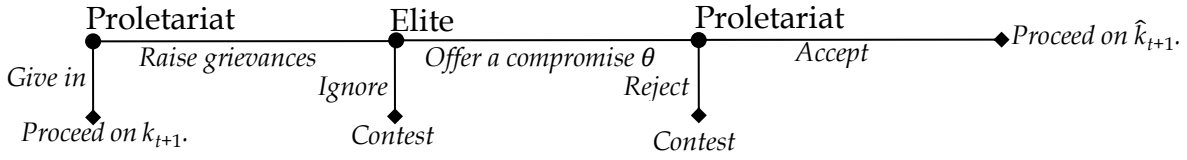
(1) The proletariat decides whether to give in or raise grievances (demand "distributive justice"). If the proletariat gives in, the economy proceeds on its original transition trajectory k_{t+1}.

(2) If the proletariat raises grievances, the elite decides whether offer a compromise θ or ignore it.

(3) If the elite ignores, the game proceeds to a contest. Otherwise, the proletariat has to decide whether to accept or reject the elite's offer.

(4) If the proletariat rejects, the parties engage in a second-stage contest. Otherwise, a redistributive welfare system is established, and the economy proceeds on a modified transition trajectory $\hat{k}_{t+1}$.

Figure 6: The Biform Contest Game Form



We derive the periodical biform contest's subgame-perfect equilibrium using the standard backward induction technique. Namely, we first analyze the second-stage contest equilibrium and then analyze the first-stage bargaining equilibrium given the anticipated contest equilibrium.

4.1. *Subgame Perfect Equilibrium*

The biform contest is played recursively every period. There are several reasons for preferring a *recursive game* model to a *repeated game* model to describe political dynamics. Concisely, social classes are not homogenous personalities with stable and coherent preferences. On the contrary, the intergenerational transmission of beliefs and ideologies is partial due to numerous cultural, social, and political factors. Additionally, future technological and social developments may enhance social mobility even in conservative societies with the perfect intergenerational cultural transmission. Hence, rational political agents would maximize contemporary utility

rather than the discounted sum of expected prospects[26].

4.1.1. The Second Stage Contest

Given the failure of the first-stage negotiations over θ, the parties confront in a second-stage contest. Denote the contestants' efforts profile by $\mathbf{e}=\left(e_P,e_R\right)$, where e_P and e_R denote the effort exerted by the proletariat and the elite, respectively[27], the elite's winning probability by $p_R(\mathbf{e})$, and the proletariat's winning probability by $p_P(\mathbf{e})=1-p_R(\mathbf{e})$. If the elite wins, it imposes $\theta=0$. Otherwise, the proletariat imposes $\theta=1$. Assume that $\partial p_i/\partial e_i>0$ and $\partial p_i/\partial e_j<0,\ i\in\{P,R\}$[28].

Inserting (2), (6), and the modified (5) into (3) reveals that $U_t=U_t\ k_t\ \theta,\mathbf{e}$, implying that we may write the contestants' indirect utility function as $v_i\left(\theta,\mathbf{e}\right),\ i\in\{R,P\}$, where $\partial v_P/\partial\theta>0$ and $\partial v_R/\partial\theta<0$. Assume that v_i exhibits constant absolute risk aversion (CARA) with respect to e_i, and following the literature (see, for example, Epstein & Nitzan, 2007), assume that the effort constraint is not binding and the efforts' costs are captured by $\partial v_i/\partial e_i<0$[29].

Each class seeks to maximize its expected payoff function:

$$\pi_i\left(\theta_i^*,e_i\right)=p_i(\mathbf{e})v_i\left(\theta_i^*,e_i\right)+\left(1-p_i(\mathbf{e})\right)v_i\left(\theta_j^*,e_i\right),\ i\neq j,\ i,j\in\{R,P\}. \tag{11}$$

A contest Nash equilibrium is an effort profile $\mathbf{e}^*=\left(e_i^*,e_j^*\right)$ satisfying $\pi_i\left(\theta,e_i^*,e_j^*\right)\geq\pi_i\left(\theta,e_i,e_j\right),\ \ i\neq j,\ i,j\in\{P,R\}$. Differentiating (11) with respect to e_i

[26] Notice that this setting is consistent with the implicit assumption underlying the formulation of the individuals' target function, (3). Namely, individuals derive utility from bequeathing k_{t+1}, not from their decedents' felicity.

[27] For a moment, suppose that the middle class is neutral. Alternatively, the middle class supports one of the rival classes, and its efforts are included in one of the parties' efforts. I return to this point in section 5.

[28] Acemoglu & Robinson (2000, 2001) solved the collective action problem (Hardin, 1982; Olson, 2009) by assuming that coups and revolutions always succeed and benefit their initiators. This assumption is highly unrealistic (see footnote 11). Roemer (1985, 1988) argued that although we do not have a satisfactory explanation, historically, insurgent groups managed somehow to overcome their free-riding problem. Grossman (1991) criticized these claims and supposed that only contributors benefit from the fruits of the revolution. This assumption does not solve free riding completely in manager-agent situations. Nevertheless, since collective action is not our topic, it is sufficient for our analysis to assume that each societal class somehow manages to control its collective action problem. For example, through social sanctions or norms (Richter & Rubinstein, 2020), without delving into details.

[29] This assumption is advantageous, beyond simplification, to prove that effort constraints and product loss are not required to ensure compromises (Schwarz, 2019). Alternatively, it is equivalent to assuming that insurrection costs are inflicted mainly on the masses and less on leaders, which further justifies the risk-neutrality assumption.

yields the first-order conditions,

$$p_i'(\mathbf{e})\left[v_i\left(\theta_i^*,\mathbf{e}\right)-v_i\left(\theta_j^*,\mathbf{e}\right)\right]= p_i(\mathbf{e})v_i'\left(\theta_i^*,\mathbf{e}\right)+\left[1-p_i(\mathbf{e})\right]v_i'\left(\theta_j^*,\mathbf{e}\right),\ i\neq j,\ i,j\in\{P,R\} \tag{12}$$

easily solved if contestants are assumed risk-neutral, yielding a unique pure-strategy equilibrium (Pérez-Castrillo & Verdier, 1992; Szidarovszky & Okuguchi, 1997). Unfortunately, the impact of risk aversion on contestants' behavior is generally unknown. With risk-aversion, the model is analytically solvable under restrictive assumptions on v_i (Cornes & Hartley, 2003, 2012) and may have none, unique, or multiple equilibria (Chowdhury & Sheremeta, 2011a, 2011b)[30]. Nevertheless, the assumption that v_i exhibits CARA with respect to e_i ensures the existence of a unique pure-strategy Nash equilibrium even when the model is insolvable analytically (Cornes & Hartley, 2003, 2012; Skaperdas & Gan, 1995; Yamazaki, 2009).

4.1.2. The First-Stage Bargaining

From the contestants' first-stage point of view, the second-stage contest is a risky lottery. Risk-averse agents would prefer collecting the expected payoff $\pi_i\left(\theta^*,\mathbf{e}^*\right)$ with certainty to participating in a lottery. In contests, this would apply to risk-neutral contestants too, since our assumption $\partial v_i/\partial e_i<0,\ \forall i\in\{R,P\}$ implies that both parties can benefit from compromising. A *social compromise* is a triple $\left(\theta^*,\mathbf{e}^*,\bar{k}\right)$, where θ^* is the agreed tax rate, $\mathbf{e}^*$ is the expected second-stage equilibrium contest effort profile (if negotiations fail), and $\bar{k}$ is the societal norm. The expected equilibrium winning probabilities p_P^*,p_R^* determine the parties' relative bargaining power[31].

4.2. *The Political Compromise Equilibrium*

As a *compromise in the shadow of conflict*, $\left(\theta^*,\mathbf{e}^*,\bar{k}\right)$ can persist if and only if it is *dynamically consistent* and *self-imposed*. Namely, agents' obedience to the social agreement must be their best response strategy every period.

[30] Probably, this is the primary reason for the prevalence of the unrealistic risk-neutrality assumption in the rent-seeking literature (Millner & Pratt, 1991).

[31] For similar modeling, see McDonald & Solow (1981), Svejnar (1986), Alexander (1992), Skaperdas & Gan (1995), Esteban & Sákovics (2002), Skaperdas (2006), and Bayindir-Upmann & Gerber (2003).

Let $b_i\left(\theta,\mathbf{e}^*,\bar{k}\right)=\pi_i\left(\theta^*,\mathbf{e}^*,\bar{k}\right)-v_i\left(\theta,\mathbf{0},\bar{k}\right)$ be contestant i's *excess* (or *dissatisfaction*) function from a compromise $\left(\theta,\mathbf{e}^*,\bar{k}\right)$. If $b_i\left(\theta,\mathbf{e}^*,\bar{k}\right)>0$, contestant i is *dissatisfied*. A social compromise $\left(\theta,\mathbf{e}^*,\bar{k}\right)$ is *individually rational* if $b_i\left(\theta,\mathbf{e}^*,\bar{k}\right)\le 0$, and *stable* if $b_i\left(\theta,\mathbf{e}^*,\bar{k}\right)\le 0,\ \forall i\in\{P,R\}$. Namely, if no contestant i can benefit from deviation by challenging contestant j with an alternative offer $\left(\theta',\mathbf{e}^*,\bar{k}\right)$ $\left(i,j\in\{P,R\},\ i\ne j\right)$. The political *bargaining set* (or *core*) is the set of all stable social compromises,

$$(13)\qquad B=\left\{\left(\theta,\mathbf{e}^*,\bar{k}\right)\middle|\,0\le\theta\le 1,\ b_i\left(\theta,\mathbf{e}^*,\bar{k}\right)\le 0,\ \forall i\in\{P,R\}\right\}.$$

Denote the bargaining set at period t by B_t. The set of all dynamically consistent social compromises is,

$$(14)\qquad \Omega=\left\{\left(\theta,\mathbf{e}^*,\bar{k}\right)\middle|\left(\theta,\mathbf{e}^*,\bar{k}\right)\in B_t,\ \forall t=0,...,\infty\right\}.$$

Theorem 1: *Under common knowledge of rationality* $\Omega\ne\varnothing\Leftrightarrow\varepsilon>0\cap\beta\le p_P^*\ln(2)$.

Theorem 1 states that under common knowledge of rationality, a dynamically consistent social compromise exists if and only if society is not radically egalitarian and the proletariat is sufficiently impatient.

Proof: see appendix[32].

Intuition: Suppose a radical egalitarian proletariat won a contest at period t, and imposed $\theta=1\ \forall t\ge t+1$. Consequently, all sub-economies consolidate into a grand economy that converges immediately to a unique steady-state M, and from that period onwards, each dynasty's capital is k_M and history independent. The elite cannot appease a radical egalitarian proletariat that knows its victory is irreversible since there is nothing to fight for in the radical-egalitarian economy, as no dynasty would have any incentive to confront another dynasty forever. On the other hand, if society tolerates some inequality $(\varepsilon>0)$, a proletariat's victory at period t implies that from period $t+1$ onwards, the economy converges either on the $\hat{k}_{t+1}^{SD}$ trajectory given by (9) or the $\hat{k}_{t+1}^{E}$ trajectory given by (10) towards the original or the modified steady-state equilibria $\hat{P}$ and $\hat{R}$, respectively (see Figure 2 and panel (*b*) in Figure 3).

[32] The proof demonstrates that Theorem 1 is independent of any assumption regarding functions' specification.

Social stratification may be reduced, but not eliminated. More importantly, this result is reversible through a future elite victory. A prudent elite would offer such social settlement from the beginning. If β is sufficiently low and every victory is reversible, the proletariat would accept the elite's offer because getting G_P during the convergence span is preferred over taking the confrontation risk. The contemporary transfer payments and the slower convergence speed are the political insurance premium (or bribe) the elite pays to the proletariat to preserve political stability and its long-run social superiority[33].

Theorem 1 lays the foundation for explaining the phenomena we pointed out in the introduction. A non-radical egalitarian social compromise involving higher salaries, better working conditions, pensions, etc., is reversible and thus achievable peacefully through negotiations because it does not threaten the elites' long-run social superiority[34]. In contrast, a social compromise involving freeing enslaved people or imposing a radical egalitarian redistribution changes the social structure forever, thus being unattainable peacefully.

5. DIRECTOR'S LAW, THE POLITICAL ROLE OF THE MIDDLE CLASS AND CAPITAL MOBILITY

The above analysis almost ignored the political role of the middle class. For visual convenience, I presented the grand economy in Figure 1 as having three steady states, each representing its associated sub-economy. However, the visual comfort comes at a price in the form of a potentially misleading demonstration of the middle class as a zero-dimensional class characterized by the saddle point steady state, M. Moreover, it causes the middle class to look indifferent to redistributive policies and consequently politically neutral. Still, there are at least three reasons to doubt the middle class's zero-dimensionality and political neutrality.

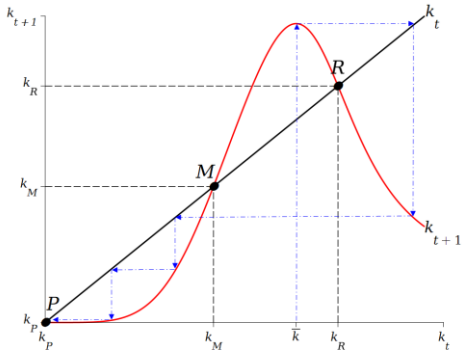
First, the above analysis assumed a triple steady-state economy for convenience. Still, with different calibrations, the model would yield any odd number of equilibria, implying that neither the middle class is necessarily zero-dimensional nor its steady state a saddle point. Secondly, as Spiegler (2013) indicated, agents might misunderstand the system's functioning, be partially informed, or be imperfectly

[33] Acemoglu & Robinson (2001) assumed that a proletariat revolution affects only capital returns distribution, not capital distribution, implying that a proletariat revolution is reversible.

[34] Reversibility does not require lowering salaries explicitly, as they may decay through deliberate inflation.

foresighted amid the dynamic process. Consequently, dynasties' perceived social affiliation may be erroneous for generations. For illustration, consider the confusing convergence path of a dynasty starting with $k_t \in [k_M, \bar{k}$ in the economy simulated in Figure 7. In the beginning, the dynasty's capital-labor ratio increases until it reaches $\bar{k}$. During these periods, agents affiliated with this dynasty might believe the process would continue until the dynasty finally converged toward the elite steady state R. Only when $k_t = \bar{k}$ it starts fluctuating, but it may take some more periods until the dynasty's members realize that it converges towards the poverty trap, P. Needless to add, the elite is incentivized to reinforce these false beliefs of such dummy middle classes as long as possible[35].

Figure 7: A Multi-equilibria Economy



Calibration: $u(c_t) = \frac{c_t^{1-\gamma}}{1-\gamma}$, $A = 3$, $\alpha = 0.7$, $\rho = 4$, $\gamma = 0.1$, $\beta = 0.8$, and $n = 0.05$

Thirdly, if the middle-class' steady-state is a real saddle-point, any random shock could push the middle-class sub-economy towards one of the two stable steady-states. If the middle class coincides with the median voters' group and Hotelling's (1929) *median voter theorem* holds, the middle class possesses a *de-facto* dictatorial power[36]. Consequently, both the proletariat and the elite would seek its political support. Still, the elite has a triple built-in advantage: (a) Dummy middle classes already support the elite, as explained above. (b) It would take a negligible transfer to push the swing middle class away from its saddle-point to converge on a modified transition trajectory toward the elite's steady state, and the elite can afford such transfers easier than the proletariat. (c) The elite can burden these transfers' costs (at least partially)

[35] I mention this point to emphasize the misleading potential of the convenient unifying graph and for the comprehensiveness of the discussion. However, the intergenerational beliefs transformation mechanism is beyond the scope of this article.

[36] To abstract from the complexities associated with democratization, we assume full enfranchisement.

on the proletariat through political manipulations, a phenomenon known as Director's Law as described by Stigler (1970):

> *Public expenditures are made for the primary benefit of the middle classes, and financed with taxes which are borne in considerable part by poor and rich*[37].

Stigler noted that Director introduced this law as an empirical finding without suggesting any theoretical background or explaining how the elite and the middle class manipulate the proletariat to favor self-detrimental redistributive policies, but provided several instructive anecdotes[38]. Numerous studies surveyed by Acemoglu et al. (2015) revealed a positive correlation between democratization and increased government investment in education, most significantly in primary schooling. Of course, primary education may be more needed for the proletariat (at least during transition periods). Still, the authors indicated that this policy might reflect natural and artificial obstacles laid before the proletariat seeking higher education. These findings reminded private philanthropic initiatives at the beginning of the Industrial Revolution, when European and American elites preferred establishing labor-intensive factories rather than investing in the proletariat's human capital. Prominent industrialists like Robert Owen, Titus Salt, and Samuel Greg established *Model Villages* for their workers, including elementary schools (known as *Factory Schools*). These initiatives did not persist due to the public good characteristics of education, and the industrialists demanded the governments enact compulsory education laws (Galor & Moav, 2006; Mokyr & McDermott, 2001). The commonly declared purpose of these inter-class transfer initiatives was to improve the welfare of the poor, but they mainly (and probably exclusively) benefited the middle class[39].

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[37] Director's Law does not necessarily contradict Zinn's (2009) claim that all reforms initiated by the establishment (either republican or democrat) aimed to preserve the social status quo of the rule of the rich.

[38] For example, (*a*) ***raising prices by restricting output***. The official purpose of this policy was to help the poor farm laborers, but its actual beneficiaries were the farm owners, which the poor subsidized through higher prices; (*b*) ***minimum wage.*** The primary beneficiaries of minimum wage laws have been higher-paid workers for whom lower-paid workers are a threatening substitution. The redistribution burden was financed primarily by unemployed workers who lost their jobs and low-income consumers who paid higher prices for low-wage products. (*c*) ***regressive social security systems.*** Without a doubt, Stigler's most striking example. From a life-cycle perspective, social security taxes more individuals who begin work earlier than those who begin work after higher schooling and more families in which the wife works than families in which she does not. On the other hand, social security pays less to those who die early than those who live longer.

[39] In some of his novels, Charles Dickens hinted that these industrialists were motivated by pure philanthropy, economic efficiency, and the need for skillful workers. (Nowadays, one would add tax deductions). This analysis

To illustrate the Director's Law effect, assume for simplicity that the elite proposes a moderate egalitarian system financed *entirely* by the elite that subsidizes the proletariat and the middle class. The economy's modified transition equation is,

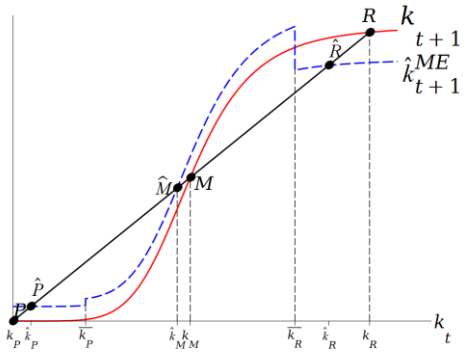
$$\hat{k}_{t+1}^{ME} = \begin{cases} k_{t+1} + \delta\left(\bar{k}_P - k_{t+1}\right) & k_{t+1} \le \bar{k}_P \\ k_{t+1} + \delta\,\varepsilon & \bar{k}_P < k_{t+1} < \bar{k}_R \\ k_{t+1} - \theta\left(k_{t+1} - \bar{k}_R\right) & k_{t+1} \ge \bar{k}_R \end{cases} \tag{15}$$

Figure 8 simulates (15) and demonstrates that while the elite bears the entire redistribution burden, the proletariat's benefit is negligible. The primary beneficiaries are middle-class dynasties that benefit twice. First, they receive a periodical subsidy of $\delta\varepsilon$ during the convergence process. Second, and more importantly, due to the leftward saddle point's shift from M to $\hat{M}$, all dynasties starting with $k_t > \hat{k}_M$ converge on the modified $\hat{k}_{t+1}^{ME}$ trajectory towards the modified elite steady-state equilibrium, $\hat{R}$. In other words, in return for a contemporary concession of $\theta\left(k_{t+1} - \bar{k}_R\right)$ during the convergence process followed by a permanent concession of $k_R - \hat{k}_R$ and a slight reduction in social stratification, the elite buys political calm and median voter middle-class support. It is no wonder such a scheme is approved even if the median voter theorem does not hold since, as mentioned above, both middle-classes and the proletariat would support it. The middle class because it opens their opportunities towards the rich steady-state; the proletariat because it provides them with instant welfare increase and pretends to reduce social stratification[40].

is positivist and abstract of any moral evaluation of manifested altruism or philanthropy. It is also essential to remember that Director's law does not preclude sincere generosity motivated by pure altruism. Thus, other studies surveyed by Acemoglu et al. (2015) showed that democracies tilt expenditures towards tertiary education, and philanthropists like Andrew Carnegie and John Rockefeller, who established universities and contributed to public libraries, are not contradictory. They can even support Director's Law if, for example, they reflect the differences between economies at various levels of development. This conjecture requires, of course, further research. For analyses of mixed motivated altruism, see, for example, Stark (1999) and Schwarz (2006).

[40] Probably, the masses were not sophisticated enough to understand these programs' implications, while more sober proletariat leaders usually accused the middle classes (or the *bourgeoisie*) of collaboration with the elites.

Figure 8: The Effect of Director's Law



Calibration: $A = 5,\ \rho = 5,\ \alpha = \theta^{*} = p_{P}^{*} = 0.5,$ and $n = 0.1$, and $\varepsilon = 0.75k_{M}$ for visibility.

Finally, diminishing marginal returns on capital should cause capital flows from rich to poor sub-economies and the grand economy to consolidate with a unique steady-state, eliminating social stratification. Notwithstanding, there are several substantial obstacles to such capital flows, e.g., capital market imperfections (Galor & Zeira, 1993), corruption (Rose-Ackerman & Palifka, 2016), and more. Director's Law indicates that some of these obstacles are not glitches. Elites face a severe dilemma. On the one hand, they seek to calm the political tension invoked by social stratification, while on the other hand, they are reluctant to foster potential political competitors. Director's Law illuminates the elites' escape lane through seduction strategies that divert public investments in poor dynasties to paths that gain both proletariat and middle-class support while preserving long-run social stratification.

6. Summary and Discussion

This article studied two phenomena: (*a*) the ability of certain classes to achieve specific social rights peacefully while others could achieve nothing without using force; (*b*) the counterintuitive phenomenon of elites' political support for redistributive policies, apparently contrary to their interests. In a nutshell, I showed that social compromises are politically applicable if they are reversible and do not threaten the elite's socioeconomic superiority, and elites' support for redistribution is a seduction strategy to calm political unrest.

I described society as a political confederation of sub-economies, each populated by dynasties affiliated with either the proletariat, the middle class, or the elite, according to their economic horizon determined by their initial capital-labor ratio. For visual convenience, however, I used a triple-equilibria version of the overlapping generations' model, associating each steady state with a corresponding sub-economy.

The analysis distinguished between *economic* and *political* stationary equilibria. An economic separating steady-state is not necessarily compatible with a political equilibrium. Economically polarized polities are doomed to political instability and redistribution demands raised by the proletariat against the elite, accompanied by threats to use violence in case of refusal. I modeled the political process as a recursive *biform contest*, a two-stage game whose first stage is a bargaining game and the second is a contest in which contestants' winning probability depends on relative efforts. The classes bargain over a redistributive system's tax rate in the first stage, and if negotiations fail, they engage in a second-stage contest. Since contests' results are contingent and exertion of efforts incurs disutility to all contestants, even risk-neutral contestants would benefit from a compromise, conditional on being *self-imposed* and *dynamically consistent*.

The analysis classified societies according to their attitude toward inequality: *radical egalitarian,* which seeks to eliminate disparities; *moderate egalitarian*, which tolerates some inequality; and *social-democratic*, which recognizes the morality of honestly accumulated wealth. The egalitarian redistributive scheme eliminates steady-state social stratification. In contrast, social-democratic systems improve the proletariat welfare temporarily during the convergence process but have a limited impact on the long-run steady state. The main result, Theorem 1, postulates that under common knowledge of rationality, a dynamically consistent social compromise exists if and only if it is reversible, non-radical egalitarian, and the proletariat is sufficiently impatient. However, comparing the relative burdens induced by different redistributive schemes on the elite is ambiguous. The elite's choice between a social-democratic and a moderate egalitarian scheme depends on society's tolerance degree of inequality and is thus unpredictable theoretically.

Theorem 1 lays the groundwork for answering our questions. Enslaved people had to fight bitterly for their freedom because the abolishment of slavery was irreversible[41]. In contrast, workers achieved significant rights through negotiations (although under the shadow of conflict) because gradual improvements in workers'

[41] It is noteworthy that while some of the founders of the United States (e.g., Washington, Jefferson, Madison, and others) loudly spoke against slavery, they were major enslavers themselves. Paying lip service is also a form of seduction strategy.

rights are reversible and pose limitable threats to elites' political supremacy. This insight is consistent with Zinn's (2009) observation that although numerous strikes in the United States were suppressed violently (including killing striking workers), labor unions were decriminalized when the elites realized that they did not threaten their socioeconomic superiority. It also explains social-democratic parties' preferences toward transfer payments, contrary to the common wisdom: *Give a person a fish, and you feed him for a day, teach a person to fish, and you feed him for a lifetime*[42]. The same incentives that cause the poor to accept the fish instead of insisting on rods drive the impatient proletariat to adopt the social-democratic redistributive programs that enhance the proletariat's dependence on the elite.

Finally, I analyzed the political role of the alleged politically neutral middle class. I argued that the middle class is not necessarily zero-dimensional, and its convergence horizon might be challenging to predict in real time. Consequently, the middle class might falsely feel associated with the wrong societal class during many periods. Then, I provided a theoretical basis for the empirical *Director's Law*, which postulated that, contrary to their declared purposes, welfare systems and public expenditures (as well as some private philanthropist initiatives) benefit the middle class primarily at the elite's and proletariat's expense. I argued that beyond all typical and inevitable bureaucratic inefficiencies, Director's Law reflects a seduction strategy to preserve the elite's steady-state socioeconomic superiority and provides an additional explanation for the absence of inter-class capital flows that could eliminate social stratification. Elites seek to calm social tensions, but are reluctant to foster potential political competitors. However, I cannot negate a mix of altruism and strategic motives in the elite's considerations. Further research is required to examine whether this elites' behavior is expected only in zero-sum-game environments or in environments that enable Pareto-improving redistributions too.

7. APPENDIX

Proof of Proposition 1:

By definition:

[42] The origin of this proverb is controversial. (Chinese, Italian, Native American, Indian, Lao-Tzu, Mao Zedong, etc.). Its basic idea appears in an ancient Jewish commentary to the bible from the second century AC (*Safra* on Leviticus, 25, 35), quoted by Maimonides *(Mishne Tora, Laws of Charity*, Ch. 10 §7).

(16) $$L_R^{SD} = \theta^* S_R^{SD} = \theta^* \int_{k_M}^{k_R} \Delta_{t+1}^{SD} dk_t = -\frac{\theta^*}{2}\left(k_R - k_M\right)\left(1 - 2k_t + k_M + k_R\right)$$

and

(17) $$L_R^E = \theta^* S_R^E = \int_{k_{eR}}^{k_R} \Delta_{t+1}^E dk_t = \theta^*\left(1 + k_M - k_t + \varepsilon\right)\left(k_M + \varepsilon - k_R\right)$$

Subtracting (17) from (16) yields,

(18) $$\Delta L_{E,SD} = L_R^E - L_R^{SD} = \frac{\theta^*}{2}\left[2\varepsilon\left(\varepsilon + 2k_M - k_R - k_{t+1}\right) + \left(k_R - k_M\right)^2\right].$$

Clearly, $\varepsilon = 0 \Rightarrow \Delta L_{E,SD} = \frac{1}{2}\theta^*\left(k_R - k_M\right)^2 > 0$, implying that a radical egalitarian redistribution induces a higher burden on the elite than a social-democratic redistribution. However, when society tolerates some inequality $(\varepsilon > 0)$, the relative burden is ambiguous. ■

Proof of Theorem 1:

The proof relies on six simple lemmas.

Lemma 1: $\Omega \neq \varnothing$ *if and only if contests' results are reversible within a finite time horizon.*

Proof: By definition, risk-averse contestants in a single-shot game prefer compromising on the expected contest result $\left(\theta^*, \mathbf{e}^*, \bar{k}\right)$ rather than engaging in a risky contest. However, in a recursive model, even a risk-averter but sufficiently patient proletariat may select repeatedly contesting if it takes a single victory to ensure a better yet *irreversible* steady-state with a permanent capital level $\hat{k}_P > k_P$ within a finite time horizon. On the other hand, if a proletariat victory is reversible within a finite time horizon, the elite can afford a few losses, while waiting for a future elite's win to restore the original convergence trajectory. It follows that a dynamically consistent social compromise exists if and only if contests' results are reversible. □

Lemma 2: *If contests are played recursively, a contestant's victory is ensured within a finite time horizon.*

Proof: Denote the minimal number of rounds required to ensure a victory of contestant $i \in \{P, R\}$ in a recursive contests process by z_i. By our assumption, there is no effort constraint, thus p_i is history-independent, implying that a series of contests is a Bernoulli experiment and z_i is geometrically distributed with $E\left(z_i\right) = \frac{1}{p_i} < \infty$. □

Lemma 3: *A proletariat victory in a contest is reversible if and only if* $\varepsilon > 0$.

Proof: Suppose that $\varepsilon = 0$. A proletariat's victory in a radically egalitarian society at any period t, implies $\theta = 1$ and consequently $k_t = k_M,\ \forall t \geq t+1$. The grand economy immediately converges towards a single middle-class steady-state, eliminating social stratification forever. In other words, from period $t+1$ onwards $\Delta \hat{k}_{t+}^{EG} = 0$, thus $\theta = \delta = 0$, implying that from now on, no dynasty is incentivized to confront any more forever because there is nothing to fight for. Therefore, if $\varepsilon = 0$, a proletariat victory is irreversible[43]. On the other hand, $\varepsilon > 0$ implies that following a period t's proletariat victory, from period $t+1$ onwards $\theta < 1$, and the economy converges on the modified trajectory $\hat{k}_{t+1}^{E}$ given by (10) towards a modified steady-state that preserves (a reduced) social stratification. More importantly, the elite can still reverse this result and set $\theta = 0$ by winning a future contest. It follows that a proletariat victory in a contest is reversible if and only if $\varepsilon > 0$. □

Lemma 4: *Under common knowledge of rationality,* $\left(\theta, \mathbf{e}^*, \bar{k}\right) \in B \Leftrightarrow \theta = p_P^*$.

Proof: By definition $b_i\left(p_P^*, \mathbf{e}^*, \bar{k}\right) = 0,\ i, j \in \{R, P\}$, implying $\theta > p_P^* \Rightarrow b_R\left(\theta, \mathbf{e}^*, \bar{k}\right) > 0$ and $\theta < p_P^* \Rightarrow b_P\left(\theta, \mathbf{0}, \bar{k}\right) > 0$. It follows that $\left(\theta, \mathbf{e}^*, \bar{k}\right) \in B \Leftrightarrow \theta = p_P^*$. □

Lemma 5: $\theta^* = p_P^*\left(\mathbf{e}^*\right)$.

Proof: By our assumptions, v_i exhibits CARA. Hence a unique pure strategy Nash equilibrium exists in this contest (Skaperdas & Gan, 1995).

By our assumptions, if the elite wins $\theta = 0$, while if the proletariat wins $\theta = 1$, implying that the expected tax rate is $\theta^* = p_P^* \times 1 + p_R^* \times 0 = p_P^*$[44]. □

Lemma 6: *A social compromise is available if and only if* $\beta \leq p_P^* \ln(2)$.

Proof: Assume $\varepsilon > 0$, and consider the social compromise $\left(p_P^*, \mathbf{e}^*, k_t\right)$.

Suppose the proletariat wins a confrontation in a non-radically egalitarian society. In that case, its sub-economy would converge towards $\bar{k}_P$, implying that from the

[43] The current steady-state can still be broken if one dynasty steals from another. However, thefts and robberies are excluded in this model except through contests or taxation.

[44] If the stakes of the elite and the proletariat are of the same size, $e_P^* = e_R^*$ (Skaperdas & Gan, 1995), implying that if p_i is symmetric $e_p = e_R \Leftrightarrow p_P = p_R$, then $\theta^* = p_P^* = p_R^* = \frac{1}{2}$. (See footnote 11).

winning period onwards, its periodical gain from winning is $g = \bar{k}_P - k_P$. Since it takes $E(z_P)$ periods to win a contest on average, the discounted payoff is $\int_{E(z_P)}^{\infty} e^{-\beta t} g dt$. On the other hand, the expected periodical loss from rejecting a social compromise offer and losing confrontations repeatedly until the first victory is $\int_0^{E(z_P)} e^{-\beta t} g dt$. It follows that the net gain of the proletariat from performing this Bernoulli experiment is:

$$(19) \qquad \mathrm{NG}_P = \int_{E(z_P)}^{\infty} e^{-\beta t} g dt - \int_0^{E(z_P)} e^{-\beta t} g dt = \tfrac{1}{\beta} g\left(2e^{-\beta E(z_P)} - 1\right) \geq 0 \Leftrightarrow \beta \leq \tfrac{1}{E(z_P)} \ln(2).$$

Inserting $E(z_P) = \frac{1}{p_P}$ (see proof of Lemma 2) into (19) completes the proof. □

Combining these six lemmas completes the proof of the theorem. ■

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