COMMENTS ON *THE DOG AND THE FRISBEE* BY ANDREW G. HALDANE AND VASILEIOS MADOUROS*

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This is a thought-provoking paper that makes a very simple point: follow simple rules for financial stability. Less is more. Simple rules are more robust than complicated regulation. The paper persuasively argues and presents supporting evidence that simple rules are, in most environments, more efficient at predicting crises.

To start I have to make a disclosure: I fully endorse the spirit of this paper. It is generally better to use simple rules in public policy, albeit not always possible.

However, my role of the discussant is not to congratulate the authors nor to emphasize features consistent with our priors, but to provide comments and questions regarding the main results of the paper. This should strengthen the case for simple rules, although at the end of my review I will conclude that implementing simple rules is quite hard to do, in particular given the complexities of financial markets.

Rules today are increasingly complex, and they may be quite ineffective in preventing a financial crisis. But current problems do not necessarily come from the use of complex rules. Take just for example the case of Spain, the creator of dynamic provisioning with very strong and large regulatory bodies, and with two of the strongest banks of Europe. It is in a deep crisis, which is to a large extent the result of a housing bubble and weak corporate governance in institutions dedicated to housing finance, the *cajas*. Regulation and macroprudential rules did not avert the disaster, although without them the current crisis could have been much worse. Some *cajas* were instruments of the political parties rather than accountable financial institutions.

In what follows I will focus my discussion on three issues. First, on the question that, if simple rules are better than complex ones, why does policymaking converge to complex rules. Second, on whether the paper really makes a robust empirical case in favor of simple rules. And finally, I will conclude with brief remarks on some of the proposals.

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Why have rules become so complex?

A first question we should address from a policymaking point of view is why have rules become so complex. And then, how can we make them simpler. This is no different from the precept that before proposing a policy intervention, we need to understand the distortion we intend to correct.

The paper illustrates the growing complexity with the skyrocketing number of pages of rulebooks and the sharp rise in the number of people involved in regulation. This is not the result of the crisis. According to charts 1 and 2 of the paper this process started before the crisis, at least in the case of the UK, and obviously the crisis provided further impetus for oversizing.

Why has complexity increased? Indeed, if we know that simple rules could be better, why are they not used? One simple reason is that a more complex world requires more complex regulation. In contrast, this paper argues in section 5 that the more complex the environment, the more robust are simple rules. Moreover, the empirical evidence offered in the paper shows that even in simpler contexts simple rules could still perform better than complex ones. [1]

I still think part of the increased complexity is the result of a more complex financial system, even though complexity in the rules may have gone too far. This paper needs to show that complexity is excessive for the wider range of activities in the banking industry. It is not enough to count pages of rulebooks and people in the regulatory agencies.

I will assume for the remaining of my discussion that the more complex rules have not been more effective. However, effectiveness, or robustness, on one side, and complexity on the other, are not clearly distinguishable in the paper.

The paper argues that complex rules induce defensive behavior, such as over-prescribing drugs and over-submitting patients to hospital by doctors, and therefore, having simpler rules eliminates this inefficiency. However, I think causality goes the other way around and it is defensive behavior that creates very complex rules.

If Congress, in a highly sophisticated financial system, drafts very simple legislation, it will be exposed to heavy criticism if a crisis hits. Most likely problems will come from some unregulated area, and regulation will be criticized, rightly or wrongly, for failing to anticipate the problems. In such a case, the regulator's defense will be to argue that she did not have the legal attributions. Therefore, in anticipation, Congress will draft

[1] When looking at 8,500 FDIC-insured banks in the US, a sample of a supposedly simpler environment, risk-based capital ratios perform better than leverage ratios. However, when extending the analysis using CAMEL indicators, simple rules still trump complex rules.

very complex rules to demonstrate, perhaps by the number of pages, that they are covering every possible risk scenario.

The regulator, in turn, will prepare manuals and implement complex regulation, since there are no legal impediments to regulate thoughtfully. Regulators want to avoid being accused of negligence. This will lead to increasing the size of regulatory agencies and escalating complexity. Indeed, there is an inefficient feedback loop between growing regulatory agencies and growing complexity. New staff needs to be doing something relevant to ensure financial stability, and that should lead to new duties. Then, after these new duties are implemented, staff will find, perhaps in a defensive behavior, new risks. Hence, more staff will be demanded. Dismantling oversized public agencies will be no easy.

The way to avoid this excess defensiveness is for international bodies to recommend simpler rules. They are less subject to defensive behavior. Here, the leadership has necessarily to come from the Tower of Basle. The Basle Committee and the FSB are in a unique position to define the broad rules for banking regulation, and hence, they should make them simpler. Some progress has been made, as Haldane and Madouros report in the paper, as new consultation documents from the BIS ask for a greater role of standardized approaches in measuring credit and market risks. And this is one of the paper's five commandments: reconstruct the Tower of Basle. But, as long as we do not have a clear explanation of why international recommendations became so complex, it is not sure that we will be able to go very far in this area.

However, we cannot rely only on international standards. Domestic regulation must move regardless progress in this area. Indeed, there are countries like Chile that is only Basle I compliant, although is closer to Basle III. Its banks have higher capital ratios, limits on leverage, higher risk weight to mortgages, and does not accept internal ratings based approach to measure credit risk, something extremely complex.

The other reason for having complexity is the capture by vested interest. Rulebooks grow to a large extent by defining exemptions, special cases and very precise scopes of regulation. And many of those exemptions are the result of political capture. This increases complexity. Moreover, many times international discussions among regulators come closer to foreign affairs ministries meetings, where most of the participants are protecting their national interests rather than taking a more candid and open view based on technical foundations. There will still be a legitimate difficulty as long as regulators are confident that what they are doing at a national level goes in the right direction, and this should be the route followed by international guidelines. It is important to separate technical aspects from national biases.

It is always difficult to eliminate vested interest, especially when they are the interest of the nationals. A way forward is for national regulators to be truly independent institutions. And in this area autonomous central banks should play a key role in crafting regulation. Independent institutions are much better prepared to manage complexity.

I am not very optimistic about having a small number of simple rules. A more promising avenue is for regulation to be based on a small number of simple key regulatory parameters, and complexity becomes a complement to, rather than a substitute for, such simple rules.

Is the evidence robust enough to demonstrate the case for simple rules?

The foundation for using simple rules comes from developments in bounded rationality and behavioral economics. The dog needs not know the physics of frisbee catching to do it masterfully. As Friedman said a long time ago (Friedman, 1953) an expert billiard player does not know all the complicated calculations to hit the ball properly, she just simply "figures it out." A central explanation for the success of simple strategies is experience. It is not enough to follow simple rules to have good performance at frisbee catching or billiard playing. Practice, and trial and error, are essential, and not all rules of thumb will work. As Friedman argued, it is not necessary to have high computational skills to perform well at billiard, but there is a sort of "natural selection" among many simple strategies. What is the appropriate simple rule in financial systems is not clear. Moreover, as large financial crises occur, hopefully, once or twice in a century, it is difficult to accumulate enough experience. It will not be enough to have highly experienced regulators, although it surely helps.

From the empirical point of view, the evidence of the paper is persuasive, however more research is needed to draw more definite conclusions. As I was reading the paper, expressions like "Goodhart's Law" or "Lucas Critique" came permanently to mind. Let's take the case of risk weighting, where the comparison is done between risk-weighted assets and leverage, which is basically equal weighting. The evidence reported in the paper shows that leverage ratios are better predictors of banks failure than risk-based measures. So, leverage would be a better regulatory measure.

Risk weighting was introduced to avoid regulatory arbitrage and incentives to take excessive risk. The dominance of leverage ratios in predicting crises may be due to the fact that risk weights are not always appropriately measured. In addition, regulatory arbitrage drives banking activities away from overweighted risk assets to underweighted ones, raising the leverage ratio without raising the risk-weighted capital ratio. Indeed, leverage was used to increase mortgage lending, which has a 50 percent weight in Basel II. Therefore, the rise in mortgages resulted in a larger increase in leverage levels than risk-adjusted assets. The problem was that the risk weights might have been too low. Something similar we may have in the future with the zero risk weights of sovereign debt.

However, I think that the main reason behind better ability of leverage ratios to predict failures found in this paper was precisely that leverage was not subject to regulatory limits, and hence, it is a better indicator of the risk being taken by banks. Regardless of the complexity of the regulatory model, regulation induces behavior consistent with fulfilling regulatory requirements in order to minimize the probability

of a bank failure. Banks should comply with regulatory limits. By construction, the regulatory indicator will be truncated at the regulatory limit, reducing its ability to predict the occurrence of the crisis.[2] There will be another indicator, outside the scope of regulation, which performs better.

In contrast, if the limits had been placed on leverage ratios, risk-weighted capital could have provided a much better indicator of that probability of failure, while leverage ratios would have performed poorly.

Indeed, regulation should set limits on some relevant ratios, but banks' failure prediction should be based on a broad range of parameters, not all of them subject to regulatory limits. Those are the ones that show the vulnerabilities of the system.

From the point of view of the paper, the authors suggest putting in an equal footing leverage ratios and risk-weighted capital ratios. This is a wise recommendation. However, taking seriously the authors' finding, the suggestion should rather be to give priority to leverage, which, for the reasons given above, it is not guaranteed that it is the best measure.

As argued before, having limits on leverage and risk-weighted assets may not be enough, as fragilities may show up somewhere else, such as off-balance-sheet activities. To avoid excessive complexity, discretionary powers have to be granted to regulators, as this paper also suggests.

However, there is and additional complication and is that experimental studies have shown that when consumers face multiple choices, they end up adopting simpler ruler or paralyzing and not making any choice at all. This happens when choosing gourmet jams, chocolates or pension plans (Iyengar and Lepper, 2000; Iyengar and Kamenica, 2010). Regulators may gather very large amounts of data, but how to process them and what to infer from them may not be clear. However, the fact that in complex environments, for example with a large variety of gourmet jams, people would prefer less choices, does not imply, from a welfare point of view, that less is better than more.

Policy recommendations

In order to have simple rules, the paper concludes with simple five-commandments:

(1) Reconstruct the Tower of Basle; (2) place leverage on stronger regulatory footing; (3) strengthen Pillars 2 and 3 of Basel; (4) tax complexity and (5) use more quantity restrictions.

They are all reasonable suggestions, but let me make a couple of comments on the challenges for regulation in order to simplify it and make it more robust. Indeed there

[2] There is an empirical question regarding the use of plain probit to estimate the probability of failure with truncated variables.

have been significant efforts strengthening Pillar 1. However, relying in Pillar 1 may induce moral hazard as long as regulatory limits become a frontstop rather than a backstop for commercial risk management. Banks may rely excessively on regulations ignoring their internal risk management duties. Lack of regulation cannot be an excuse for bank failure. Incentives must be aligned, so all relevant players put high effort in risk management.

The use of quantitative rules is prevalent in emerging market economies. For example in the case of Chile many activities are simply not allowed. The trading book is very simple and the use of derivatives by banks is limited. The exposure to foreign finance is also severely regulated, since this was at the center of the worst financial crisis we had during the early 1980s due to large currency mismatches. The ability for domestic banks to do cross-border lending is also severely restricted. In order for foreign banks to operate domestically as commercial banks they must have a subsidiary, with the same requirements as domestic banks. They must have their own capital, their own board of directors, and deposits in the parent banks are regulated through strict limits.[3]

Basel III contemplates higher capital charges in normal times as well as countercyclical buffers. A simple rule would be just to require higher levels of capital always. This is what has happened in many emerging economies, where the high levels of capital were important in shielding their financial systems from the crisis. Indeed, many emerging markets, including several Latin American countries, already have levels of capital consistent with requirements for 2019.

Regulation also needs a careful understanding the risks of different banking activities. Perhaps the iron law of regulation is to allow only activities that are well understood not only by banks, but also by regulators. How new activities distribute risk and which vulnerabilities they involve is a basic question regulators have to respond in order to take advantage of financial innovation without jeopardizing financial stability.

Overall, the financial system requires stricter and simpler regulation. However, we have to recognize that here, as everywhere, there is no such thing as a free lunch. This comes at a cost, a cost that is borne by corporations and households that end up incurring higher financial costs. But it is much better to pay those costs in normal times, which are also a better reflection of the true opportunity costs, rather than much higher costs during critical times.

Finally, during my discussion I have taken as given that complexity has increased. But is it really more inefficient complexity what has led increases in pages of rulebooks and staff in regulatory agencies? Or it is just that the number of financial products being offered by banks has increased? New products require new rules and new data. Financial development goes hand-in-hand with more rules. Perhaps in the end what

[3] For further discussion on cross-border banking and regulatory measures, see CIEPR (2012).

this paper is showing is that going from Basle I to Basle II was more regulation, but with very dubious success, and what the authors are concluding is that what we really need to simplify are financial markets and the banking industry.

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