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For an articulated approach to economic policy and financial regulation to deal with climate challenges

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EXECUTIVE SUMMARY

The net-zero transition, *i.e.* the transformation towards a carbon-neutral and resilient economy, is a major and urgent challenge for reducing the effects of climate change. This transformation requires the transition and adaptation of all activities and all economic agents. It is first and foremost a matter for the real economy and must be based on an operational roadmap of actions to be taken. This must be defined by an ambitious economic policy (budgetary, fiscal, monetary, regulation of products and sectors, etc.).

What role should private finance play in this?

It must be a catalyst for transition and adaptation, not a brake on it. Whatever transition path is adopted, the scale of the financing and the depth of the reorientation of financial flows will be considerable.

Indeed, financing the net-zero transition requires not only financing activities that are already sustainable and “climate solutions”; it requires also to finance the transformation and adaptation of all economic sectors as well as stopping to finance the activities that emit the most greenhouse gases. It is therefore a crucial role that requires the transformation of the vast majority of the activities of private financial players alongside public financing.

However, it is illusory to think that private financial players will mobilise on a voluntary basis to meet the climate challenges. It is therefore essential for the public authorities to intervene proactively to mobilise them. The question is how.

Current policy to mobilise the private financial sector consists in adopting a silo approach:

- Economic instruments (budgetary, fiscal, regulatory) are used primarily to influence non-financial actors;
- Financial regulation (non-prudential) seeks to ensure the financing of the transition through market mechanisms;
- Prudential policy (banks and insurance) is aimed at preventing systemic risk.

The policy pursued by the European Union is a good illustration of this situation. It is not enough.

1/ The silo approach is inconsistent with the close linkages between the economy and the financial sector

These linkages result mainly from two mechanisms that are also at work in the net-zero transition:

- the feedback loop between economic policy and financial sector stability: by ensuring an orderly transition and adaptation by economic agents, an effective economic policy can maintain the stability of the financial sector and thus avoids negative repercussions on public finances (which will not have to bear the cost of financial crises).
- Sufficient financing is essential for the proper functioning of the economy in general, and for a successful net-zero transition in particular: yet this financing can be

threatened by the instability of the financial sector, or by poorly calibrated financial regulations.

These linkages between the economy and the financial regulation mean it is essential to closely articulate economic policy and financial regulation.

2/ The silo approach undermines the effectiveness of economic policy and financial regulation to mobilise financial actors in response to climate challenges

Three assumptions explain the prevalence of this approach:

- the preference of economists for using the price signal to encourage economic agents (businesses, households and financial actors) to make changes in order to reduce their GHG emissions;
- the confidence policy makers have in the efficiency of financial markets to finance the transition;
- the strong reluctance of supervisors (especially banking) to use prudential tools for purposes other than maintaining financial stability, particularly for promotional purposes (*i.e.* to redirect financial flows).

It is essential to go beyond the silo approach because it undermines the effectiveness of public action:

- economic policy based on a price signal faces major obstacles that reduce its effectiveness. Political and social factors have hindered the introduction of a carbon price signal at a sufficient level, and the effectiveness of the price signal itself is less than economists had anticipated;
- the increased transparency of financial markets is insufficient to mobilise the financial sector to finance the transition. It is slow and complex to implement. And fundamentally, it faces intrinsic obstacles; it seems illusory to think that voluntary initiatives will be sufficient to redirect private financing on a massive scale, given the prevalence of the risk/return trade-off in decision making;
- the prudential approach adopted comes up against the radical uncertainty of climate risks (inherent in climate phenomena and in the transition itself). This radical uncertainty prevents the quantitative integration of climate risk into the prudential requirements of banks (pillar 1). The approach adopted (prioritising pillar 2, in particular through climate stress tests) also faces this obstacle and will not be sufficient in the face of systemic risk. A precautionary, preventive approach needs to be taken aiming at preventing the emergence of climate risks rather than guarding against their effect.

3/ An articulated approach to economic policy and financial regulation is essential to finance the transition and to prevent systemic climate risk

Appropriate economic policy is an essential prerequisite that cannot be replaced by financial regulation. But, if such an economic policy exists and is sufficiently operational, the close articulation of economic policy and financial regulation (including prudential) can improve the effectiveness of public action.

Financial regulation could make the transmission of economic policy to financial actors more efficient

Indeed, it can:

- be rapidly mobilised;
- supplement an insufficient price signal with micro and macroprudential tools (e.g. capital requirements);
- use other transmission channels when the price signal is not effective enough (e.g. mandatory bank transition plans, or exposure limits);
- help overcome banks' legacy problems due to the presence of potentially stranded assets (via capital or provisioning requirements).

An articulated approach would also enable prudential supervisors to better fulfil their financial stability objectives than the current prudential approach

Indeed, the prudential instruments used in the articulated approach to strengthen the effectiveness of economic policy vis-à-vis financial players also help to meet the objective of financial stability.

- The articulated approach consists in implementing a preventive approach aimed at facilitating the financing of the transition by encouraging a reallocation of financial flows. In this way, it takes into account the largely endogenous nature of climate risk (financial institutions contribute to climate change through the financing granted to emitting activities). Thus, by facilitating financing for the transition and adaptation, this approach would reduce climate risks and their impacts on financial actors; it would play a crucial part in preventing the systemic risks posed by climate change.
- The preventive, precautionary approach advocated above must do away with the exact measurement of risks by setting "conventional" prudential rules which depend on the desired impact on the reallocation of financial flows (and not based on an accurate evaluation of climate risks).

In the context of this articulated approach, economic and financial policies must be coordinated and coherent: adoption of common objectives and references, dynamic articulation of instruments over time, and use of complementary instruments to achieve objectives.

4/ The implementation of this integrated approach will need to respect certain restrictions

- Avoiding conflicts of objectives between financing the transition and safeguarding the solvency of financial players, in particular by specialising the instruments used.
- Overcoming conflicts of time horizons between the prevention of medium-to long-term risks (through the reallocation of financing) and the emergence of short-term risks that could result. In this context, it is essential to continue strengthening the individual supervision of financial players in the face of climate risks.
- Taking account of conflicts of intervention level (financial institution vs. financial sector), by combining micro- and macro-prudential instruments and strengthening the resilience of each actor.
- Resolving potential conflicts of mandate for financial supervisors to facilitate this articulated approach. The issue of the supervisors' mandate will have to be carefully examined to assess the real benefits against the difficulties of such a change. But it is not clear that a change of mandate is essential to implement the proposed policy.

ADVANTAGES OF THE ARTICULATED APPROACH	ILLUSTRATIONS
1/ Improving the effectiveness of economic policy transmission to financial actors	
<ul style="list-style-type: none"> • Instruments can be mobilised quickly 	<ul style="list-style-type: none"> • “Politically” less costly to implement
<ul style="list-style-type: none"> • Strengthening an insufficient price signal 	<ul style="list-style-type: none"> • Very high capital requirements for the activities most harmful to the transition (e.g. coal or new fossil energy production capacities) • Stricter capital requirements for other fossil energy financing • Systemic capital buffers for the most emissive activities from which banks must gradually withdraw
<ul style="list-style-type: none"> • Using other transmission channels to influence the decision-making criteria of financial actors 	<ul style="list-style-type: none"> • Mandatory transition plans for banks under supervisory control • Remuneration policy taking account of transition objectives (for all financial actors) • Sectoral exposure limits imposed on banks for the most emissive activities • Sectoral leverage ratios to penalize financing for high-carbon sectors
<ul style="list-style-type: none"> • Overcoming the “legacy problem” of banks 	<ul style="list-style-type: none"> • Factoring potential stranded assets into mandatory transition plans for banks • Inclusion in targeted capital requirements • Dynamic “provisioning policy” to anticipate the emergence of “stranded assets”
2/ Improving the effectiveness of prudential policy	
<ul style="list-style-type: none"> • Implementing a preventive policy to take into account the endogenous nature of climate risks 	<p>Use of the instruments described above to:</p> <ul style="list-style-type: none"> • Reallocate financial flows to promote transition in order to reduce physical and transition risks • Reallocate financial flows to accelerate adaptation and reduce the financial impact of physical risks
<ul style="list-style-type: none"> • Using a precautionary approach 	<ul style="list-style-type: none"> • Use of conventional rules (<i>i.e.</i> not based on the level of risk but on the desired impact on the reallocation of financial flows) to calibrate the prudential tools described above

INTRODUCTION

The net-zero transition, *i.e.* the transformation towards a carbon-neutral and resilient economy, is a major and urgent challenge for our societies if we want to reduce the effects of climate change (IPCC - 2018). This transformation requires the transition and adaptation of all activities and economic agents. It is first and foremost the responsibility of the real, non-financial economic sphere, and it must be based on an operational roadmap identifying the actions to be taken¹. This challenge must be met through ambitious economic policies (budgetary, fiscal, price signal, monetary, regulation of products and sectors, etc.) which must be supported by a strong political will and the social acceptability of the lifestyle changes that will be required.

What role should finance play in these policies if we are to successfully meet the climate challenge? Finance – public and private – cannot replace economic policies. It must accompany the transition and adaptation and not hamper these developments; it must act as a catalyst. In the words of the Paris Agreement, financial flows must be “compatible” with the transformation to a carbon-neutral and resilient economy. This role is therefore important, and it is not limited to financing the “green activities” to be developed; on the contrary, it requires mobilising – in one way or another – the whole of private finance (see box below). This note will not deal with the role of public finance, which is also important.

THE ROLE OF PRIVATE FINANCE IS IMPORTANT (I4CE 2022B)

To “finance” the transition, financial players have to play three different roles:

- Financing, to enable or facilitate activities that are already sustainable (*e.g.* renewable energies) or “facilitating” or developing “climate solutions” (*e.g.* infrastructure for electric mobility or low-carbon hydrogen);
- Financing, to enable or facilitate the decarbonisation of companies operating in the economic sectors that emit the most carbon (agriculture, cement, steel, cars, etc.), the energy renovation of buildings (housing, tertiary sector, etc.) but also all the other economic sectors that will be indirectly affected by the transition (tourism, health, etc.).
- Stop financing high-emission activities that cannot be decarbonised (coal, gas, oil, combustion engines, plastics industry, etc.) and manage the gradual withdrawal from these activities (in particular by identifying and financing the closure of stranded assets).

Financing the transition is therefore not just about financing “climate solutions”; it is about redirecting or adapting almost all private financing.

The role of private finance takes different forms depending on the type of finance:

- “Primary” finance has the greatest direct impact on the transition because it provides additional capital to make new projects possible (green projects or decarbonisation projects) or, on the contrary, stops doing so (*e.g.* stops financing new fossil fuel expansion projects). It meets the criterion of additionality, which is necessary for a financial player to have an “impact” on the transition: in other words, it finances a project that would not otherwise have been financed and therefore ultimately modifies the amount of GHG emissions in the real economy.
- “Secondary” finance has no direct impact on the transition in the sense of additionality, as it only “refinances” existing financial assets. Its contribution is more limited but nonetheless important:
 - put pressure on companies whose activities are to be discontinued, or significantly reduced, mainly thanks to the engagement policy with non-financial companies (through dialogue or votes at general meetings). These engagement policies can have an impact on non-financial corporates’ behaviour.
 - indirectly support the decarbonisation of companies and/or the development of sustainable activities. In fact, holding securities ensures that a listed company (via a dynamic and attractive share price) has easier access to advantageous financing conditions on the capital markets and thus continues to finance the transformation of its business model that is already underway.

These financial flows must finance both mitigation and adaptation policies.

¹ It has to be said that there is currently a great deal of uncertainty surrounding the practical planning of the transition: there is no transition scenario on which there is a global consensus, with points of tension relating to the underlying economic model of growth/post-growth, the confidence that can be placed in carbon capture technologies and the use of nuclear energy. At European level, for example, top-down approaches are currently being adopted that set targets without any associated operational roadmap for each of the 27 countries (*e.g.* the European “Fit for 55” package).

To mobilise private financial players, they must first have a vision of the financing needed to achieve the transition and adaptation. This vision must be the result of a shared planning framework that makes it possible to precisely identify the levers of action and therefore the activities, projects and companies to be financed (see above)².

But even with such a framework, it is unrealistic to think that financial actors will be able to voluntarily mobilise on the scale required to address climate challenges. It is therefore essential that the public authorities intervene proactively to mobilise the financial institutions (I4CE - 2022 b).

Academic works have extensively developed the economic policies that are needed to foster the transition. They provide a range of economic policy instruments, which include in particular fiscal and tax policy, economic regulation³, financial regulation and monetary policy. In general, these works consider that fiscal and tax (in particular the price of carbon) will not be enough to address climate change (e.g. N. Sterne and J. Stiglitz - 2020) and should therefore be supplemented by the use of other instruments, especially financial and monetary, to mobilise the private investment needed for the transition. These works underline the importance of a coordinated approach between these different instruments, without specifying the “policy mix” that would ensure the best combination of them (S. Kogstrup and W. Oman - 2019).

However, in practice, these policies are still largely designed separately – in silos – with different objectives, even though they are intended to bring about a far-reaching, cross-cutting transition in the economy. They consist in juxtaposing different instruments:

- those relating to economic policy (for example, carbon price or environmental standards) are aimed primarily at influencing non-financial actors to engage them in the transition and to reveal their financing needs;
- financial regulation (for example, taxonomy or reporting obligation) seeks to ensure sufficient financing for the transition through financial market mechanisms;
- and prudential policy is responsible for ensuring the security of the financial system⁴.

The European Union’s current policy to mobilise the private financial sector to tackle climate change is a good illustration of this situation⁵. The financing of a sustainable economy has been addressed through specific plans for the financial sector: first in 2018, the Action Plan on Sustainable Finance (European Commission - 2018), then in 2021, as part of the European Green Deal, the new Strategy for Financing the Transition to a Sustainable Economy (European Commission - 2021).

These policies are not enough to meet the challenges of climate change. The question discussed in this note is how private financial actors can be mobilised in the most effective way. The goal of this note is to explain the limitations of the current silo approach, to identify the obstacles facing an articulated approach to policies, and to propose avenues to overcome these.

The note covers in turn: the linkages between the economy and the financial sector (**section 1**), the impact of the silo approach on the effectiveness of economic policy and financial regulation (**section 2**), the reasons why an articulated approach is essential to finance the transition and to maintain financial stability (**section 3**), and the constraints facing the implementation of an articulated approach (**section 4**).

² These are matters of economic policy and will not be discussed in this note.

³ In particular, environmental standards (construction of new buildings, new vehicle emissions, etc.).

⁴ Prudential policy covers microprudential instruments designed to ensure the safety of individual institutions and macroprudential instruments designed to protect the financial sector from systemic risk.

⁵ Given the independence of central banks in monetary policy matters, monetary policy occupies a special place in government policy. It is not covered in this note. However, central banks have gradually taken up the issue of climate change.

1. THE SILO APPROACH IS INCONSISTENT WITH THE CLOSE LINKAGES BETWEEN THE ECONOMY AND THE FINANCIAL SECTOR

Although academic research readily takes a global view of the economic, financial and monetary policies needed to address climate warming, these different policies are largely designed separately by policy makers today. This division is so firmly entrenched that there is a tendency to forget the strong

linkages that exist between the economy and the financial sector, and thus necessarily between economic policy and financial regulation. Yet these linkages do exist, and result especially from two mechanisms.

1.1. The existence of a linkage through the stability of the financial sector

As a rule, there is a strong linkage between the economic policy in place and the situation of the financial sector. For example, rising unemployment reduces the income of households and increases their default rate on bank loans; similarly, a property crisis characterised by a reduction in new construction and in property prices negatively affects the situation of property sector companies and their capacity to repay banks. This increase in defaults on loans impacts the profitability of banks and may affect the solvency of some of them, or jeopardise the stability of the financial sector as a whole.

This linkage is important in the fight against climate change: economic policy, in particular fiscal policy and economic regulation, must be used first to facilitate an early, orderly transition to a carbon neutral economy (mitigation policy) and, second, to increase the resilience of economic agents to the impacts of climate change (adaptation policy). These policies, if implemented early, reduce climate risks (by facilitating the transition) and their financial impacts (by accelerating adaptation), which ultimately maintains the stability of the financial sector (since the risks to which financial players are exposed will be lower and better anticipated).

Where prudential regulation is concerned, the goal is to directly increase the resilience of financial institutions to the impacts of climate change. It does so by adjusting prudential rules and encouraging financial institutions to improve the management of their climate risks. The goal of ensuring better climate risk management and increasing bank resilience to such shocks is to prevent a systemic crisis.

When financial sector stability is maintained in this way, the public authorities avoid having to bail out the financial sector (in particular banks) to maintain confidence in financial actors. It thus ultimately prevents a shock on fiscal balances. Conversely, we have seen the considerable cost to public finances of the 2007-2008 financial crisis^{6,7}, or, more recently, of the US regional banking crises caused by rising interest rates⁸.

We thus see that there is a feedback loop between economic policy and financial regulation (O. Bodin - 2023).

6 For example, D. Lucas (Sloan School of Management, MIT) estimates the cost of US bailouts at around 500 billion dollars, or 3.5% of US GDP in 2009 (D. Lucas - 2019).

7 The global cost of the 2007-2008 financial crisis is higher than the cost of bailing out failing financial actors alone; it must take account of all additional expenditure (including spending on economic recovery) and loss of revenue resulting from the crisis. By way of illustration, G. Mukunda assessed this global cost at more than 2 trillion dollars (G. Mukunda - 2018).

8 It is still too early to estimate the cost of bailing out the four US regional banks in spring 2023. On 1 May 2023, the Washington Post estimated that the FDIC had so far used around 35 billion dollars to take over, or for JPMorgan to take over, the failed banks. At this stage, the cost should be borne by all of the financial institutions guaranteed by the FDIC.

1.2. The existence of a linkage through the financing of the economy

As we have just seen, the economic situation impacts the situation of the financial sector, but the opposite is also true. Public policy makers are concerned about this relationship due to the key role played by the financial sector – in particular by banks in Europe – in the financing of the economy. Yet this essential financing of the economy can be jeopardised by financial sector instability, resulting from the occurrence of endogenous or exogenous risks, but also by prudential rules that may alter the financing decisions of financial actors.

A number of examples illustrate this relationship:

- The financial crisis in 2007-2008, which was endogenous to the financial sector, nevertheless rapidly and heavily impacted the economy, which was at risk of insufficient financing for its functioning. This is why the public authorities intervened massively to safeguard the stability of the financial sector (Banque de France - 2010).
- The strengthening of banking prudential regulation that followed this very serious crisis (package of reforms known as “Basel III”) was accused of threatening the financing of the economy through excessive prudential requirements (in particular in terms of capital and liquidity). The supervisors then strove to demonstrate that the impact was limited (BIS - 2019). The empirical work conducted showed that the impact of strengthening prudential regulation on credit growth did exist, but was relatively limited in scope and especially in duration (transition phase before finding a new balance) (I4CE - 2021a).
- During the strengthening of prudential requirements for banks (transposition of Basel 3), the European Union deemed it necessary to take prudential measures to facilitate the financing of certain specific economic sectors: the SME supporting factor and the infrastructure supporting factor. Although the impact of these measures on the financing of SMEs is disputed (EBA - 2016), the objective was clear: preventing overly restrictive prudential measures from limiting the financing provided by banks to European SMEs (or to infrastructure projects for the other mechanism) (I4CE - 2020a).
- The onset of the COVID pandemic also provided a new example of this linkage: faced with the sharp economic slowdown resulting from the confinement measures implemented in numerous countries, the public authorities decided to take economic measures to support the sectors concerned. These included the easing of prudential measures to support the financing of the economy and thus to counter the economic downturn (BIS - 2020).

There is thus a close linkage between the economic situation and the financial sector. This linkage means it is essential to articulate more closely economic policy and financial regulation, especially the need to “adjust” prudential regulation to avoid obstructing the financing of the economy. Despite these linkages, economic policy is generally treated separately from financial regulation. This silo approach – marked by a failure to exploit synergies and complementarities – is particularly damaging when it comes to combating climate change. Climate change has some unique characteristics: it is inevitable, given the emissions that have already occurred and the inertia of climatic phenomena, even if there is still uncertainty about its scale and characteristics; it is also irreversible and long-term. Finally, it requires a profound transformation of economic activities and social behaviour. But, unlike pandemics, it can be reduced by a policy of mitigation, and its effects can be limited by a policy of adaptation.

2. THE SILO APPROACH UNDERMINES THE EFFECTIVENESS OF BOTH ECONOMIC POLICY AND FINANCIAL REGULATION IN RESPONSE TO CLIMATE CHALLENGES

Despite the strong linkages that exist between the economy and the financial sector, certain assumptions prevent these linkages from being taken into account; on the contrary,

they result in economic policy and financial regulation being considered independently and with separate objectives.

Assumptions leading to a silo approach to economic policy		
Priority given to the price signal to foster the transition of non-financial and financial actors	Efficiency of financial markets to finance the transition	Supervisors “narrow” risks approach to maintain financial stability

It should be noted that the first two assumptions also support the approach favouring the “neutrality” of monetary policy with regard to climate change. This silo approach translates

into less effective economic policies and financial regulation to mobilise financial actors in response to climate challenges.

2.1. Three assumptions explain the prevalence of the silo approach

This institutional “division of labour” is largely a legacy of the 1980s, including in the case of monetary policy, which was differentiated from “credit policy”. At that time, the governments of developed market economies largely abandoned the possibility of intervening directly in specific private investment decisions.

First, this situation reflects the **predominant vision of economists**. Indeed, the vast majority of them advocate prioritising the use of the price signal to foster the net-zero transition. This signal is expected to align the incentives of economic agents (non-financial companies, households, local authorities and financial institutions) and overcome the main market failure in terms of climate change: the impact of carbon emissions is not internalised by markets, in particular financial markets, which prevents economic agents from making rational decisions (Stern - 2008). From this perspective, economic policies must therefore give priority to reducing this failure in order to reduce GHG emissions. The instrument to be used is the establishment of a carbon price in one form or another. Implicitly, it is considered that economists are capable of defining the “right” carbon price and its upward path, and therefore capable of measuring the

discounted costs of global warming (despite the difficult-to-predict tipping points) and conducting a cost-benefit analysis; the question of the discount rate used is therefore crucial.

Once an adequate carbon price has been established, there would theoretically be no need – in terms of climate transition⁹ – for further – more direct – action on the behaviour of financial institutions, which would automatically have to make financing decisions conducive to the net-zero transition. Introducing an appropriate carbon price is thus seen as the best option for economic policy.

This theoretical vision is prevalent in the structuring of economic policies (particularly the role given to financial regulation in financing the transition), even though the reality of economic policies in the European Union is more complex and also calls on other instruments¹⁰. This is also the case in other European countries such as Norway¹¹ for instance (P. Lenain - 2022).

Second, **the public authorities have faith in the effectiveness of financial markets to mobilise private financial actors** to finance the transition. The situation in

9 This means ignoring other aspects of the necessary global transition, including biodiversity, protection of the oceans, the fight against pollution, the just transition, and so on.

10 European energy/climate governance uses instruments other than price steering. The public authorities also provide a regulatory framework that helps to internalise the external effects of private activities, while leaving the private sector in control of its investments. This mixed approach is reinforced by the revival of industrial policy.

11 The success of electric cars in Norway is due not only to the price signal (tax incentives and electricity prices) but also to a series of regulatory incentives (right to use bus lanes or free parking, ferries and road tolls).

the European Union, reputed to be the most advanced of the developed economies in terms of the integration of climate change into financial regulation, is exemplary in this respect (EU Commission - 2018).

European financial regulation has been used primarily to establish a “climate information architecture” (according to the IMF terminology) to improve the integration of climate change into the functioning of financial markets (creation of a taxonomy, of information disclosure requirements for financial and non-financial companies, of standards and labels on “green products”, etc.). The underlying theory of these measures is always to correct the main market failure, in other words the failure to take account of environmental externalities in the pricing of financial assets. Regulation has also sought to integrate climate risks (through ESG risks) into risk management by banks and insurance companies (and into their disclosure requirements - see pillar 3 of EBA), and into fund management¹².

In the context of these new disclosure and behavioural requirements, the public authorities have so far relied on financial actors to voluntarily make changes in their activities in favour of the net-zero transition. The hopes placed in the future Single Capital Market to finance the transition is another illustration of this confidence in the markets.

Third, this situation reflects the **strong reluctance of financial supervisors in market economies**¹³ – especially banking – to **use prudential regulation and supervision for objectives other than maintaining financial stability**¹⁴. Indeed, banking supervisors have so far taken account of climate change based on the systemic risk that could result from it (M. Carney - 2015) and on the risk of “green swans” occurring (Bolton *et al.* - 2020). From 2015 onwards, they thus began to take account of climate risks in their supervision practices, mainly micro prudential supervision (especially with the creation of the NGFS¹⁵ in December 2017). In particular, they set their “expectations” in terms of the integration of climate risks into risk management by banking establishments; this is, for example, the case of the European Central Bank (ECB - 2020). The ECB then assessed the implementation of its recommendations and even set capital add-ons for certain banks that were particularly lagging behind (ECB - 2022 a).

In addition, the financial supervisors sought to assess the exposure of banks and insurance companies to climate risks. Based on the work of the NGFS concerning transition scenarios, they thus began to integrate climate risks into exercises inspired by the “stress tests” of supervisors (see, for example, ECB - 2022b). For its part, the Basel Committee on Banking Supervision has worked to incorporate climate risks into bank risk management and banking supervision (BCBS - 2022 and BCBS - 2023).

But banking supervisors from the developed market economies have so far refused to use prudential supervision and regulation beyond this “narrow” approach to risk, giving different arguments:

- this does not correspond to their mandate, which is to maintain financial sector stability. Economic policy alone should take responsibility for economic policy objectives, especially to foster the transition to a carbon neutral economy.
- prudential tools should be solely based on an accurate measurement of the financial risks that they are intended to prevent.
- the use of prudential regulation for purposes other than risk prevention could be harmful to financial sector stability.
- furthermore, for some supervisors, if the inclusion of climate risks in prudential regulations leads to better pricing of these risks by financial institutions, it should also lead to a better allocation of financial flows based on the risk/return trade-off. A promotional policy would therefore not be necessary¹⁶ (I4CE - 2023b).

12 These requirements should shortly be supplemented by a due diligence requirement on human rights and environmental impacts (but excluding climate change, which should be the subject of specific, more limited provisions).

13 Mainly supervisors from developed market economies, since the situation is different in the countries of the global South.

14 It should be noted that the position of market supervisors is different: responsible for market transparency and investor information, their approach does not prioritise the maintenance of financial stability. In Europe, based on the principle of double materiality, they seek greater market information dissemination concerning the climate risks facing companies and the environmental impacts of the activity of these companies.

15 NGFS: Network of Central Banks and Supervisors for Greening the Financial System.

16 This note does not address this aspect of the discussion on the effectiveness of the risk-based approach adopted by supervisors: to what extent and under what conditions could the risk-based approach promote the financing of the transition? This issue is examined in detail in another publication which shows the limits of this mechanism (I4CE - 2023 b).

2.2. This silo approach undermines the effectiveness of both economic policy and prudential regulation in response to climate challenges

The assumptions underpinning the silo approach to economic policy and financial regulation come up against the reality of the functioning of financial markets and the difficulties inherent in the integration of climate challenges.

2.2.1. Mitigation and adaptation policies have fallen behind schedule due to the difficulties encountered

There are major obstacles to the effectiveness of economic policies based on price signals:

- social and political factors have impeded the rapid implementation of the price signal through the establishment of a sufficiently high carbon price (for example, the “yellow vests” movement in France in 2018, or the difficulties encountered in 2022 to make the European carbon price system more efficient). Carbon pricing also comes up against technical implementation difficulties, which slow its development.
- carbon prices appear to be less effective than economists had hoped. For example, simulations carried out by the OECD tend to show that even high carbon prices alone would not be enough to achieve carbon neutrality (D’Arcangelo F. *et al.* - 2022).
- financial markets are imperfect (S. Kogstrup and W. Oman - 2019) and there are other market failures that prevent financial markets from reaching market efficiency (E. Campiglio and F. Lamperti - 2021). Thus, the transmission of the price signal, even where it does exist, faces obstacles that seriously reduce its effectiveness.
- the effects of technological lock-up – investments made today commit to a technology for decades to come – are an obstacle to reducing emissions and respecting the carbon budget. These effects (non-reversibility of investments) are not taken into account by the financial markets.
- finally, there is inertia in the behaviour of financial institutions, which tend to prefer to finance the high-carbon technologies they know better (and which are profitable), rather than new, less profitable technologies.

Complementary avenues must therefore be explored to address the slow implementation of carbon pricing (and thus its level, which is likely to remain insufficient for a long time) and the insufficient effectiveness of the price signal itself. Other economic policy instruments must be used (budgetary or fiscal policy, environmental regulation, etc.) to complement the price-signal policy. And the question is whether financial regulation could also play a complementary role.

This lack of a complementary approach also weakens the budgetary policies pursued, which do not take full account of the expenditure that will be needed over a long period to achieve the transition. It also results in a lack of coherence between the transition scenarios on which the financial regulators base themselves (which systematically refer to a warming objective limited to 1.5°C) and those which correspond de facto to the budgetary and fiscal policies put in place by the European governments and which are not yet aligned with such a trajectory.

2.2.2. Public policy makers need to acknowledge the limitations of the financial regulations implemented and the approach adopted

It is clear that the financing gap between investment needs for mitigation and adaptation and the amounts actually invested remains at a very high level; in Europe, the European Investment Bank evaluates this financing gap at 360 billion euros (EIB - 2023). But the transition does not only require investment in “green activities”; it also requires drastically reducing, and sometimes ceasing, the most GHG-emitting activities that cannot be decarbonised. Financial flows must therefore evolve in this direction. The financing of fossil energies – in particular by banks – continues, including for new projects. The International Energy Agency estimates that \$118 billion will have been invested in this area by 2022 (energy extraction and production), an amount that has increased by 5% a year over the last 5 years (IEA - 2023). This development comes at a time when the IEA has stressed the urgent need to cease new fossil energy production projects (IEA - 2021).

In fact, the approach adopted by the public authorities is coming up against major obstacles:

- the implementation of transparency rules on climate is long and complex. It began in France in 2015 (art. 173 of the French Energy Transition for Green Growth Law - LTECV) and was continued in Europe from 2018 (EU Action Plan on Sustainable Finance), but encounters various technical difficulties (concerning the relevant metrics and the most reliable methodologies), which translate into long development and implementation timelines¹⁷.
- this greater transparency on climate risks and the impacts of company activities has resulted in an increase in the information produced; but it should be noted that it is struggling to produce tangible and significant effects on financial actors’ behaviour. Regulations aimed at improving market information – however useful these may be – will be slow to produce significant effects (ACPR-AMF - 2022).

17 See the timelines for the implementation of the Sustainable Finance Disclosure Regulation or the Corporate Sustainability Reporting Directive.

- more fundamentally, this approach adopted by the public authorities comes up against intrinsic obstacles. It is based on the idea that financial players will themselves redirect financial flows in favour of the transition thanks to this increased transparency of information. In fact, voluntary private initiatives have proliferated, especially at the international level, and involve a large number of actors who are committed to implementing a net-zero transition. But it seems unrealistic to think that these voluntary initiatives will be sufficient to massively redirect private financing for the transition given the prevalence of the risk/return trade-off in the decisions of financial institutions (I4CE - 2022b).

2.2.3. The current prudential approach faces some major obstacles

The “narrow” approach to risk taken so far by banking regulators and supervisors has focused heavily on integrating climate risks into supervision practices without changing prudential ratios (especially capital or liquidity). Supervisors consider that this is the only approach possible at present to ensure banks improve their climate risk management, since the level of climate risks cannot yet be accurately measured. But this approach by banking supervisors aiming at measuring precisely climate related risks encounters fundamental difficulties linked to the very nature of climate change: while climate change is certain, the extent, timing and forms of its manifestations are highly uncertain.

Climate risks (both transitional and physical) are characterised by a high degree of uncertainty resulting both from the complexity of climate causal chains (with the existence of tipping points likely to accelerate change) and from uncertainties linked to the transition itself (economic policies implemented, technological breakthroughs, societal changes, etc.). As a result, climate risks are characterised by a radical uncertainty that distinguishes them from risks in the traditional sense, for which a probability of occurrence can be calculated (Chenet *et al.* - 2021). This radical uncertainty makes it impossible to use the classical probabilistic approach to prudential rules that estimate the risk of loss (and therefore the capital charge needed to cover it) on the basis of historical risks (I4CE - 2019; Bolton *et al.* - 2020). The integration of climate risks into prudential rules (and in particular pillar 1 capital requirements¹⁸) thus encounters fundamental difficulties¹⁹. The search for technical solutions to accurately measure climate risks will, at best, take too long in relation to the urgency of climate change and the transition or, at worst, never succeed if this radical uncertainty cannot be removed.

The approach adopted that prioritises pillar 2 measures also has limitations. The strengthening of banking risk management systems, however essential, cannot alone effectively prevent systemic risk. And the “climate stress tests” launched by supervisors face difficulties. In addition to the lack of historical data, they come up against the insufficient granularity of the data (I4CE - 2023a); they also tend to use assumptions that are more optimistic than the IPCC scenarios (see, for example, F. Baudoin - 2022). All in all, they almost certainly underestimate the risks, according to the supervisors themselves (FSB-NGFS - 2022) and are far from being able to serve as a basis for a broad-based increase in banking sector prudential requirements.

This “narrow” prudential approach to climate risks is therefore in deadlock with respect to the objective of financial stability. In this situation, there is a need to favour an approach based on the “precautionary principle” that removes the need to accurately measure risks, in favour of a preventive and systemic approach to the financial risk resulting from climate change (H. Chenet *et al.* - 2021 - G. Le Quang and L. Scialom - 2022).

All in all, the absence of a coherent, coordinated climate policy mobilising all the levers of economic and financial policy makes it impossible to benefit from the complementary effects that make public action more effective.

18 The pillar 1 rules of banking prudential regulation define the capital requirements of banks based on an analysis of the risk levels of different types of banking assets.

19 However, as previously mentioned, supervisors have more flexibility to adjust prudential requirements according to climate risk in the context of pillar 2, especially through the qualitative assessment of internal climate risk management procedures.

3. AN ARTICULATED APPROACH OF ECONOMIC AND FINANCIAL POLICIES IS ESSENTIAL TO FINANCE THE TRANSITION AND TO PREVENT SYSTEMIC RISK

Better coordination of economic policies and financial regulation alone cannot resolve all the difficulties involved in implementing the transition and mobilising its financing. Clearly, the problem is more complex²⁰ and calls for a variety of solutions (*i.e.* a set of coherent, credible and long-term economic and fiscal policies²¹). The position defended here is to show that financial regulation is currently underused and that giving it a more proactive role could help to improve the effectiveness of economic policies.

The proactive role of financial regulation should be based on a more integrated approach to economic policy and financial regulation. The note recommends that the choice, calibration, and implementation of the various tools available to public authorities should be coordinated and made consistent in order to improve the effectiveness of public action. In practical terms, this means that financial regulation must be used as part of a clear strategy defined by the government to improve the effectiveness of public action to finance the transition. In so doing, financial regulation could strengthen action in favour of transition and contribute more effectively to controlling the systemic risk potentially created by climate change.

The arguments developed by the academic literature to use a wide range of economic policy instruments in order to address climate warming are based on the complexity of this phenomenon: the many market failures – beyond the

non-integration of environmental externalities –, as well as the interdependencies, tipping points and uncertainties. In addition, political considerations make the use of certain tools more appropriate than others. In this context, economic policy instruments, financial policy instruments and monetary policy can all play a role (S. Kogstrup and W. Oman-2019).

Numerous analyses insist on the importance of coordinating the use of these different instruments (Bolton *et al.* -2020). But little research has been conducted on the best “policy mix” to be implemented and on the instruments to be prioritised in this mix in order to maximise its effectiveness in relation to the context (S. Kogstrup and W. Oman-2019).

We will focus here on the coordination and articulation of general economic policy (fiscal policy, environmental regulation and industrial policy) and financial regulation in the context of an integrated approach. Indeed, it is vital that they are no longer considered independently of one another. On the contrary, it is important to analyse the mechanisms that will enable financial regulation to improve the effectiveness of economic policy for financial actors, and how economic policy and financial regulation can be coordinated to this end. Moreover, it is essential to determine why an integrated approach would be more effective in preserving financial stability than the current prudential approach.

3.1. Financial regulation can improve the transmission of economic policy to financial actors

The existence of an appropriate economic policy to tackle climate change is an essential prerequisite that cannot be replaced by financial regulation. But the close articulation of economic policy and financial regulation (including prudential) can improve the effectiveness of economic policy.

Financial rules – including prudential rules – on the one hand structure the financial system (entry rules for players in the sector and definition of authorised or prohibited activities) and,

on the other hand, seek to influence the behaviour of financial institutions, either by imposing rules (concerning information disclosure, remuneration policies, due diligence, etc.), or by creating incentives to change this behaviour (introduction of labels and standards, prudential requirements concerning capital or liquidity, etc.). These rules have characteristics that can be used to improve the effectiveness of classical economic policy instruments in certain circumstances.

20 Particularly at European level, where it is necessary to do so between 27 countries.

21 It might be pointed out that the actions of public authorities are sometimes contradictory and that different measures cancel each other out. This is the well-known case of fossil fuel subsidies, which weaken measures aimed at discouraging carbon emissions. This was particularly marked in 2022 and the first half of 2023 with massive subsidies for carbon energies following Russia's invasion of Ukraine and its effects on the price of oil and natural gas. Less well known, but nonetheless important, are the tax breaks granted to sectors subject to the European carbon market: many companies are reimbursed or exempted for their expenditure on the purchase of emission rights, both in France and Germany. The same applies to the reimbursement of the ecological penalty.

3.1.1 Financial rules can be rapidly mobilized to supplement the other economic policy instruments.

Considerable financial resources need to be mobilised and redirected to drive the transition and to enable economic actors to adapt, and all instruments must be mobilised to steer financial markets in this direction, over and above what classical economic policy instruments can achieve. However, financial regulations have the advantage of being relatively quick to implement. Because fiscal instruments are not in place – or at least not yet to the level required – and because market prices still do not sufficiently internalise climate change, rapid action is needed to strengthen capacities to tackle climate change. Financial regulation can contribute to these rapid measures, in conjunction with an overall economic policy. In particular, it is less “politically costly” to implement than fiscal instruments (see the political and social difficulties of implementing carbon taxes in numerous countries). There is in fact a consensus on the need to regulate the activity of financial institutions in order to reduce the risks of financial instability (G. Barba Navaretti *et al.* -2021). Financial regulation can therefore increase the effects of fiscal policy, which takes longer to implement and is therefore more progressive in its effects.

3.1.2 Financial regulation can improve the effectiveness of economic policy instruments

It can intervene to adjust decision making criteria for financial actors when the price signal is not strong enough or when economic policy instruments come up against market failures other than the failure to integrate climate externalities. It can play in different ways:

- Financial regulation cannot make up for the absence of a price signal conducive to the transition. But it can **improve the effectiveness of an insufficient price signal**. It can do so using micro-prudential instruments such as capital requirements or macro-prudential instruments, such as systemic capital buffers (see box below).

EXAMPLES OF PRUDENTIAL INSTRUMENTS TO REINFORCE THE EFFECTIVENESS OF THE PRICE SIGNAL

- Penalization by very high capital requirements applied to banks for the financing of activities that are the most contradictory to the transition and that must be stopped quickly (extraction of thermal coal, extraction of non-conventional hydrocarbons, new fossil fuel production capacities) (Finance Watch - 2021);
- Reinforcement of micro prudential capital requirements on the production and exploitation of other fossil fuels (conventional oil and natural gas) to encourage banks to implement policies for the gradual withdrawal of these fuels in line with public carbon neutrality strategies. Such a strengthening of requirements must be used with caution to avoid unintended negative consequences (I4CE - 2021 b);
- Implementing prudential tools such as systemic capital cushions to force banks to strengthen their capital to cope with the risks inherent in financing certain highly emissive activities from which banks must gradually withdraw (conventional oil and natural gas) (P. Monnin - 2021). This prudential instrument could be an alternative to the micro prudential requirements mentioned above.

- Financial regulation can also help to **overcome difficulties concerning the transmission of the price signal**. Indeed, some market failures inherent in financial markets are not easy to overcome using classical economic policy instruments. This is the case in particular of information asymmetry, the short-termism of financial actors or the “tragedy of the horizon” (financial actors cannot easily incorporate medium- and long-term issues in their decision-making processes). Financial regulation can then use other transmission channels on decision-making by financial actors. This goal can be achieved by obliging financial actors to take account of the net-zero transition objective in their decision-making mechanisms to supplement the risk-return profile. Various instruments are available (see box below).

EXAMPLES OF INSTRUMENTS TO OVERCOME DIFFICULTIES IN TRANSMITTING PRICE SIGNALS

- Banks required to adopt and comply with a prudential transition plan meeting standards defined by financial regulations, under the oversight of supervisors. These transition plans would define the banks' objectives for aligning all their activities with a trajectory compatible with limiting global warming to 1.5°C, and the tool kits used to comply with a roadmap compatible with this objective (I4CE - 2022 a). Supervisors could use a range of instruments to force banks to implement these transition plans, including by imposing an additional capital cushion for those that are not aligned (Dikau *et al.* 2021).
- Obligation for all financial players to integrate transition objectives (e.g. those defined in transition plans) into remuneration policies of executives and operational managers in the business lines affected by the transition (I4CE - 2022 a).
- Implementation of sectoral leverage ratios penalising the financing of high-carbon sectors. In addition to the existing leverage ratio (which aims to cap the ratio of total unweighted assets to equity), these sectoral leverage ratios would impose a more rigorous standard regarding certain economic sectors that are particularly carbon intensive.

- Finally, financial regulation can **contribute to overcoming the “legacy problem” of banks** caused by the presence of potentially stranded assets on their balance sheets, which reduces their incentive to foster a rapid transition.

EXAMPLES OF INSTRUMENTS TO ENCOURAGE BANKS TO MANAGE LEGACY PROBLEMS:

- Introduction of preventive rules for taking potentially stranded assets into account when calculating capital (e.g. through higher weightings);
- Inclusion in the provisioning rules (by analogy with the “dynamic provisioning” system implemented by certain regulators to combat the onset of property booms): obligation for banks to progressively provision fossil fuel-related liabilities as of now, without waiting for these liabilities to become “non-performing” according to prudential rules. The provisioning could, for example, apply to the share of financing granted to certain sectors that is in excess of the carbon neutrality trajectories defined by public strategies.
- Requirement for banks to include potentially stranded assets in their mandatory transition plans (see above).

The use of prudential requirements raises an operational difficulty that should not be overlooked: increasing the requirements imposed on banks risks diverting activity towards unregulated players (“shadow banking”) without solving the underlying problem (*i.e.* the financing of issuing activities). This implies that a global approach should be favoured to cover as many private financial players as possible in terms of sectors and countries.

To improve the effectiveness of economic policy, financial regulation must be closely articulated with it

It is important to ensure **the coherence of the objectives set and the references used** in the context of both policies. This is the case in particular for net-zero emission objectives which can be used by economic policy and financial regulation: which time horizon is set? Which definition should be used?). This consistency must also be respected for the transition scenarios used to define these net-zero objectives (scenarios at the international level but also and especially at the national and sectoral levels).

It is also important to use common references, particularly to distinguish between what is “green” and what is not. One example is the debate between an essentially binary “green taxonomy” (distinguishing between “sustainable” and “non-sustainable” activities), such as the European taxonomy, and a non-binary taxonomy (that enables a better integration of activities that are not yet “sustainable” but in the process of transition) which is advocated by certain states and financial actors).

The articulation of the two policies must also be dynamic. In some cases, financial regulation can pre-empt economic policy, which may take longer to implement (see the example of the establishment of a carbon price), and thus act as a relay. Economic policy may then sometimes be able to build on developments in financial regulation. In this respect, it is worth noting the example of the EU taxonomy for sustainable activities, which was paradoxically the first to define sustainable activities at the regulatory level – a definition that is nevertheless useful for all economic actors. In other cases, it is economic policy that sets out a framework on which financial regulation must build, especially where

sectoral policies are concerned (for example, the renovation of housing, the development of renewable energies, policies for the development of new forms of mobility, etc.).

The two policies must also be coordinated to **ensure consistency²² and complementarity of instruments**. For example, it would make no sense to impose stricter prudential requirements on banks regarding the financing of fossil fuel activities if, at the same time, economic policy continues to subsidise the same fossil fuels (a long-standing practice in many European countries that was further reinforced during the energy crisis linked to the war in Ukraine).

An ambitious policy to speed up the energy renovation of homes provides a good example of how a combination of different instruments is needed to overcome the many obstacles: environmental standards (restrictions on lettings and/or transactions based on energy performance diagnoses), tax incentives (renovation bonuses), training (for tradespeople), decision-making rules in condominiums and private financing (introduction of bank loans at preferential rates²³ to take over from eco PTZ²⁴-type loans).

Complementarity can also be used to decide on the “mix” of different instruments (for example, financial regulation could make it possible to rely less on fiscal policy in situations where there are tight constraints on public finances (O. Bodin-2023)).

An articulated approach will help to more effectively meet the financial stability objective

So far, this section has explored the advantages of financial regulation – including prudential – to contribute to the effectiveness of more traditional economic policy instruments. It will now address the serious reservations of financial supervisors regarding this use of prudential rules. The argument advanced by this note is that the use of prudential rules in the context of an integrated approach would enable supervisors to overcome the obstacles they currently face (see above) and to meet their objective of financial stability more effectively.

The articulated approach makes it possible to take account of a fundamental characteristic of climate risk: its **largely endogenous nature**. As characterised by the concept of “double materiality”, not only are financial institutions affected by the consequences of climate risk – financial materiality – but they also contribute to climate change through the financing granted to emitting activities – environmental materiality – (I4CE-2023 b). Thus, from a systemic perspective, we can consider that the financing granted today by financial institutions contributes to the emergence of physical and transition risks, which could become systemic tomorrow (Boissinot *et al.* -2022).

Reducing this financing and redirecting it towards transition would therefore make it possible to reduce the systemic climate risk as a preventive measure. Even if there is a great

deal of uncertainty about the impact of economic policies, which will have to be constantly tested and adjusted, we know that we can rely on two preventive actions:

- **facilitating a rapid and orderly transition** reduces the transition risks (which are particularly high if the transition is disorderly and/or delayed) and the physical risks (since the increase in temperature will be reduced in relation to the current trajectory).
- **facilitating an adaptation policy** for economic actors (especially companies and households) reduces the financial impact of the physical climate risks that we are unable to avoid.

Fostering the financing of the net-zero transition and of a well calibrated adaptation policy is therefore the best way to reduce climate risks for the financial sector and the associated systemic risk. By implementing prudential instruments to foster this financing of the transition and of adaptation (see the instruments presented above), financial supervisors – in particular banking and insurance supervisors – do not depart from their mandate. On the contrary, they adopt the most effective approach to fulfil it.

To succeed in this, the focus must no longer be on achieving a perfect measurement of risks, an illusion to which supervisors do not succumb, for example, when it comes to mitigating the risks of a real estate bubble. On the contrary, they need to accept to reduce the level of sophistication of implementation mechanisms for non-conventional policies (E. Campiglio and F. Lamperti -2021).

Indeed, we have already seen that a **precautionary approach** is needed to overcome the limitations of the current prudential approach: instead of trying to accurately measure climate risks in order to integrate them into prudential ratios, the focus should be on minimising risks preventively and being prepared to set “conventional” prudential rules (*i.e.* rules that do not depend on the level of risk but on the desired impact on the reallocation of financial flows). These “conventional” rules would in turn influence market conventions and hence the assessment of climate-related financial risks. A “public” convention would thus guide private conventions since the probabilistic approach is ineffective in the field of financial climate risks. This is nothing new, since this preventive approach is an integral part of the macro-prudential process developed by supervisors all over the world further to the financial crisis of 2007-2008 (FSB-IMF-BIS-2011). It has thus been implemented in a certain number of countries (for example by setting capital surcharges to mitigate the risks of a real-estate bubble, without basing this on an accurate measurement of the risks involved). Moreover, these rules could be adjusted as experience is gained.

The table below summarises the advantages in terms of the effectiveness of an integrated approach to economic policy and financial regulation.

²² It is assumed that this coherence is ensured within economic policy itself (for example, the elimination of subsidies for fossil fuels).

²³ Central banks could also promote these loans through various types of mechanism.

²⁴ PTZ loans are Zero interest loans.

3. AN ARTICULATED APPROACH OF ECONOMIC AND FINANCIAL POLICIES IS ESSENTIAL TO FINANCE THE TRANSITION AND TO PREVENT SYSTEMIC RISK

ADVANTAGES OF THE ARTICULATED APPROACH	ILLUSTRATIONS
1/ Improving the effectiveness of economic policy transmission to financial actors	
<ul style="list-style-type: none"> • Instruments can be mobilised quickly 	<ul style="list-style-type: none"> • “Politically” less costly to implement
<ul style="list-style-type: none"> • Strengthening an insufficient price signal 	<ul style="list-style-type: none"> • Very high capital requirements for the activities most harmful to the transition (e.g. coal or new fossil energy production capacities) • Stricter capital requirements for other fossil energy financing • Systemic capital buffers for the most emissive activities from which banks must gradually withdraw
<ul style="list-style-type: none"> • Using other transmission channels to influence the decision-making criteria of financial actors 	<ul style="list-style-type: none"> • Mandatory transition plans for banks under supervisory control • Remuneration policy taking account of transition objectives (for all financial actors) • Sectoral exposure limits imposed on banks for the most emissive activities • Sectoral leverage ratios to penalize financing for high-carbon sectors
<ul style="list-style-type: none"> • Overcoming the “legacy problem” of banks 	<ul style="list-style-type: none"> • Factoring potential stranded assets into mandatory transition plans for banks • Inclusion in targeted capital requirements • Dynamic “provisioning policy” to anticipate the emergence of “stranded assets”
2/ Improving the effectiveness of prudential policy	
<ul style="list-style-type: none"> • Implementing a preventive policy to take into account the endogenous nature of climate risks 	<p>Use of the instruments described above to:</p> <ul style="list-style-type: none"> • Reallocate financial flows to promote transition in order to reduce physical and transition risks • Reallocate financial flows to accelerate adaptation and reduce the financial impact of physical risks
<ul style="list-style-type: none"> • Using a precautionary approach 	<ul style="list-style-type: none"> • Use of conventional rules (i.e. not based on the level of risk but on the desired impact on the reallocation of financial flows) to calibrate the prudential tools described above

4. THE IMPLEMENTATION OF THIS NEW PREVENTIVE APPROACH MUST RESPECT CERTAIN CONSTRAINTS

The use of prudential instruments to foster the financing of the transition must integrate some constraints. It will in fact

be faced with four types of potential conflicts: of objectives, of time horizon, of intervention level and of mandate.

4.1. Conflicts of objectives

In this new context, conflicts of objectives could arise between the search for a direct reduction in risks and the redirection of financing towards the transition. For example, supervisors have regularly stressed the fact that fostering the financing of so-called “green” assets by reducing the capital requirements attached to these assets could both reduce the resilience of banks (due to a smaller capital buffer available to them) and increase other risks for banks (resulting from new technologies or from uncertainty regarding the development of a sufficient market).

This conflict of objectives exists – many examples can be given – and supervisors are right to be concerned about

it. They will need to give special attention to identifying these conflicts of objectives in all of their actions and to developing suitable responses on a case-by-case basis in order to manage them more effectively. One avenue worth exploring to overcome this difficulty would be to specialise the instruments (different instruments are used to achieve different objectives) and to use them under constraint (for example, the reduction in capital requirements could not be used to favour the financing of certain activities). This could also lead supervisors to innovate in order to develop new risk management tools.

4.2. Conflicts of time horizons

This note advances the idea that fostering the financing of the transition is the most effective means of reducing the systemic risk resulting from climate change. However, it must be recognised that although this policy appears to be well-founded in the medium and long term (in particular enabling effective management of stranded assets), there is a possibility that it could give rise to other risks in the short term. We have already mentioned the case of a reduction in capital requirements in favour of “green financing”, which could create short-term risks (risks linked to new technologies) with the aim of facilitating the transition in order to reduce systemic risk in the longer term. But we can imagine other risks linked to:

- The uncertainty of the public authorities regarding the best transition pathway to follow or the absence of an operational transition path;
- The “noise” that will necessarily accompany the definition and implementation of a far-reaching policy to foster the transition;

- The sudden stranding of certain assets in the fields of activity that will be the most rapidly and seriously impacted by the transition policy (for example the extraction and use of thermal coal). The value of certain assets could thus fall sharply. Provisions would be required, but they are currently inadequate since information is lacking at this stage and incentives are not appropriate (since the specific rules envisaged have not yet had time to produce effects).

The existence of these potential conflicts of time horizon is one of the reasons for which supervisors should not drop their guard when it comes to individual supervision, even if the proposed approach aims to favour a systemic approach to risk. It is also a reason for regulators to test innovative solutions²⁵.

25 For example, using regulatory sandboxes to test solutions enabling financial institutions to manage certain assets on their balance sheet that could become “stranded”.

4.3. Conflicts of intervention level

The preventive approach proposed is the one that seems the most suited to avoiding the emergence of a climate-related systemic risk. Even if it leads to new regulatory constraints, this preventive approach will not deprive banks from their capacity to make decisions – in this new context – about their own business strategy and their development plan. The goal is not to avoid all individual risks – this would be unrealistic. Some banks will make poor financing choices or will have failing counterparts, even if overall, the financial sector as a whole is preserved.

This has two implications:

- It is important to use micro-prudential instruments (transition plans, targeted capital surcharges, exposure rules, provisioning rules, etc.) and macro-prudential instruments (systemic buffer based on global exposure to certain activities) in order to foster the financing of the transition at the level of each financial institution as well as at the level of the whole financial sector;
- At the same time, the individual surveillance of banks must be strengthened in order to increase the resilience of each institution (especially by improving risk measurement and management tools and through climate stress tests).

4.4. Conflicts of mandate

Supervisors often stress that their current mandate does not allow them to use prudential instruments for economic policy purposes. This is true in developed economies in general, in contrast to the prevailing situation in many emerging or developing countries, in which it is accepted that prudential policy must also serve the countries' economic development purposes (I4CE-2020 b).

But this note does not advocate changing the objectives assigned to supervisors or supplementing them with a new environmental objective. On the contrary, it argues that the best way for supervisors to fulfil their financial stability mandate is to implement a preventive and precautionary approach to climate change risks. This is what supervisors

already do – in the context of their current mandate – when they use prudential instruments (capital surcharge, dynamic provisioning, etc.) to prevent the emergence of speculative bubbles in certain economic sectors (e.g. real estate). With regard to climate risks, this preventive approach would consist in facilitating the financing of an orderly transition by redirecting financial flows to limit the financial risks associated with climate change.

In this context, the question of the supervisors' mandate will therefore have to be examined carefully to analyse the advantages and obstacles of such a change (see box below). But it is not clear that changing the supervisors' mandate is essential to implementing the proposed policy.

THE ADVANTAGES AND OBSTACLES OF CHANGING SUPERVISORS' MANDATES TO FACILITATE THE TRANSITION

The current mandates of banking supervisors in developed market economies differ, but they generally allow them to take account of all material risks to banks and to take measures to reduce systemic risks to the banking sector. Adding a sustainability objective to the supervisors' mandate would therefore make explicit a possibility that they already have implicitly; this would have the merit of clarifying the issue. This would have another advantage in that it would lengthen the horizon for supervisory action: whereas this is currently based on taking account of financial risks in the business cycle (3 to 5 years), an explicit sustainability objective would oblige them to take account of both short-term and longer-term risks.

But changing the mandate of supervisors also presents major difficulties. First of all, introducing a new sustainability objective could lead to further requests for extensions to include socially legitimate objectives (just transition, gender equality, etc.). Furthermore, introducing a new objective would put supervisors in the difficult position of having to arbitrate between the two objectives, which could at times be in contradiction. Such arbitration should be the responsibility of democratically elected governments. It should therefore be a secondary objective that complements the primary one. Finally, changing the mandate of supervisors may prove politically and institutionally difficult in certain countries or jurisdictions (such as the European Union). But action is urgently needed. It is a paradox that must lead them to follow a narrow ridge: governments are responsible for policies to promote transition and supervisors must take complementary measures to facilitate this action by moving cautiously towards a "legitimate promotional approach" (Megan Bowman 2022).

CONCLUSION

Finance will only be able to make its contribution to the transition – *i.e.* accompany the transformation of the economy – if governments have a clear strategy, coherent economic policies and operational transition planning processes that precisely identify the transition paths.

In this context, this note has analysed the complementarity and interdependence of economic policy (fiscal and environmental) and financial (including prudential) regulation for the financial sector; the failure of one of these policies limits the effectiveness of the other. The debate on the relative effectiveness of economic policy and financial regulation is not over, but there is a growing consensus that they need to be coordinated (P. Bolton *et al.* -2020).

This is why it is necessary to give operational content to an articulated approach to policies:

- this approach helps to improve the effectiveness of economic policy to address climate change by taking the appropriate steps to mobilise financial actors to finance the transition and adaptation;
- it also significantly limits the systemic risk induced by climate change, which the approach currently pursued by financial supervisors is unable to do.

The implementation of policy coordination is complex: economic policy instruments and financial instruments are numerous and their effectiveness difficult to estimate; moreover, they must be managed at two levels: European and national. The interplay between economic and budgetary policy-makers on the one hand, and financial supervisors on the other, must displace the prisoner's dilemma, despite the high degree of uncertainty about the policies actually implemented and their impact. On the contrary, we need to put in place a European framework that is more binding than at present, but that can be adapted in the light of experience.

BIBLIOGRAPHIC REFERENCES

- ACPR-AMF - 2022 « Suivi et évaluation des engagements climatiques des acteurs de la Place » Troisième rapport commun ACPR/AMF Octobre 2022
- Banque de France - 2010 « De la crise financière à la crise économique » Documents et débats N°3
- G. Barba Navaretti *et al.* - 2021 “Sustainability and Finance – Why and how?” European Economy – Banks, regulations and the real sector - 2021.2
- F. Baudoin - 2022 «Les stress tests climatiques, entre politique de stabilité financière et tentative de transition écologique» Université Paris Nanterre November 2022
- BCBS - 2022 “Principles for the effective management and supervision of climate-related risks” June 2022
- BCBS - 2023 “Consultative Document – Core principles for effective banking supervision » Basel Committee on Banking Supervision – July 2023
- Bolton *et al.* - 2020 “The green swan – Central banking and financial stability in the age of climate change” BIS-Banque de France
- BIS 2019 – F. Boissay *et al.* “Impact of financial regulations: insights from an online repository of studies” BIS Quarterly Review March 2019
- BIS 2020 – C. Borio and F. Restoy “Reflections on regulatory responses to the Covid-19 pandemic” Financial Stability Institute Briefs N°1
- O. Bodin - 2023 « Gouvernance économique et budgétaire européenne et dérèglement climatique : pour une application du principe de précaution face aux risques systémiques »
- E. Campoglio et F. Lamperti - 2021 “Sustainable Finance Policy-making: Why and how?” European Economy – banks, regulation and the real sector – 2021.2
- M. Carney - 2015 “Breaking the tragedy of the horizon – Climate change and financial stability” Speech given at Lloyd’s of London
- H. Chenet *et al.* - 2021 “Finance, Climate change and radical uncertainty: Towards a precautionary approach to financial policy” Ecological Economics 183 (2021) 106957
- Climate Policy Initiative - 2021 “Global Landscape of Climate Finance 2021”
- D’Arcangelo F. *et al.* - 2022 “Estimating the CO₂ emission and revenue effects of carbon pricing: new evidence from a large cross-country dataset” OECD Economic Department Working Paper N°1732
- S. Dikau *et al.* - 2021 “Climate-neutral central banking: How the European System of Central Banks can support the transition to net-zero” Grantham Research Institute, London School of Economics and Centre for Sustainable Finance -SOAS- London University
- D. Lucas - 2019 “Measuring the cost of bailouts” Annual Review of Financial Economics Vol. 11:85-108
- EBA - 2016 “EBA Report on SMEs and SME Supporting Factor” March 2016 EBA/OP/2016/04
- ECB - 2020 “Guide on climate-related and environmental risks – Supervisory expectations relating to risk management and disclosure” ECB Banking Supervision
- ECB - 2022 a “Walking the talk – Banks gearing up to manage risks from climate change and environmental degradation” European Central Bank Banking Supervision November 2022
- ECB - 2022 b “2022 Climate risk stress test” ECB Banking Supervision
- EIB - 2023 “Investment report 2022/2023 Key findings, resilience and renewal in Europe” European Investment Bank February 2023
- European Commission - 2018 « Action plan on sustainable finance »
- European Commission - 2021 “Strategy for financing the transition to a sustainable economy
- Finance Watch - 2021 “A silver bullet against green swans. Incorporating climate-related financial risks into bank and insurance prudential rules”.
- FSB-IMF-BIS - 2011 “Macroprudential Policy Tools and Frameworks – Progress Report to G20”
- FSB-NGFS - 2022 “Climate Scenario Analysis by Jurisdictions – Initial findings and lessons”
- IPCC - 2018 “IPCC Special Report on the consequences of global warming of 1.5°C above pre-industrial levels”.
- IEA - 2021 “Net Zero by 2050: A roadmap for the Global Energy sector” International Energy Agency May 2021
- IEA - 2023 « World Energy Investment 2023 » International Energy Agency May 2023
- I4CE - 2019 – V. Depoues *et al.* « Towards an alternative approach in finance to climate risks: taking uncertainties fully into account »
- I4CE - 2020 a – M. Berenguer *et al.* « Integrating climate-related risks into banks’ capital requirements »
- I4CE - 2020 b – M. Cardona et M. Berenguer « What role for financial regulation to help the low-carbon transition? »
- I4CE - 2021 a – J. Evain et M. Cardona « Can financial regulation accelerate the low-carbon transition? »
- I4CE - 2021b – J. Evain et B. Chamberlin « Indexing capital requirements on climate: what impacts can be expected? »
- I4CE - 2022 a – J. Evain et C. Calipel « Include mandatory banking transition plans within Pillar 2 »
- I4CE - 2022 b– M. Cardona « The limitations of voluntary climate commitments from private financial actors »
- I4CE - 2023 a – C. Calipel et L. Fidel « Climate stress tests: what co-benefits can we expect for transition financing? »
- I4CE - 2023 b – R. Hubert *et al.* “Connecting the dots between climate risk management and transition finance”
- S. Kogstrup and W. Oman - 2019 “Macroeconomic and Financial Policies for Climate Change Mitigation: A review of the Literature” _ IMF Working Paper/19/185
- G. Le Quang and L. Scialom - 2022. “Better safe than sorry: Macroprudential policy, Covid 19 and climate change,” International Economics, CEPII research center, issue 172, pages 403-413.
- P. Lenain - 2022 “All hands on deck to confront the energy crisis” November 2022 - Blog Council on Economic Policies
- P. Monnin - 2021 “Systemic risk buffers – The missing piece in the prudential response to climate risks” Council on Economic Policies - CEP Policy Brief
- G. Mukunda - 2018 “The Social and Political Costs of the Financial Crisis, 10 years later” Harvard Business Review September 25, 2018
- N. Stern - 2008 “The Economics of Climate change” The American Economic Review Vol. 98, N°2 Papers and Proceedings of the 120th Annual Meeting of the American Economic Association
- N. Stern and J. Stiglitz 2022 “The economics of immense risk, urgent action and radical change: towards new approaches to the economics of climate change” Journal of Economic Methodology Volume 29, 2022 -Issue 3

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I4CE is a non-profit research organization that provides independent policy analysis on climate change mitigation and adaptation. The Institute promote climate policies that are effective, efficient and socially-fair. Our 40 experts engage with national and local governments, the European Union, international financial institutions, civil society organizations and the media. Our work covers three key transitions – energy, agriculture, forest – and addresses six economic challenges: investment, public financing, development finance, financial regulation, carbon pricing and carbon certification.



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The **Finance ClimAct** project contributes to the implementation of France Stratégie Nationale Bas Carbone and the European Union Sustainable Finance Action Plan. It aims to develop new tools, methods and knowledge enabling (1) investors to integrate environmental objectives into their their investment choices, (2) financial institutions and their supervisors to integrate climate issues into their decision-making processes and align financial flows with energy-climate and (3) encourage investment in energy efficiency and the low-carbon economy, promoted by the National Low-Carbon Strategy and the the European Green Pact.



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