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The rationality-allocational reasons for limiting the size of financial firms and taxing financial transactions

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Abstract: After the recent financial crisis, many types of government policies have been debated as possible remedies, but most of them are still controversial. This paper considers two: (A) limiting the growth of financial firms; (B) taxing financial transactions. It strengthens the arguments for both by means of the recently proposed rationality-allocation analysis, which broadens the view of financial markets by supplementing their task of allocating investment with the one of selecting the investors. To be socially efficient, this selection must (a) keep itself going, (b) use the right selection criteria. Recognizing financial markets irreplaceable, but prone to fail in both, the analysis finds reasonably dimensioned (A) helpful against failures in (a), and (B) against failures in (b).

Outline

I – THE QUESTIONS ADDRESSED AND THE ANALYSIS EMPLOYED

The recent financial crises have increased interest in public policies that could prevent their recurrence. While virtually all imaginable types of such policies have been considered and a great number of arguments about them have been produced, most of them are still highly controversial: respectable arguments appear possible to find both for and against. New arguments, and likely also new ways of searching for them, are therefore still needed.

The aim of this paper is to help satisfy this need. Using the recently proposed rationality-allocation analysis (Pelikan, 1997, 2010), it produces new arguments for two policies: (A) limiting the growth of financial firms; and (B) taxing financial transactions. It is organized as follows. Section II recapitulates the main principles and results of this analysis. Section III brings to light the rationality-allocational roles of the financial sector. Section IV presents the key finding about financial markets: prone to develop serious failures, yet irreplaceable. Examining the potential of government to help, Section V finds several often proposed policies most likely harmful, but both (A) and (B) potentially helpful. Section VI considers why government may fail to actualize this potential and concludes by indicating how rationality-allocation analysis can help.

II – RATIONALITY-ALLOCATION ANALYSIS: A RECAPITULATION

II.1 The notion of rationality

Economists have been using the term "rationality" in different meanings, most of which can be classified into two categories: (I) a broad meaning, denoting any purposeful or goal-seeking behavior, regardless of its cognitive limitations, and (II) a narrow meaning, referring to these limitations. For neoclassical economists, (I) has the advantage of saving their perfect rationality assumption: it allows everyone to be assumed perfectly optimizing by doing one's *subjective* best under the constraint of one's cognitive limitations, however severe these might be. In contrast, (II) makes it necessary to recognize that human rationality is bounded, and that, therefore, people often behave, in terms of their own preferences, in *objectively* sub-optimal ways.

While economists may appear free to choose between (I) and (II), this freedom is limited to one-person problems. For problems involving several persons, and thus also for all policy issues, meaning (I) is unwise. Although everyone might still be assumed to do his or her *subjective* best, this would miss the often crucial fact that for many economic problems,

the "best" of some persons may be much better, or much worse, than the "best" of others. For multipersonal problems, only meaning (II) is therefore fruitful.

In this meaning, "rationality" can be defined as *the cognitive abilities, or the competence, or the intelligence*, of human brains for solving different economic problems – understood, as usual, as *the problems of how to allocate and use given scarce resources to obtain the best feasible outcomes in terms of given preferences*. The neoclassical perfect-rationality-assumption must therefore be abandoned and – following Simon (1955, 1979), Kahneman and Tversky (e.g., 2000), and a rapidly growing number of today's economists – human rationality must be recognized bounded.

But, to properly deal with policy issues, analysis must take one more step: recognize that human rationality is not only bounded, but moreover unequally so: more for some individuals than for others. This step, which is the main novelty of the proposed analysis, ranges rationality among the scarce resources that pose the problem of their efficient allocation in society. But – as shown by means of an agents-based computational model in Pelikan (1997, 2000) and verbally explained in Pelikan (2010) – this resource is very special. As rationality plays a key role in the decisions on allocation of all resources, it also plays a key role in the decisions on allocation of itself. This complicates its allocation by what Hofstadter (1979) calls "tangled hierarchies," which put it, for reasons which appear related to Gödel's impossibility theorem, outside the reach of straightforward mathematical analysis.

Three features of unequally bounded rationality are here important to keep in mind. First, it differs from available information that is possible to observe or communicate: it includes the abilities to perceive, understand and use such information, but is not the information itself. It is in how the same available information is perceived and exploited that some of the most important differences in rationality bounds often come to light. Rationality asymmetries are thus not the same as information asymmetries.

Second, rationality is a heterogeneous resource which may be classified into different sorts, relevant to different sorts of economic problems – for instance, the rationality relevant to risk-investing may be only weakly correlated with the rationality relevant to organizing and managing a firm. Rationality differences between individuals are therefore not limited to overall superiority or inferiority, but different individuals may have comparative advantages in different sorts.

Third, while rationality is not directly communicable, it may be improved like a kind of human capital by learning from education and/or experience – although, and this is often forgotten, under the constraint of the available learning abilities, or talents. While an

individual's actual rationality may thus substantially differ from the potential one that he or she would be able to acquire in ideal learning environments, this does not imply any convergence towards rationality equality. Individuals also differ in learning talents, so that even potential rationality is unequally bounded.

II.2 – The process of rationality-allocation

The tangled hierarchies make rationality-allocation difficult to grasp in its entirety. So far only a few rough results have been obtained. The first is that an economy's production side and its final consumption side differ in the rationality levels that raise the greatest problems. On the latter side, this is the lowest level: the greatest problem is there how to prevent the least rational consumers from causing harm to themselves in terms of their own preferences, and/or to others through the negative spillover effects that their little-rational consumption may, and often do, have. On the production side, this is the highest available rationality: the greatest problem is there how to discover and select some of the relevantly most rational individuals for the top jobs of entrepreneurs and investors, while at the same time preventing these jobs from growing more difficult that what the selected individuals can handle without causing socially costly competence-difficulty gaps (in the sense of Heiner, 1983). As the issue of financial regulations mostly concerns this side, it is to it that this paper will be limited. What is important to keep in mind about it can be summarized in six points.

P1: Rationality-allocation proceeds by combining job-designing with job-assigning (matching). Its outcome is a certain network of markets, firms and government agencies of different scope and sizes, containing differently difficult jobs assigned to differently rational individuals. As opposed to the usually studied resource-allocation, which takes place within a given network, rationality-allocation is what forms and reforms this network.

P2: To be statically efficient, the network must contain firms that are as large as to maximize the economies of scale and minimize the transaction costs – but, and this is the main novelty, under the constraint of available relevant rationality. The firms must not be larger or more diversified – in other words, more difficult to organize and manage – than what the individuals that can be selected for leading them can handle without causing losses from competence-difficulty gaps.

P3: To realize such an efficient network, rationality-allocation must be able to find, select and actually assign to the leading jobs some of such highly rational individuals, while keeping the design of these jobs adjusted to the actual results of the job-assigning. If some of the actually selected and to top jobs assigned individuals do not possess the required

rationality, rationality-allocation must replace them by individuals of higher relevant rationality, or simplify their jobs by reducing the size of their firms, or both. Rationality-allocation thus implies a limit to which the potential gains from economies of scale and savings on transaction costs by large firms can be actualized.

P4: To be adaptively efficient, rationality-allocation must keep the network adjusted to changing supply of relevant rationality and changing environments– for instance, when new highly rational individuals are appearing and old ones are declining, while new technologies demand different sorts of rationality than old ones. This implies yet another, more severe constraint on the sizes of firms. Not to hinder the new entries and exists that the needed adjustments may require, none of the firms, including banks, must be allowed to grow too big to fail – that is, so systematically important that forcing taxpayers to pay its possible losses becomes less socially costly than letting it exit. This means that more of the potential gains from economies of scale and savings on transaction costs may have to be sacrificed. Hardly any such savings can justify allowing a firm to grow that big.

P5: There is no straightforward method for rationality-allocation which could directly lead to an efficiently designed and assigned network. The main obstacle is that people do not reliably know the rationality of anyone, not even of themselves. Their knowledge of different rationality endowments, including their own, is only imperfect: the more imperfect, the less rational they are. In consequence, rationality-allocation cannot avoid some trial-and-error searches, involving a variety of trials, correction or elimination of the likely many errors, and selection and retention of the typically rare successes.

P6: All this puts in the center of rationality-allocation the selection processes by which differently rational individuals are promoted to, or demoted from, differently difficult jobs, and the jobs are approved of, allowed to be expanded, or forced to be simplified or abolished. A key role in shaping this selection is played by the prevailing institutional rules, both formal and informal. The formal rules are the main instruments by which the selection may be influenced, positively or negatively, by policies.[1]

II.3 – Rationality-allocation analysis: four main results

Although the results obtained are only rough, they bring to light some of the most important merits and demerits of different institutional rules that standard analysis is unable to see.

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[1] The term "institutional rules" denotes here the "rules-of-the-game," to which North (1990) suggested to reduce the meaning of the term "institutions." But this suggestion has not been sufficiently widely followed. Many economists continue to use this term in other meanings, which may cause confusion. In financial economics, instead of denoting rules, this term most often refers to large banks and other large financial *organizations*.

Formally deduced from a simple agents-based computational model in Pelikan (1997, 2000) and verbally justified in Pelikan (2010), the four main ones may be summarized as follows:

R1: After a limited initial period, market competition has the *potential* vastly to outperform government in the selection of entrepreneurs of high rationality relevant to the organization and management of production. While the potential of market selection is to converge to selecting some of the relevantly best, government is not very likely to select much better than a decent average, with no significant improvement over time.

R2: The potential superiority is greater for product markets coupled with financial markets than for product markets alone. The reason is that the slowly working selection by product markets – where future winners may lack capital to grow, while future losers may continue to waste the gains of their past successes – may greatly be accelerated by choices made by relevantly rational investors. Markets, and more specifically financial markets, have the *potential* vastly to outperform government also in the selection of such investors.

R3: To actualize the selection potential of both product and financial markets, market competition needs suitable institutional rules. These are both informal – such as socio-cultural norms of honesty and trust – and formal – in particular a legal framework that provides maximum freedom for, and protection of, productive entrepreneurship and fundamental investing. It is this framework that government has the *potential* to provide.

The problem is that just as markets may fail to actualize their potential, government may fail to actualize its. Instead of the right rules, it may provide the wrong rules or – which may be as bad – no rules. In both these cases the economy will underperform and possibly fall into a *structural economic* crisis.

R4: Even with the most suitable institutional rules which allow it to attain an optimal economic growth, market competition poses another difficult problem: it leads to a high growth of income and wealth inequalities. Although in favorable environments the economic growth may allow even the least rational individuals to grow richer in absolute terms, their more rational fellow citizens will keep growing relatively richer and richer.

The problem then is that this process will sooner or later conflict with what appears to be one of the inborn social instincts of Homo sapiens: a limited tolerance to inequalities – perhaps most clearly brought to light in experiments with the ultimatum game. The losers appear ready to spoil the entire game, even if it means harming themselves, when this limit is exceeded. An optimally growing pure market economy, without some inequality-mitigating institutional solutions, is therefore bound sooner or later to exceed this limit and consequently fall into a *political* crisis.

Note that in the classical Left-Right ideological conflict, these results will not fully satisfy either side. While they sharply discard all forms of socialism, only R1 and R2 fully agree with classical liberalism. R3 may be regarded as ordo-liberal, and R4 is worrisome: it implies that a pure market economy is not evolutionarily sustainable.

II.4 – A note on sources of inspiration and links to established fields of economic research

While rationality-allocation analysis may appear rather exotic, in fact it is only one short step away from five highly respected fields of economic research: (i) the economics of bounded rationality pioneered by Simon (1955, 1978); (ii) the studies of markers as selection devices following Alchian (1950) and Winter (1971); (iii) the theory of economic development by entrepreneurship and "creative destruction" elaborated by Schumpeter (1912/34); (iv) the theory of orders of rules generating orders of actions proposed by Hayek (1973); and (v) the new institutional economics following North (1990). Note that the high respect to these fields can be seen confirmed by the Prize in Economics in Memory of Alfred Nobel obtained for the work on them by Hayek, Simon, and North.

The short steps can be summarized as follows. The one from (i) is the recognition that human rationality is not only bounded, but moreover unequally so across individuals. The step from (ii) is extending the view of market selection from product markets to financial markets, and recognizing that this selection, far from "natural," is importantly shaped by the prevailing institutional rules. The step from (iii) is similar: recognizing entrepreneurship and "creative destruction" to be shaped by formal and informal institutional rules, and paying extra attention to their working in the financial sector. The step from (iv) is recognizing that any effects of rules on actions must be realized by some rule-respectig actors, including above all entrepreneurs and investors, to whom Hayek pays surprisingly little attention. The step from (v) is broadening the inquiry into the effects of institutional rules from those on transaction costs and incentive structures to the ones on selection processes.

Interestingly, while rationality-allocation analysis is so close to so many interesting fields of economics, these fields have so far had only little contact with each other. The economic profession appears still far from the adult state in which new ideas, regardless of their origins, would be interconnected and incorporated into a common pool of knowledge, and not used for creating separate, often ideologically biased chapels. Due to its inter-field links, rationality-allocation analysis thus also offers help to those economists who strive to develop their profession towards such an ideologically neutral unification. But to enter into the detail of this help is not the task of this paper.

III – THE RATIONALITY-ALLOCATIONAL TASKS OF THE FINANCIAL SECTOR

III.1 – The external task: helping product markets select relevantly rational producers

As noted, the main problem of rationality-allocation on the production side is the selection of relevantly most rational producers. To be efficient, this selection must allow entrepreneurs of high relevant rationality to enter and their enterprises to grow, while forcing enterprises that are organized and managed with low relevant rationality to shrink or exit. That this is what competition on product markets has the potential to achieve – in addition to its more usually studied, but arguably less important achievements in the setting of efficient prices – was shown in the above-mentioned works by Alchian and Winter. That this potential is comparatively much higher than the one of any selection conducted by government was added by the above-mentioned R1 of rationality-allocation analysis.

But this result only implies that product markets selection cannot be replaced by government selection without harming the economy, and not that it is in any sense perfect. In fact, as its critics have been rightfully pointing out, it suffers from several imperfections, of which a particularly annoying one is its double slowness. It is too slow in allowing future winners, if they are limited to self-financing, to enter and grow to an efficient size. And it is too slow in forcing future losers, if they can prolong their agony by wasting the results of their past successes, to shrink and exit.

The remedy is easy to describe: accelerate both the growth of future winners and the exit of future losers by allocating additional capital to the former and taking it away from the latter. The main rationality-allocational task of the financial sector may simply be described as providing this remedy. It appears suitable to denote it as "external," in the sense that it is part of what the financial sector should do outside itself, for the economy's non-financial production. This is what is usually called "fundamental investing."

But the remedy is much more difficult to realize. That such a double acceleration would be socially beneficial is widely recognized, and providing it has also been a policy objective of many governments. But when they tried to provide it themselves by different forms of selective industrial policies, the result was often the opposite. Instead of supporting future winners, they only temporarily bailed out future losers. Far from accelerating the product-markets selection, they thus obstructed it and made it even slower.

The obvious implication is that not everyone who wants to help this selection can effectively do so. The question is: who can?

III.2 – The internal task: selecting relevantly rational investors

It is this question that leads to the second rationality-allocational task of the financial sector, suitably denoted as "internal": in order effectively to help the selection of producers, this sector must select investors of sufficiently high relevant rationality not to do more harm than good. Intuitively, one may think of the financial sector as a kind of diffuse "planning bureau" that, on top of helping to plan production, must also select sufficiently competent "planners."

Note that the perfect-rationality assumption of standard analysis hides both these tasks. Under it only incentives matter, while no selection of either entrepreneurs or investors is needed. If everyone is equally perfectly rational – that is, equally able optimally to use available information – it does not matter who does what.

To recognize human rationality unequally bounded is indeed essential for fully grasping the importance of selection of economic agents in general and the selection of investors in particular. The effect of this selection is double: in addition to the one on the selection of producers, it influences the total risks that the economy is facing. While in standard analysis these risks are assumed objectively given, and the financial sector is seen not to do more than spread them, rationality-allocation analysis recognizes them to be partly subjective, depending on the rationality of the investors: for relevantly more rational investors they are lower than for less rational ones. In addition to spreading the risks, the financial sector is thus disclosed also to have impact on their magnitude.

There are two necessary conditions that the selection of investors must meet to make and keep its outcomes as efficient as possible:

NC1: The selection must keep itself going by maintaining the costs of entry and exit at acceptable levels, and thus preventing the financial sector from solidifying in a possibly once efficient but with time increasingly inefficient state.

NC2: The selection must use the right criteria, selecting and promoting investors for the socially most valuable rationality relevant to the external and internal tasks of the financial sector, and not for another sort of rationality, relevant to less valuable financial transactions.

If NC1 is not met, newly appearing highly rational investors will be unable to enter, and their high rationality will thus be wasted, while old investors, whose rationality is relatively or absolutely declining, will be able to keep their top jobs.

If NC2 is not met, highly rational fundamental investors will be crowded out from top positions by investors of high rationality relevant to socially less valuable, and possibly even harmful, financial transactions, such as trend-trading, high-frequency trading, noise-creating-

and-exploiting, and managerial rent-extracting.

The question then is: how should the financial sector be organized, and by what institutional rules should the selection of the investors be shaped, to meet both NC1 and NC2?

IV – FINANCIAL MARKETS AS RATIONALITY-ALLOCATION DEVICES: WHY THEY MAY FAIL BUT ARE NEVERTHELESS NEEDED

IV.1 – Conceptual clarifications

To avoid confusion, it is important to clarify the present meaning of the word "failure," and the criteria for distinguishing market failures from government failures.

The word "failure" has been used in two different meanings: (i) failure to perform optimally, and (ii) failure to perform satisfactorily, without a serious breakdown. Theoretical economists were for a long time using meaning (i): a market was said to fail if its outcomes were not perfectly optimal. But to use this meaning is unwise for two reasons. First, it needs a meaningful and generally accepted definition of social optimum, which is difficult, if not impossible, to obtain. Second, it gives the illusion of what Demsetz (1969) called "nirvana fallacy," which may mislead policymakers to reject a suboptimal, but nevertheless satisfactorily working market when all of its feasible alternatives are even more suboptimal.

It is therefore the wiser meaning (ii) that is adopted here. Markets and governments will be said to fail if their working leads to what is widely perceived as a crisis. Note that this disposes of the need to have the difficult to obtain definition of social optimum; to agree on what is a crisis is usually much easier.

How to distinguish market failures from government failures is a controversial issue, which many economists approach with a priori ideological preferences: some prefer to see only failing markets, which an assumedly failure-free government could perfectly correct or replace, while others like to deny all possibilities that markets might fail, unless forced to do so by some unwise government policies.

The present answer avoids both these extremes. It can be summarized in three points: (i) both markets and governments may fail; (ii) many market failures may be amplified or even caused by mistaken government policies, but not all: many markets, and especially financial ones, may develop serious failures of their own, even when entirely left alone by government; (iii) government has a certain potential to alleviate market failures, but may fail to do so, and that in two ways: by doing the wrong things, or by doing nothing.

Concerning financial markets, however, there is an important qualification that must

be kept in mind. None of their failures can justify their abolishment and transfer of their tasks to politicians, public servants, or obligatory cooperatives. As implied by R2, this would make the situation even worse, especially in the long run. Financial markets must therefore be recognized irreplaceable, and the search for remedies must be limited to the ones that could alleviate their failures while fully respecting their existence.

Three questions now remain to be answered: (1) How and why can financial markets fail? (2) How can government alleviate their failures? (3) How and why can government fail?

IV.2 – Two rationality-allocational failures of financial markets

As can be logically deduced and empirically illustrated, financial markets may suffer from several kinds of failures, but only two will be considered here: the one to meet NC1; and the one to meet NC2. It is easy to see that both can appear and develop even if the market participants are fully free to act, without any government interference. Although some government policies may aggravate them, they both basically stem from intrinsic properties of the markets and the market participants.

An important cause of the failure to meet NC1 is excessive growth of successful financial firms. If they can grow so much that they become "too big to fail," they can impair the future selection of the investors, and thus solidify the financial sector in a state that may be momentarily efficient, but is likely to grow increasingly inefficient with time.

Interestingly, as opposed to "too big" producers, which mainly hinder new entries of others, "too big" financial firms mainly hinder the exit of themselves. As is now too well known, the exit of such a firm can become so socially costly that bailing it out with taxpayers' money may persuasively be argued to be the least bad policy.

Rationality-allocation analysis sharply objects for two reasons.[2] First, such bailing out wastes valuable results of past selection: instead of being rightfully demoted, the probably inadequately rational losers are allowed to keep their highly paid top jobs. Second, it creates moral hazard for the future: it gives the managers of financial firms extra incentives to make their firms overgrow to such a "too big to fail" size.

To accord the "systematically important" status to such firms, as is now often proposed to do, can be compared to according the tenure in the first league to a few currently best playing clubs, regardless of how poorly they might play in the future. One may also think of the computer industry in the 1970's: if IBM was then accorded the status of

[2] A parallel argument with interesting empirical examples is in Harford (2011), especially in Chapter 6 on preventing financial meltdowns.

"systematically important producer of computers," we would have few, if any, laptops today.

Although government may thus aggravate this market failure, note well that it need not cause it. Managers are often motivated to over-expand the firms they control, and market competition is not always strong enough to stop them. The reason is that its beneficial self-correcting feedback is mainly *functional*, keeping a check on price-setting on *given* competitive markets, but much less *organizational*. If firms are free to grow, associate, merge and acquire each other, it is easy logically to deduce and empirically to illustrate that market competition has strong tendencies to self-destruct all by itself.

The failure of financial markets to meet NC2 is mainly due to the rich variety of opportunities for winning high payoffs that they can offer if the freedom of voluntary contracting is unlimited. The problem is that fundamental investing, the socially most valuable external task of the financial sector, is only one opportunity among many – such as the above-mentioned trend-trading, noise-causing-and-exploiting, rent-seeking, and asset-stripping. Recognizing human rationality unequally bounded moreover brings to light the many opportunities for the more rational traders to cheat the less rational ones, which the standard perfect-rationality assumption keeps hidden.

The failure to meet NC2 is the more serious the more it is possible to gain in other, less socially valuable ways than by fundamental investing. Promises of larger gains in such ways cause individual incentives to diverge from social efficiency, which allows this market failure to be understood as a special case of the classical public-goods market failure.

But this failure also has other serious consequences. The great variety of socially less valuable but individually more profitable financial transactions, which little regulated financial markets allow to take place, not only crowd out fundamental investing, but moreover exaggeratedly expand the entire financial sector. Many of its observers are now convinced that in most of the developed economies this sector has grown too big, far bigger than what its useful services for the real economy may reasonably justify.[3]

Intuitively, it is tempting to compare such an overgrowing financial sector to an expanding tumor that threatens to choke the entire organism. Without examining to what extent this comparison might be relevant, note only that it may put in doubt the frequently advanced arguments defending the growth of the financial sector by pointing to its positive

[3] A strong empirical corroboration of this conviction is in Blundell-Wignall and Atkinson (2011): according to the OECD statistics for the ten preceding years, the financial sector was providing about the same useful output to the real economy, but its internal transactions have grown nearly ten times. A different, but also strong empirical corroboration is in Shiller (2013), who refers to excessively high proportion of university graduates who chose to start their careers in financial services. A partial theoretical support of this conviction can be found in the mathematical model by Bolton et al. (2011).

effect on the growth of the entire economy: the growing weight of an animal with a cancer may largely be due to the growth of the cancer.

V – POTENTIALLY HELPFUL VS LIKELY HARMFUL GOVERNMENT POLICIES: WHY LIMITING THE SIZE OF FINANCIAL FIRMS AND TAXING FINANCIAL TRANSACTIONS MAY HELP

V.1 – How to recognize likely harmful policies: a rationality-allocational criterion

A basic policy issue is how to distinguish potentially helpful policies from those likely to do more harm than good. Rationality-allocation analysis introduces a new criterion which compares the difficulty of conducting different policies with the expected rationality of government. The potentially helpful policies can then be identified as those that are *sufficiently simple* not to cause any socially costly competence-difficulty gaps. The likely harmful policies are the others: *too complex*, and therefore causing such gaps.[4]

Importantly, however, if a policy is recognized as potentially helpful, it only means that government may be rational enough to conduct it correctly, but not that it will actually do so. There are other good reasons, briefly considered below, why government may conduct even the potentially most helpful policy wrongly, or not conduct it at all. On the other hand, as rationality-allocation analysis is basically probabilistic, it does not exclude that, with good luck, even a too complex policy – such as a government-owned enterprise or some government-selected investors – might exceptionally and temporarily succeed. It only points out that good luck is rare and lasts even more rarely, which makes relying on it unwise.

Admittedly, how complex a policy may be not to cause socially costly c-d gaps is often difficult to establish with precision. What R1 implies is only that the expected rationality of government is both far from the best and far from the worst – possibly, if political selection is unbiased by economically little-rational ideological or religious beliefs, it may even slightly exceed the population average. But much depends on the level of education and the culture of logical thinking of the population: the category of sufficiently simple, and therefore potentially helpful, policies may consequently vary from very small to quite large. But even in a developed economy where this category is relatively large, the one of too complex and therefore likely harmful policies is arguably larger.

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[4] That the limited cognitive ability (bounded rationality) of policymakers is an important factor on which the success of any policy essentially depends is a hardly deniable, yet in usual policy analysis neglected fact. The widespread neglect of this fact is nicely documented by Berggren (2012): in his extensive survey of articles explicitly or implicitly recommending various paternalistic policies, he finds that 95,5% neglect it entirely.

V.2 – Examples of likely harmful policies

The most frequent common feature of harmful policies is an important content of detailed, usually quantified specific measures that are too difficult for government to determine safely with sufficient precision. The needed relevant rationality is either not attainable by any human mind – as Hayek (1945) argued is the case of national planning – or is so rare that it may only be found by extensive market competition and selection, as is the case of top industrial entrepreneurship and fundamental investing.

One example of too complex policies is government owning, or managing, or giving specific orders to, investment banks – although, as noted, good luck may exceptionally allow even such policies exceptionally and temporarily to succeed. Another example is the overruling of the results of market selection by bailing out the losers. Both these examples are now little controversial: rationality-allocation analysis only additionally supports what is now widely believed.

More controversial examples are the Basel regulatory standard on bank capital adequacy, stress testing and market liquidity risk, and the complex Dodd-Frank Wall Street Reform Act, especially in comparison with the simpler and clearer Glass-Steagall Act. Strictly speaking, the Basel standard is not a government policy, but an international political agreement that imposes on banks the obligation to respect certain quantified parameters, intended to protect the banks, and thereby their customers, from failing. But, as this standard is a result of basically political decisions, and not market competition, it may be put it in doubt as if it were government policy.

The main doubt in both these examples concerns the relevant rationality of the political regulators compared to the one of the regulated banks. It appears indeed that the regulators have difficulties defining the imposed parameters – such as the level of risks of different assets – in a sufficiently smart way that would prevent the likely smarter managers of banks from obeying these parameters in the letter but not in the spirit. These difficulties strongly remind of those that socialist planners used to have with the smart managers of socialist firms whose output they were supposed, but more often than not failed, to plan. They, too, were inventing clever indicators for which the managers were finding even cleverer ways to meet, without really doing what the planners wanted them to do.

Of course, all this only roughly indicates why the two policies are likely harmful, or at least not very effective – which, however, would also be harmful because of their high costs. But to determine the size and the likelihood of their harmfulness more precisely would require

a thorough law-and-economics inquiry, which is not the task of this paper.

A general lesson is that detailed normative policies, to be potentially successful, require the policymakers not only to have good knowledge of all the relevant details involved, but moreover to be able to formulate, on the basis of this knowledge, non-ambiguous, sufficiently detailed and enforceable directives. For many complex economic behaviors, these conditions are simply impossible to meet.[5] Stubbornly ignoring this impossibility leads to complicated legal texts, which fail to prohibit all bad behaviors, or prohibit some good ones, or both.

V.3 Direct vs. indirect methods for improving economic behaviors by policy

What has been established is that policy, not to do more harm then good, can neither replace a failing market by government, nor completely determine how its participants should behave not to cause it to fail. The only potentially helpful policy is therefore to try to improve their behaviors incompletely, by excluding some of their failure-causing features. There are two methods for trying to do so: *direct*, by ex ante prohibitions; and *indirect*, by influences on ex post selection.

Standard economics is limited to the direct method, which mainly consists of designing and re-designing property rights, as studied in new institutional economics and law and economics. A classical example is enlarging property rights to internalize some of the external effects causing a market failure. Another example is adding constraints to the corporate law to exclude some obvious inefficiencies in the rules of corporate governance – such as those that allow the managers of large firms to extract rents to the detriment of the owners, and consequently cause the firms to use market freedoms in socially inefficient ways.

One of the merits of rationality-allocation analysis is its ability to deal with the indirect method. Compared to the direct one, its effects take much more time to show, but they do so with more precision and more respect for all relevant details. This method is also less demanding on the knowledge and the rationality of the policymakers: they may only specify some desired features of the outcome, without entering into details of what individual behaviors might achieve it. If the selection criteria are right, then whatever behavioral details might be essential, market selection will take care of promoting the agents with them and demoting those lacking them.

But the indirect method does not make the direct one useless. In a timeless world, the

[5] What makes the second, apparently less difficult condition, often impossible to meet is the intrinsic imprecision of human languages, which critically constrains, as shown in Pelikan (1969), all centralization of decisions.

former would suffice, but when time counts, the latter one may sometimes importantly help. It may rapidly eliminate some obviously inefficient, market-failure-causing behaviors that market competition would take too long time to do – as, for instance, in the above-mentioned case of inefficient corporate governance. It might indeed be necessary to wait very long for the entry of a large number of yet unknown, better governed corporations, to which the shareholders could switch their investment – while it appears relatively easy to identify at least some of the institutional rules by which the most inefficient forms of corporate governance could rapidly be eliminated. A necessary condition is that such behaviors can be identified and eliminated with enough precision, without also eliminating some important efficient ones.

V.4 – Why to limit the growth of financial firms and tax financial transactions

The promised arguments for the two controversial policies can now be presented. Their basic idea is that something must be wrong with market selection if a market's participants that behave socially inefficiently, causing the market to fail, are allowed to stay and prosper, instead of being forced to behave more efficiently, or leave place to more efficiently behaving competitors. It is then easy to see that this is indeed what happens if the market fails to meet NC1 or NC2. Policies that can help it meet these conditions – provided they are sufficiently simple for government to conduct – must therefore be considered potentially helpful.

That limiting the growth of financial firms belongs to policies that may help financial markets meet NC1 is rather obvious. To keep meeting this condition, a market must indeed prevent all its firms from growing "too big to fail," and thus making their exit prohibitively costly to the entire economy. The problem is that market freedoms, if institutionally unconstrained, cannot stop successful firms from doing so – e.g., by own expansion, or by mergers with, or acquisitions of, other firms. What appears often forgotten is that the market competition is nicely self-regulating only operationally, but may easily self-destruct structurally. The need for policies that can prevent firms from growing too big, and cut into smaller pieces those that have already done so, thus rather straightforwardly follows.

Of course, many such policies have been and are actually conducted, and many arguments for them already exist. But these arguments mostly build on the importance of market competition for efficient price-setting. Rationality-allocation adds an argument that builds on its arguably greater importance for the selection of efficient firms with correctly motivated and relevantly highly rational owners and managers.

This addition is important as an antidote to transaction-cost analysis, by which the

importance of market competition has been weakened. As Williamson (1975, 1986) started to argue, even a very large firm may be justified as socially efficient if its savings on transaction costs exceed the losses from weakened competition. Rationality-allocation analysis objects that this argument is too static, underestimating such losses, and especially their growth over time. If a large firm can impair market selection so importantly that the market structure will solidify in a once efficient but with time increasingly inefficient state, these losses may indeed become enormous, impossible to compensate by any savings on transaction costs,.

That taxing financial transactions belongs to policies that may help financial markets meet NC2 is somewhat less obvious. To see it, careful attention must be paid to the criteria of market selection according to which market participants are admitted and promoted, or demoted and possibly forced to exit. On product markets, these criteria do not pose problems. They rather naturally emerge from the judgments of the products, and thereby the producers, by clearly distinct consumers. On financial markets, however, the situation is different. Producers of financial services trade not only with distinct consumers from non-financial sectors, but to a large extent also with each other. Until recently, this extent was growing so rapidly that between 1998 and 2010 the intra-sector trade became about six times larger than the inter-sector one (see, e.g., Blundell-Wignall et al., 2011: 4).

While the great size of this extent is increasingly suspected of being socially inefficient by itself, rationality-allocation analysis moreover points to the additional inefficiencies due to distortions of the criteria of market selection. They follow from the fact that the producers-consumers of financial services, when they trade among themselves, are largely free to invent the objects of their trade and the rewards for the successes attained. Then, instead of promoting for high rationality relevant to the socially valuable art of fundamental investing – the one of recognizing among competing entrepreneurs the future winners from future losers – the selection criteria may favor high rationality relevant to other, socially less valuable, or even harmful, financial activities, such as the above-mentioned trend-trading, high-frequency trading, noise-creating-and-exploiting, and managerial rent-extracting.

If higher individual rewards can be gained for excellence in other financial activities than the socially most valuable fundamental investing, the situation can be understood as the classical collective goods problem: a divergence between individual incentives and social efficiency. The question then is what policies may diminish this divergence.

An important constraint is that the rewards for success in fundamental investing can hardly be increased by policies. Abolishing taxes on it may of course be possible, but this

may be done only to the extent to which such unreasonable taxes still exist. Otherwise the only way is to use taxes to decrease the rewards for, and thus hinder the selection of, other, less valuable types of investors.

A small tax on financial transactions then appears to be a particularly promising policy. With virtually no negative effects on fundamental investing, a very small one may suffice to discourage much of the likely less valuable high-frequency trading and the definitely harmful noise-creating-and-exploiting.[6] It thus also at least partly rectifies the selection criteria, making them select more of the socially most useful fundamental investors.

Perhaps the most serious objection against both these policies is that government cannot conduct them efficiently – it cannot know the efficient maximum size of financial firms, or the efficient tax rate on different financial transactions. The simple answer is that the exact values need not be known. Some approximate calculus combined with sensible rules of thumb can make both policies socially useful, even if not perfectly efficient – simply because abstaining from them altogether would definitely be inefficient. This would let successful financial firms and the entire financial sector over-expand, and thus sooner or later cause a new deep financial crisis.

Of course, many arguments for both these policies already exist, so that rationality-allocation analysis cannot do more than add some strength to them. But this extra strength is substantial. While the existing arguments are mostly deduced from the social losses caused by misallocation of investment, rationality-allocation analysis adds the much more serious and longer-lasting losses due to the selection of the wrong investors. Undoubtedly, to be selected in any competition always requires high rationality, but this may be relevant to other, socially little useful and possibly even harmful financial activities, and not to the socially most valuable fundamental investing. As a result, the top financial jobs may to a large extent be occupied by individuals of the wrong kinds of high rationality. The financial sector will then poorly fulfill its internal task, and thereby also the external one. The socially most valuable fundamental investing will then for a long time remain insufficient in both quantity and quality.[7]

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[6] That some technically feasible practices of high-frequency trading – such as layering and quote stuffing – are so harmful that they are considered criminal and become a matter for FBI is reported by Scanell (2013). Interestingly, a small FTT, if also imposed on offered transactions, and not only on the actually realized ones, appears capable of solving the problem automatically, without FBI.

[7] A striking example of distorted selection of investors and of the enormous social losses caused can be found in the recent history of Czech economy. After the sophisticated and arguably successful coupon privatization in the beginning of the 1990's, intended to start the working of financial markets, the government failed to provide the rather standard institutional protection of shareholders in investment funds. This allowed the fund managers to make great gains from asset-stripping – the so-called "tunneling" – which caused a large part of the Czech

VI – WHY GOVERNMENTS MAY FAIL AND HOW RATIONALITY-ALLOCATION ANALYSIS MAY HELP

VI.1 – Possible causes of government failures

Finding a helpful policy in theory, however, is no guarantee that governments will adopt it in practice. Government may, and often do, fail to do the right things and/or to abstain from doing the wrong things. An old but still unsurpassed survey of the possible causes is due to J.S. Mill (1972/1861): "The positive evils and dangers of the representative, as of every other form of government, may be reduced to two heads: first, general ignorance and incapacity, or, to speak more moderately, insufficient mental qualifications, in the controlling body; secondly, the danger of its being under the influence of interests not identical with the general welfare of the community."[8] In the present terminology, the two causes may be referred to as: (1) too bounded rationality; (2) distorted incentives.

For a long time, however, this survey was largely ignored. A vast majority of economists were wishfully assuming governments to be perfectly rational and perfectly benevolent actors, able optimally to correct all possible market imperfections.

It took nearly a century before an initially unwelcome minority of economists, labeling their field "Public Choice," rejected this assumption as dangerously unrealistic, prone to mislead policy, and started to inquire into Cause (2). What they found is, in a nutshell, that the distorted incentives are mainly due to the vested interests and personal rent-seeking of politicians and government bureaucrats.[9] Cause (1) was ignored even longer. The rationality-allocation analysis, as recapitulated and applied in this paper, appears to be the first systematic inquiry into it.

VI.2 – How rationality-allocation analysis may help policymaking

The policy advice of Public Choice may be seen as mainly addressed to the citizens at large, to warn them against the propensities of politicians and public servants to rent-seeking. In

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economic elite to be selected for low ethics rather than high relevant rationality, and a large part of the Czech electorate to lose trust in markets and renew their illusions about socialist solutions.

[8] I thank Niclas Berggren for this reference.

[9] An excellent recapitulation of both the method and the findings of this inquiry is in Buchanan (2003). But this recapitulates what may be regarded as the *original version* of Public Choice economics. Its more recent versions appear to turn away from government failures, striving instead to demonstrate by advanced econometric methods that political democracy is good for economic growth – without explaining why, and without paying proper attention to such strong counterexamples as China and Italy.

contrast, the policy advice of rationality-allocation analysis may be addressed even to the politicians. It gives them the benefit of the doubt that their intentions may be good, but warns them that they should abstain from too difficult policies, not to cause, because of their most likely only modest relevant rationality, c-d gaps leading to socially costly policy errors.

But there is another necessary condition. On top of good intentions, the policymakers must moreover possess sufficiently high potential rationality to allow them to increase their actual rationality by learning from relevant theories. This appears strongly to depend on the education level and culture of the society, or at least of that part of it from which the policymakers are recruited. Among other things, the culture must include preferences for critical rational thinking over blind ideological or religious beliefs. This, unfortunately, appears not to be the case everywhere.

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