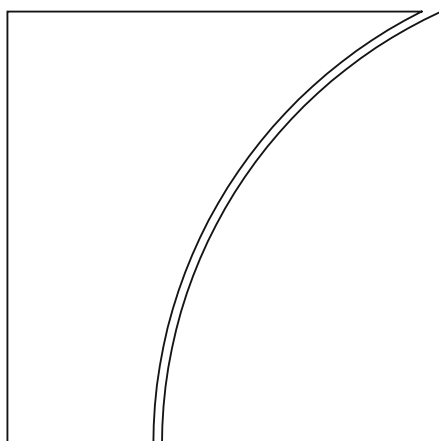


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## Central banks and financial stability: A reflection after the Covid-19 outbreak

by Fernando Restoy

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## Abstract

How should policy objectives be assigned between different authorities? Traditionally, this question has revolved around identifying conflicts and complementarities between their various remits. Equally important, however, is the question of whether specific policy instruments can be neatly assigned to specific objectives. When a specific policy instrument can significantly influence more than one objective, the case for assigning each of those objectives to a different agency weakens. Following this line of thought, and based on the experience with Covid-19 policy response, there would seem to be a clear case for assigning the financial stability mandate to central banks and an even stronger one for including both macro- and microprudential responsibilities in that mandate.

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# Central banks and financial stability: A reflection after the Covid-19 outbreak<sup>1</sup>

## Section 1. Introduction

Financial sector oversight involves a number of policy functions aiming at ensuring adequate market functioning and the stability and integrity of the financial system as a whole. Those functions include the monitoring of the solvency and conduct of business of different types of financial institution.

The design of institutional arrangements for financial sector oversight requires these different functions to be assigned to specific agencies. Decisions need be made on how best to group the functions, assuming that each of the agencies involved would normally be responsible for more than one function. Traditionally, this kind of decision-making has emphasised two different sets of criteria when comparing the alternatives: (i) whether the various functions conflict with or complement each other; and (ii) political economy considerations related to the distribution of power between agencies, and between agencies and the government.

On the first criterion, possible conflicts across public policy objectives (eg between price and financial stability, or between bank solvency and consumer protection) have been used to justify assigning the corresponding functions to different agencies. On the second criterion, functions have been assigned to different agencies in order to prevent an excessive accumulation of power by any single agency, particularly when such agencies operate with autonomy from elected governments.

Both sets of arguments have been heard, over the last two decades, in the debate on whether central banks should take on, in addition to their monetary policy functions, a responsibility for financial stability and, in particular, the microprudential supervision of financial institutions.

So far this discussion has often ignored the fact that possible conflicts between the objectives of two different functions does not rule out assigning those two functions to the same agency.

This would only be the case if, by assigning the two functions to two different agencies, the final outcome would likely be superior in social welfare terms. That might be the case when the intersection of the sets of relevant policy instruments for the two functions is not significant. In that case, the agencies are more likely to achieve the desired objectives if they specialise in different functions. However, if policy tools assigned to one authority have a significant impact on the objectives of another authority, the benefits of separation over integration are less clear-cut. At a minimum, the need for strong coordination across agencies with different but potentially conflicting objectives can hardly be questioned.

This has become even more relevant to the discussion of central banks' responsibilities after macroprudential policy frameworks were widely adopted after the Great Financial Crisis (GFC). The aim of the new function is to bolster financial stability by mitigating the risks stemming from macro-financial imbalances and the destabilising interaction across financial institutions and markets. But this aim may not always be consistent with the main price stability objective of central banks or with efforts to shore up individual financial institutions. Indeed, macroprudential actions often influence the financial and economic factors that affect consumer prices and the resilience of financial institutions. As a consequence, the macroprudential policy role does alter the terms of the debate on how best to allocate financial oversight functions to different agencies, including central banks.

<sup>1</sup> This paper is partially based on the presentation at the OeNB workshop: "How do monetary, micro- and macroprudential policies interact?", Vienna, 2 December 2019. I am grateful for comments received from Patrizia Baudino, Claudio Borio, Rodrigo Coelho, Juan Carlos Crisanto and Greg Sutton and the assistance provided by Christina Paavola.

The policy response to the economic impact of the Covid-19 pandemic highlights some possible complementarities across policy domains. For the first time, prudential policies have explicitly assumed an economic and financial stabilization role that complements the one performed by standard macroeconomic policies. The parallel moves by monetary policymakers and macro- and microprudential authorities help to illuminate the debate on the institutional design of policy frameworks.

This paper reviews the debate on central banks' involvement with financial oversight in the light of recent developments and the evolution of policy frameworks worldwide. The focus is on the interplay between objectives and instruments across different policy domains. Section 2 covers the evolution of institutional arrangements since the GFC, building on work by the BIS Financial Stability Institute (FSI). Section 3 discusses the case for assigning a financial stability role to central banks. Section 4 analyses the links between the micro- and the macroprudential functions. Finally, Section 5 concludes.

## Section 2. Recent developments on institutional arrangements

Some information on the evolution of institutional arrangements for financial sector oversight after the GFC can be found in Calvo et al (2018).

Table 1 shows the allocation of microprudential responsibilities for banks to different types of agency in a sample of 82 jurisdictions. In approximately two thirds of these countries, the main supervisory authority is the central bank. Moreover, although the number of institutional reforms after the GFC is limited (seven cases), in all but one case the reforms have entailed the transfer of this responsibility to the central bank when it was previously assigned to a different agency.

Changes in the primary microprudential authority for banking supervision Table 1

		Current		Total pre-GFC
		Central bank	Separate supervisory agency	
From	To			
	Pre-GFC	Central bank	48	1
Separate supervisory agency		5	27	32
Government department		1	0	1
Total current		54	28	82

Total changes	7
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Note: changes are highlighted/shaded.

Source: Calvo et al (2018).

Table 2 focuses on the allocation of macroprudential responsibilities. The data show that the microprudential authority for banks has assumed a macroprudential function in most cases (58%), and particularly so when the microprudential authority is the central bank (78%). The most common alternative structure is to assign the macroprudential function to a dedicated inter-agency committee in which the central bank typically also plays an important part.

From this, it can be concluded that, despite the creation of separate supervisory agencies in some countries, mainly in the early 2000s, central banks remain the main authority responsible for financial stability in most jurisdictions. The GFC and the introduction of macroprudential policy frameworks have

further strengthened their role. The following sections provide some conceptual arguments that could help rationalise those developments.

Primary banking supervisor	Entity responsible for macro-prudential policy	Recommendation only	Activation only	Recommendation and activation	Total
Central bank	Central bank	0	18	17	35
	Dedicated committee	5	0	5	10
Separate supervisory agency	Central bank	1	1	3	5
	Dedicated committee	7	1	3	11
	Separate supervisory agency	0	4	2	6
	Government department	0	2	2	4
Total		13	26	32	71

Source: Calvo et al (2018).

### Section 3. Monetary policy and financial stability

Although this is sometimes forgotten in the modern debate on what role monetary authorities should play in financial oversight, central banks were created with a mandate that embedded a financial stability dimension, if not always explicitly.

Their original function – as it emerged during the two centuries ending in the early 1900s – was usually to hold the monopoly on the issuance of legal tender. Central bank money soon became the natural means of settlement for interbank transactions. So that settlement could proceed smoothly, liquidity injection facilities had to be created for the provision of the funds required in both normal and emergency situations. At the same time, money issued by commercial banks (deposits) was increasingly used in transactions, although its intrinsic value depended on the issuing bank’s solvency. As a consequence, to avoid the emergence of exchange rates across commercial banks’ money, and to preserve the integrity of the monetary system, sufficient assurance had to be provided on the soundness of deposit-taking institutions, even before deposit insurance schemes were established. Therefore, as commercial banks became counterparts of central banks, and issued a large part of the money supply, the need arose for central banks to monitor banks’ solvency. As a policy objective, therefore, monetary stability became intrinsically linked to financial stability.<sup>2</sup>

The question whether there might be drawbacks to involving central banks in financial stability has arisen rather recently. This essentially coincides with the adoption by central banks – mostly in the last two decades of the 20th century – of price-stability mandates accompanied by statutory independence from governments and parliaments (Padoa-Schioppa (2002)).

The main argument against giving central banks any sort of responsibility in the area of financial stability is that the latter objective would not always be aligned with the primary price stability objective, thereby leading to socially suboptimal monetary policy. To counter that argument, it is often stressed that financial stability and price stability do not conflict with each other and that, on the contrary, one cannot be achieved without the other (Schwartz (1988) and Bordo et al (2000)).

<sup>2</sup> As an example, the Federal Reserve Act of 1913 established the Federal Reserve System as the central bank of the United States to provide the nation with a safer, more flexible and more stable monetary and financial system.

Yet, over the regular horizon of monetary policy actions, some conflicts can and often do occur. The most obvious example is where consumer prices remain broadly stable but overstretched asset valuations or excessive credit growth loom, threatening financial stability. This was seen, for example, during the Great Moderation before the GFC (IMF (2015)). It is obvious that, in this situation, financial stability considerations would induce central banks to raise rates above what would be justified solely on the basis of inflation projections. This would require the central bank to accept a downward deviation from the inflation target, with a possible impact on economic activity and employment (Svensson (2017)).

Interestingly, by asking central banks to stick to a narrowly defined price stability mandate and allocating financial stability responsibilities (such as bank supervision) to a different agency, it cannot be guaranteed that a better social outcome – combining both price and financial stability – would be achieved. Although credit and asset prices could be growing fast, banks may not face any pressure on their income and capital positions. Before the creation of macroprudential policy frameworks, supervisory authorities normally had neither the incentives nor the instruments to contain emerging macro-financial risks. In that situation, central banks should not only embrace a financial stability mandate but also, it could be argued, they should incorporate financial stability into their monetary policy reaction function (Borio and Lowe (2002)).

The macroprudential policy concept has changed the discussion in a significant way. Macroprudential instruments are supposed to (i) dampen the financial cycle by preventing large credit expansions and contractions (Borio (2013))<sup>3</sup> and (ii) help financial institutions to cope with the materialization of those macro-financial risks. In doing so, macroprudential policies would appear to be, at least theoretically, a powerful instrument for addressing financial stability risks.

It could then be argued that the macroprudential policy function weakens the case for central banks to adopt an explicit financial stability mandate. Instead, a specific macroprudential authority could be envisaged, which would work with a set of instruments such as capital add-ons, exposure limits or caps on loans-to-value or debt service-to-income ratios, to achieve a financial stability objective. The creation of this dedicated macroprudential authority would let monetary policy focus unambiguously on delivering price stability. Those institutional arrangements, based on concrete and transparent mandates, would certainly clarify the accountability of the authorities involved.

However, the case for an institutional separation does not depend only on whether each of the two objectives can be achieved by applying two distinct sets of instruments. It also requires that the instruments designed to achieve one objective have no significant effect on the other objective. Otherwise, the system of objectives and instruments becomes a set of simultaneous equations that cannot be resolved recursively (Restoy (2018) and Carstens (2019)). In more game-theoretical terms, the non-cooperative equilibrium (each authority pursuing its own objective independently of the other) is likely to become socially suboptimal (Cao and Cholletec (2017)).

It is clear that the standard monetary policy instruments directly affect credit developments, asset prices and banks' margins. Thus they have an impact on the prospects for financial stability. Likewise, macroprudential instruments, such as capital requirements or restrictions on credit availability, directly affect financial conditions, which in turn affect consumption and investment decisions and hence the prospects for economic stability.

It has been argued that the cross-objective effects of each policy instrument are substantially less pronounced than their own-objective effects (Svensson (2018)). This would certainly help to make the separation model work in practice. Yet, it is hard to identify episodes of severe macro-financial imbalances signaling financial stability risks that have occurred in the absence of overly favorable monetary conditions. Moreover, it seems difficult to envisage how macroprudential actions could succeed in moderating the credit cycle without affecting economic activity and, therefore, price developments, via the credit channel.

<sup>3</sup> For some, this first objective could be overly ambitious. See Tucker (2014).



The regulatory response to the Covid-19 pandemic shows how the macroprudential approach is supposed to work. Prudential authorities worldwide have relaxed capital and other requirements and they have done this with the purpose of supporting the real economy during the pandemic.<sup>4</sup> This is the first crisis episode in which regulatory adjustments have been explicitly presented as part of a package of policy actions undertaken to contain an exogenous shock on the real economy. That is a clear recognition of how macroprudential tools do matter, for both financial stability and economic stability.

These arguments imply that monetary and macroprudential policies should not be conducted by separate institutions unless there are sufficiently effective coordination mechanisms in place. Whether the above reasoning could also be used to justify the assumption of microprudential responsibilities by central banks depends very much on the links between the microprudential and macroprudential functions. These links are explored in the next section.

## Section 4. Macroprudential and microprudential functions

In theory, the distinction between the remits of microprudential and macroprudential policies is relatively well established. The former aims at ensuring the safety and soundness of individual financial institutions while the latter focuses on addressing macro-financial risks emerging from the interactions across financial institutions and markets (IMF (2013) and Constâncio et al (2019)).

Those definitions suggest that micro- and macroprudential policies share the same objective: namely, to preserve financial stability. But they approach this common objective from two different perspectives: either entity by entity (microprudential) or system-wide (macroprudential).

In principle, those two perspectives can work together effectively. This is particularly the case in cyclical upturns. The accumulation of macro-financial imbalances would require macroprudential policy actions to contain risk-taking by financial institutions. Those measures would then complement microprudential requirements and entity-by-entity supervision to address financial stability risks.

Yet, while the conflicts between monetary and financial stability are normally more significant in upturns, it is more likely that the micro perspective could occasionally clash with the macro approach in downturns. It is in downturns where risks for banks become more evident, as reflected in deteriorating asset quality indicators and profits. This typically leads to enhanced supervisory scrutiny and downward revisions to supervisory ratings. At the same time, it is in downturns that there could be a risk of coordination failures in the credit market that could lead to a tightening in bank lending, thereby exacerbating any credit crunch and downturn in activity and employment. That would in principle call for supportive macroprudential policies to be adopted together with a restrictive microprudential policy stance, with the aim of ensuring sufficient loss absorption at banks.

The potential frictions between macroprudential and microprudential could argue for assigning these two functions to different agencies. Yet, as discussed in relation to the separation of monetary policy and macroprudential policy, that approach could only work well if the instrument sets needed to achieve the respective aims of each agency could be neatly differentiated. But this kind of demarcation is difficult or impossible to make, given the close connection between the objectives of the macroprudential and microprudential functions and the broad overlaps between their respective toolboxes.

Note first that, even if the priority of microprudential authorities is the safety and soundness of financial institutions, there is no micro-supervisory authority that would aim to avoid each and any bank failure. There is always a systemic dimension to microprudential actions. Similarly, no macroprudential authority would interpret its role as taking no account of the soundness of individual institutions,

<sup>4</sup> See eg press releases by the ECB Banking Supervision of 12 March and the joint statement by the US Supervisory Agencies of 27 March 2020.

particularly systemic ones. The difference, therefore, lies on the different weights attached to – specific but interrelated – aspects of the same public policy objective.

As for policy tools, the common ground is also large, given that standard macroprudential instruments take the form of requirements or constraints imposed on regulated financial institutions.

Within Basel III, the macroprudential dimension takes the form of an overlay on the micro-oriented risk-based framework (FSB, IMF and BIS (2011), FSI (2017)). The main macroprudential component is the countercyclical capital buffer (CCyB). This is calibrated as a function of risk-weighted assets (RWA) (in the 0–2.5% range according to the economy’s phase within the financial cycle; it therefore helps to mitigate the procyclicality of banks’ behaviour. In addition,<sup>5</sup> the capital conservation buffer (CCoB), is also designed to play a countercyclical function, or at least partially so, as it permits the absorption of losses (up to 2.5% of RWA) in bad times, thereby reducing the need to cut credit exposures to meet minimum capital requirements.<sup>6</sup>

Hence, the macroprudential instruments in Basel III take the shape of capital buffers that interact with standard Pillar 1 and Pillar 2 requirements established as part of the microprudential framework. While Pillar 1 requirements are normally fixed, Pillar 2 capital add-ons are decided year by year and institution by institution by the microprudential authorities. In defining those add-ons, supervisors typically take into account the level of capital that would allow banks to absorb losses in a stress test without breaching minimum (Pillar 1) capital requirements. Moreover, the CCoB, although also playing a macroprudential function, is established by microprudential regulators even in countries with a dedicated macroprudential authority.

It is therefore not possible to rationalise all supervisory tools within a purely static microprudential logic. Supervisory authorities increasingly interpret banks’ capital adequacy as ensuring sufficient loss absorption capacity in adverse situations, hence interfering with the objectives of the macroprudential framework.

A corollary is that microprudential authorities would normally have the means to adjust capital requirements to the level they consider adequate, regardless of the CCyB’s level. That means that any conflict between the microprudential and the macroprudential objectives could be resolved only if the responsible officials were to agree on the average level of capital that the system requires. Otherwise, microprudential supervisors would be the ones establishing the effective capital constraints.

Some jurisdictions have expanded the macroprudential toolkit by adding non-capital based instruments such as limits on credit levels or credit growth or restrictions for household loans (e.g. caps on loan-to-value, debt service-to-income ratios), foreign currency lending, maturity mismatches etc (Lim et al (2011) and Claessens (2014)). Such instruments allow macroprudential policy some autonomy with respect to the microprudential policy stance. Yet, experience shows that the scrutiny of banks’ risk management and the communication of supervisory expectations allow supervisors to steer banks’ credit policies without the need for formal restrictions.<sup>7</sup> Those supervisory measures could well complement macroprudential decisions effectively. At the same time, macro- and microprudential actions could also neutralise each other.

<sup>5</sup> Additional buffers are established for global or domestic systemically important banks (G-SIBs and D-SIBs). These are also considered part of the macroprudential framework. They are established to strengthen the loss absorption of systemic institutions on a permanent basis and thus have no countercyclical role.

<sup>6</sup> Yet, banks making use of the CCoB are subject to automatic restrictions on dividends and other payouts. Moreover, there is typically no clarity on the timing and the conditions that supervisors will establish for the replenishment of the CCoB. Those elements, together with the stigma effect that the use of the CCoB may generate, are likely to limit its countercyclical potential (Borio and Restoy (2020)).

<sup>7</sup> A case in point is Australia. The microprudential regulator (APRA) was able to contain the large credit and housing price growth of the last decade by closely monitoring banks’ practices and persuading them to tighten their lending standards. See IMF (2019).

It is therefore clear that an effective macroprudential framework requires, at the very least, a close coordination between both prudential policy functions. This coordination does not necessarily require the integration of both functions within the same agency. A good example is the parallel moves by both microprudential and macroprudential authorities to alleviate banks' capital requirements soon after the outbreak of the Covid-19 crisis, with the aim of shoring up bank lending. That coordination across separate agencies may become more challenging when deciding how rapidly prudential requirements should be normalised. Normally, one could expect that, as economic conditions weaken, supervisors with a microprudential mandate would sooner or later start feeling uneasy with the looming erosion of banks' asset quality and loss-absorbing capacity. Measures then taken to strengthen banks' balance sheets – eg by speeding up the rebuilding of banks' microprudential buffers – could prevent macroprudential actions from keeping up the credit supply. Normally, the longer it takes for the economy to recover its normal pace of activity, the more likely such frictions are to arise across functions.

On these grounds, the case for allocating the microprudential and the macroprudential functions to a single agency appears even stronger than the one for central banks to take on macroprudential policy responsibilities. As both functions share the same ultimate objective and much of their respective toolkits, the option to house them in separate agencies is unlikely to be preferable from a social point of view.

## Section 5. Concluding remarks

The Covid-19 crisis has already shown how different policy instruments could be activated in parallel by different agencies with the aim of stabilising the economy and the financial system. Yet, this episode has also shown the difficulty of making clear distinctions between actions aiming at addressing deflationary risks (and economic instability more generally) and those targeting the availability of credit to the real economy. Moreover, the measures taken reveal that the latter objective cannot be achieved by purely macroeconomic or macroprudential measures without adjusting the microprudential policy stance.

The impact of various policy instruments on differing social objectives constitutes a challenge for the adequate functioning of institutional arrangements based on allocating monetary, macroprudential and microprudential responsibilities to different agencies. During a crisis, agencies may naturally agree on the need to adopt extraordinary measures. On the other hand, the challenges of a coordinated policy response may become more severe as authorities decide on the pace of normalisation based on their own remit but using instruments that may also affect the other objectives of the other agencies.

This paper shows that there is a reasonably sound argument for assigning a financial stability function to central banks. The paper also puts forward the view that the financial stability function should encompass both macroprudential and microprudential responsibilities. Those two tasks should ideally be combined within a single policy framework comprising the instruments that would allow the authority to address all the different dimensions (entity-by-entity, systemic) of the financial stability objective.

Although this lies outside the scope of this paper, political economy considerations could, of course, be equally important for an adequate institutional design. The accumulation of responsibilities by independent authorities, such as central banks, raises issues of democratic legitimacy and accountability. These need to be satisfactorily managed if the chosen formula is to be socially acceptable and, hence, sustainable.

## References

- Bordo, M, M Dueker and D Wheelock (2000): "Aggregate Price Shocks and Financial Instability: A Historical Analysis", Federal Reserve Bank of St Louis, working paper, no 2000-005B.
- Borio, C (2013): "Macroprudential policy and the financial cycle. Some stylised facts and policy suggestions", Rethinking macro policy II: first steps and early lessons, April.
- Borio, C and P Lowe (2002): "Asset prices, financial and monetary stability: exploring the nexus".
- Borio, C and F Restoy (2020): "Reflections on regulatory responses to the Covid-19 pandemic", *FSI Briefs*, no 1, April.
- Calvo, D, JC Crisanto, S Hohl and O P Gutiérrez (2018): "Financial supervisory architecture: what has changed after the crisis?", *FSI Insights on policy implementation*, no 8, April.
- Cao, J and L Chollet (2017): "Monetary policy and financial stability in the long run: a simple game-theoretic approach", *Journal of Financial Stability*, vol 28, February, pp 125–42.
- Carstens, A (2019): "The new role of central banks", speech at the Financial Stability Institute's 20th anniversary conference, "A cross-sectoral reflection on the past, and looking ahead to the future", Basel, 12 March.
- Claessens, S (2014): "An Overview of macroprudential policy Tools", *IMF Working Paper*, no 14/214, December.
- Constâncio, C (editor), I Cabral, C Detken, J Fell, J Henry, P Hiebert, Sujit Kapadia, S Nicoletti Altissimi, F Pires, C Salleo (2019): "Macroprudential policy at the ECB: Institutional framework, strategy, analytical tools and policies", *ECB Occasional Paper*, no 227, July.
- Financial Stability Board, International Monetary Fund and Bank for International Settlements (2011): "Macroprudential policy tools and frameworks". Update to G20 finance ministers and central bank governors, October.
- Financial Stability Institute (2017): "Overview of Basel III and related post-crisis reforms", Executive Summary, June.
- International Monetary Fund (2013): "Key Aspects of Macroprudential Policy"; *IMF Policy Paper*, June.
- (2015): "Monetary Policy and Financial Stability", Washington, DC.
- (2019): "Australia: Financial System Stability Assessment", February.
- Lim, C, F Columba, A Costa, P Kongsamut, A Otani, M Saiyid, T Wezel, and X Wu (2011): "Macroprudential Policy: What Instruments and How to Use Them? Lessons from Country Experiences", *IMF Working Paper*, October.
- Padoa-Schioppa, T (2002): "Central banks and financial stability: exploring the land in between", Second ECB Central Banking Conference, October.
- Restoy, F (2015): "Monetary policy and financial stability", speech at Universidad Internacional Menéndez Pelayo, Santander, June.
- (2018): "Central banks and financial oversight", speech at the Fundación Ramón Areces, Madrid, Spain, 4 June 2018.
- Schwartz, A (1988): "Financial stability and the federal safety net", in W Haraf and R Kushneider (eds), *Restructuring Banking and Financial Services in America*, American Enterprise Institute.

Svensson, L (2017): "The Relationship between monetary policy and financial stability policy". *Monetary Policy and Financial Stability: Transmission Mechanisms and Policy Implications*, Central Bank of Chile, 2017.

——— (2018): "Monetary policy and macroprudential policy: different and separate?", *Canadian Journal of Economics/Revue canadienne d'économie*, vol 51, issue 3, pp 802–27.

Tucker, P (2014): "The political economy of macroprudential regimes", in D Schoenmaker (ed), *Macroprudentialism*, Centre for Economic Policy Research, London, pp 61–72.