Rethinking the financing of virtuous companies and prudential policies by integrating socio-environmental solvency

by

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Introduction

Faced with increasingly pressing environmental constraints and the insufficient effect of carbon pricing, an environmental transition will require massive "virtuous" investments in decarbonized sectors and a reduction in investments in polluting sectors, but also in social, solidarity and circular sectors. However, green investments are still largely insufficient. Indeed, as their initial costs are generally very high, it is rare that companies have the necessary equity capital, and they therefore turn to external sources of financing (bank credit, capital markets, stock markets) and come up against an unavailability of financial resources.

As bank credit is often rationed, companies are therefore encouraged to seek financing on the capital and stock markets, which are difficult to find because of low yields and liquidity and high risks, to which are added the margin calls of clearing houses. By taking margin calls, they guarantee the transaction if one of the parties defaults, in order to avoid a chain failure. However, the height of the margin calls and the brokers' commissions can push companies to leave the organized markets themselves to finance themselves on the risky over-the-counter markets and dark pools, increasing the systemic risk. Three issues arise from this:

- **Environmental degradation** and its impact on production;
- **Financial systemic risk** due to financial deregulation and the growth of over-the-counter markets;
- The **deflationary macroeconomic risk**: an explosion of private debt and an economic situation too weak to support it lead to a deflationary spiral and a forced depression (a "Japanese-style" scenario). The level of private debt leads to a chain of household and corporate bankruptcies and therefore potentially to bank failures, an explosion of unemployment, and blocks all investment.

We conclude that it seems impossible to pursue an environmental policy that is not macro-prudential, because it would not be possible to provide the incentives and investments necessary for the transition. And conversely, a macro-prudential policy must necessarily be environmental, otherwise the degradation of the environment would lead to the degradation of production, capital, employment, the debt ratio and the quality of life on earth, and thus to a forced depression. **Environmental and macro-prudential policies are therefore linked**, and it is vital that this interdependence be understood by the regulator through the implementation of environmental stress tests.

We therefore propose an ecosystemic macro-prudential policy integrating socio-environmental regulation, whose objective would be to increase financing capacities, incentives and access to green investment while reducing deflationary and environmental risks. It is declined on bank financing, commercial bank refinancing and disintermediated market financing, to target all types of companies and all sources of financial instability, based on a redefinition of accounting principles integrating socio-environmental solvency.

**Ecosystem-based macro-prudential regulatory policies**

The objective of these policies is to develop a system of reallocation of financing capacities from non-virtuous to virtuous companies with public guarantees, aiming at reducing the debt ratio while increasing green investments, with monetary policies and forms of public-private partnership to do so. **Facilitating the financing of green companies** would green total capital but increase its volume, partly offsetting the positive environmental impact. It is therefore also necessary to limit the expansion of financing for "brown" companies. This would reduce risky transactions and favor less leveraged investments that are more connected to the real economy, reducing systemic financial risk.

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4 A clearing house is a financial organization that centralizes transactions on the so-called organized markets.
5 The purpose of macro-prudential regulation is to limit systemic financial risk.
Prudential regulations (Basel III, Solvency II) have already been introduced after the 2007 crisis, obliging banks to maintain a certain liquidity and solvency ratio in order to avoid a new crisis caused by uncontrolled credit expansion and a liquidity crisis. However, these absolutely necessary regulations directly penalize green investment because it is more risky and less profitable. The challenge is not to penalize virtuous investments while maintaining the same level of ecosystemic prudence, precisely by reducing environmental risk and transferring excess financing capacity, guarantees and collateral from polluting investments to virtuous investments. Thus, several solutions exist to reduce the banking credit constraint:

- **An interest rate policy**

Although the three main key rates, common to any bank, are already low, it would be possible to differentiate them by institution and loan, by:

- Individualizing the central bank refinancing rate (refi) for each institution and refinancing request, with a lower rate for banks with a "green" balance sheet/demand, and a really penalizing rate for "brown" balance sheets/demands.

- Reducing and capping the marginal lending rate (the rate of lending liquidity to commercial banks that exceed the volume of money creation allowed by the refi, which is always accepted) for banks with green balance sheets, and conversely for brown balance sheets.

- Increasing the rate of return on central bank deposits only for banks that have a particularly high level of green loans. This would encourage banks to green their balance sheets to take advantage of this remuneration, which is currently negative and therefore at a loss, and once greened, the deposits made with the central bank would limit other leverage effects and would have a prudential role.

Thus, individualizing the rates for each refinancing request would be particularly attractive for banks and would increase the transparency of information for the regulator because it would force banks to motivate their requests according to the type of loan and to target their credit allocation. **To differentiate these rates, central banks would have to accept green collateral** as security, which requires rigorous standards and assessments of debtor companies.

- **A policy of reserves and equity ratios**

It is also possible to directly influence the reserve and capital ratios, and therefore the volumes that constrain credit and money creation. However, the majority of central banks in developed countries (ECB, Fed...) primarily pursue interest rate policies in order to control and harmonize the interbank lending rate, and in doing so accept any refinancing request. By refusing them in the presence of tensions and illiquidity, they would provoke variations in the interbank rate, making the rates out of their control. Nevertheless, it is possible to imagine greater volatility in rates, and direct control

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7 Maintaining a certain liquidity ratio means having enough liquid assets such as government bonds, equity, reserves at the central bank, to guarantee a massive withdrawal of savers or bankruptcies of debtors.


9 The rate at which commercial banks lend to each other.
by reserves and volumes, such as the People's Bank of China (PBOC), offering a myriad of tools already used in the past in Europe\(^\text{10}\).

- Easing of liquidity and solvency ratios\(^\text{11}\) for banks with green balance sheets and for the types of loans granted, increasing them for the others, depending on the size of the institutions\(^\text{12}\). Creation of a penalty factor for banks financing fossil fuel polluting activities, by requiring an increase in capital proportional to the credit granted. This would make it possible to compensate for the reduction in capital for loans to green activities. Different risk weighting of the solvency ratio depending on the type of claim. A green loan would see a decrease in its total risk due to its low socio-environmental risk, with the State guaranteeing its financial solvency.

- Easing of reserve requirements to be deposited at the central bank for banks with green balance sheets and for the types of loans granted, increase for others. Green bonds would be accepted and have more value and weight than traditional government bonds.

- Weighting of the volume of the counter-cyclical prudential cushion in the capital according to the socio-environmental risk, which is currently very low (0\%)\(^\text{13}\) and set by the national authorities and not the ECB.

- Green Quantitative Easing policies are also possible: money creation and liquidity injection directly by the central bank buying back not only government bonds but green bonds. A Green QE policy would make sense in prudential terms, especially in the face of the COVID-19: the current QE, by flooding the markets with liquidity, has caused the price of stock market assets to rise drastically since 2009, even though the economic situation has been gloomy for the past 10 years. This decorrelation between the value of assets and their very weak real economic performance (cf. Price Earning Ratio) indicates that markets are under perfusion from central banks, leading to important systemic risks in case of an end to the perfusion. Thus, a Green QE would still create liquidity and encourage investment, but in the necessary sectors, while limiting the current purely speculative leverage and investment in dangerous financial products.

- Finally, it would also be relevant to reduce the Solvency II capital requirements for infrastructure investments that are often necessary for future private green investments, which are far too high and unjustified for this type of long-term structural investment.

Within the European Union, it is in the interest of national decision-makers to build up a balance of power against the ECB with the aim of achieving such green monetary control, and of using ratio policies in addition to interest rate policies.


\(^\text{11}\) Minimum capital equivalent to 8\% of risk-weighted deposits, to deal with a loss of confidence and a withdrawal of a portion of savers.


\(^\text{13}\) Set by HCSF as of April 2, 2020.
Public/Private Partnership (PPP)

Financing is also possible not only through money creation but also through asset reallocation. On the financial markets, non-bank actors are also acting, the "institutional investors"\textsuperscript{14}, responsible for shadow banking. Evading post-2008 banking and prudential regulations, they are sources of enormous systemic risks. The State has its place to regulate and create incentives in this sector and in market transactions. Preferential margin calls in clearing house transactions for green transactions, and higher margins for polluters' transactions to offset and keep their resolution and collateral reserves at the same level, could encourage the exit from OTC markets and facilitate green transactions.

The macro-prudential impact of such a policy would be strong: by lowering margin calls, it would create a significant incentive for a portion of firms to withdraw from dark pools and the unhedged OTC market, in order to finance themselves in the hedged and regulated markets. And by lowering interest rates and increasing bank financing capacities, it encourages others to withdraw from the markets to finance themselves through safer and more attractive bank credit.

PPPs are also possible, for example the creation of a mixed capital structure, a "Société de Financement de la Transition Énergétique" (SFTE)\textsuperscript{15}, based on the model of the Société de Financement de l'Économie Française (SFEF)\textsuperscript{16}. Under private law, the SFTE would be composed of various credit banks and could raise funds on the financial markets and from institutional investors to finance massive green investments without increasing the public debt service, but would benefit from a public guarantee, offering much lower rates and financing costs than today.

A policy to support the participation of institutional investors in the financing of the transition, which would be embodied by the creation of public/private matching structures hosted by public banks, providing the knowledge and centralization of information necessary for the meeting of projects/investors\textsuperscript{17}. Private/private structures between banks and institutional investors could also facilitate matching.

Despite a European monetary policy, the State can be proactive through its public banks, for example the Banque Publique d'Investissement and the Caisse des Dépôts et Consignations, by imposing on them the cessation of the financing of fossil activities and a minimum share of financing of green activities, for example 60% (today around 9%) and even a fixed share of the issued public debt. Preliminary public investment and its constancy are vital due to the lack of initial infrastructure and its versatility. By financing large transitional projects, the public would lead the way in assuming initial losses and providing risk capital. In addition, by issuing green bond-backed securities, it would accustom and reassure the markets to these instruments.

Finally, the long maturity of green investments discourages banks from financing them. The State and the BPI could create a mechanism for recycling long-term loans, inspired by the mechanism for refinancing the export activity of companies (cf. COFACE), in order to create a public guarantee for refinancing long-term loans: the State would guarantee the funds invested up to 100% both in the event of default of the project and in the event of default of the private lending bank, if it is not able to renew the credit.

Defossilization of savings

\textsuperscript{14} Pension funds, insurance companies, hedge funds and others, with a volume of assets under management of USD 74.3 trillion (2018) that would finance the entire transition.
\textsuperscript{15} G. Giraud, Collective. (2015). Report of Working Group No. 4 of the National Debate on Energy Transition. DNTE.
\textsuperscript{16} The SFEF was created in 2008 to save French banks by raising 77 billion euros.
\textsuperscript{17} See for example the UK Pension Infrastructure Platform.
A final issue is the "defossilization" of savings. The amount of existing savings is extremely large (4,000 billion in France), and must be massively reallocated to finance the transition. The State could impose the earmarking of savings for sustainable finance:

- It could be made compulsory for banks and financial institutions to inform savers about the use of their savings and allow them to make ethical choices guaranteed by the State. This would require the generalization of the socio-environmental rating to all savings products.

- France already benefits from the Livret de développement durable et solidaire (LDDS), in 2021 with an equivalent rate with the Livret A (0.5%). It is necessary to increase the rate of the LDDS to create a real incentive, and to legally impose that the savings placed in LDDS be fully invested in labeled funds, which is still not the case today.

- The tax system must also guide savings, by creating tax advantages for savers who invest their funds in labelled products, while maintaining a constant level of tax revenue by eliminating niches, exemptions and allowances for polluting activities and products. About thirty French exemptions concern harmful sectors.\(^\text{18}\) It is possible to tax pollutants in proportion to their emissions, with the gains offsetting the impact of rising gasoline prices on the poor.

- The constraints, various costs and technical difficulties of reporting and rating weigh particularly heavily on small and medium-sized companies and on territorial projects. Therefore, the State must support their financing not only through a public guarantee by taking charge of their financial solvency in return for their socio-environmental solvency, but also by helping them to organize and syndicate\(^\text{19}\) to obtain these funds.

**Company, Accounting and Socio-environmental Solvency**

In order to meet our twofold objective, namely to facilitate virtuous borrowing while limiting borrowing towards negative activities, and to allow for a public guarantee, a system of rating companies is necessary. We therefore propose the integration of socio-environmental solvency in the accounting analysis of companies.

In particular, the CARE-TDL model\(^\text{19}\) developed by J. Richard proposes the integration of human and natural capital alongside financial capital on the liabilities side of the balance sheet. The objective of a company remains the non-degradation of its financial capital, but the same logic also applies to human and natural capital. The company has an ecosystem that it exploits to create value. However, it must not be completely degraded, no matter how the company uses it.

The CARE method therefore aims to translate an ecological debt that the company must manage in order to ensure its overall performance, thus maximizing its socio-environmental solvency and its financing capacity. Based on the principle of non-compensation in accounting, it promotes a strong sustainability approach to sustainable development. In other words, the idea that no

\(^{18}\) Tax expenditures unfavorable to the environment were 7.5 billion in 2017 compared to 3.1 billion for those favorable to the environment.

\(^{19}\) Centralization of projects for collective funding.

capital can be substituted for another, considering the finitude of resources and the irreversibility of the destruction of some of their components\textsuperscript{21}. Furthermore, the model reaffirms the importance of the principle of corporate sincerity by institutionalizing moral hazard in the accounting standard, in order to fight against green communication practices (\textit{greenwashing}).

However, socio-environmental rating is a polysemous concept, both at the level of measurement instruments and evaluation devices and at the level of the behavior of the actors whose decisions are evaluated. Performance does not exist in itself: evaluation systems are based on the value systems of their designers, who call upon principles and logics of justification\textsuperscript{22}. Thus, the question of the feasibility of integrating them into current accounting standards is technically posed and for the moment unresolved. Given the limitations of our proposal, we stress the \textbf{need to create an international systemic standard in terms of socio-environmental impact measurement and thus be able to work on common foundations towards the 2030 Agenda.}

\textbf{Conclusion}

All policy is a cost-benefit trade-off. This is especially true for prudential policies, as they touch on many interests and supranational norms, and need to be continually monitored and evaluated. Moreover, resistance to change in high-carbon, high-revenue activities is substantial. \textbf{Public authorities must be engaged and send strong signals.} The policy proposed in this paper calls for complementary measures, such as

- The regulation of \textit{dark pools}, their operators and high frequency trading, and even the withdrawal of accreditations. The introduction of regulatory clearing houses in the OTC markets and of a floor for the margin calls of the clearing houses in order to guarantee their prudential cushion, or even to renationalize them.

- Massive, coherent and continuous green public investment, as a signal to the private sector but also to activate positive externalities through infrastructure development.

The strict application of the polluter-pays principle, with fines being used for socio-environmental compensation. The development of strong norms, with real pressure for European fiscal and environmental harmonization to avoid ecological\textit{ dumping} (i.e. the destruction of norms to attract transnational firms).

\textsuperscript{21} Daly, H.E., Cobb Jr, J. & Cobb, J. (1994). \textit{For the common good: Redirecting the economy toward community, the environment, and a sustainable future}, Beacon Press.