



Central banks still run money creation

By Daniel Daianu
National Bank of Romania

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Over-financialization and the fragility of economic systems in the industrialized world is widely debated among academics and where public policies are formulated, which, obviously, involves central banks. High finance, as named by President Franklin Delano Roosevelt (who called for regulatory measures after the Great Depression, after which the Glass-Steagall Act was enacted), has become more disruptive over the past decades. This is reflected in the dynamics of financial cycles, in the volume of public and private debt, in the frequency of “Minsky moments”. The Great Recession has reignited the debate on “who creates money” What has surprised not a few is that a deep crisis hit so badly advanced economies – which rely, presumably, on solid institutions and knowledgeable regulatory authorities. No wonder then that some voices have gone beyond the need for tight financial regulation and supervision efforts and have come up with proposals aimed at a fundamental rethinking of the banking/financial system. Fintech and cryptocurrencies have also amplified the debate on who creates money and the role of central banks. Unconventional policies have altered the complexion of monetary policy and balance-sheet operations have turned into a basic component of their toolbox. The thoughts below dwell on money creation and the relationship between central banks and commercial banks, the money vs. credit debate, crypto-currencies, banking reform proposals. The main argument is that central banks still run the money creation process, but that their life has become much more complicated in the aftermath of the Great Recession.

Over-financialization and the fragility of economic systems in the industrialized world is widely debated among academics and where public policies are formulated, which, obviously, involves central banks.¹ *High finance*, as named by President Franklin Delano Roosevelt (who called for regulatory measures after the *Great Depression*, after which the Glass-Steagall Act was enacted), has become more disruptive over the past decades. This is reflected in the dynamics of financial cycles, in the volume of public and private debt, in the frequency of “Minsky moments”². Over-financialization is illustrated by the share of finance in overall economic activity; in the US, for instance, it went up from 2-3 percent of GDP in the 1950s to 7-8 percent of GDP in 2007-08, with an amazing share in corporate profits, to over 40 percent in the years leading up to the Great Recession.³

The Great Recession has reignited the debate on “who creates money” It is in this context that the old controversy regarding the fractional-reserve banking system should be placed. This dispute should be linked with the equally old observation that the financial system is prone to crises, to instances of panic, to “runs”.

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Unconventional policies have altered the complexion of monetary policy and balance-sheet operations have turned into a basic component of their toolbox; quantitative easing (QE) has increased the share of *base money* (created by central banks) in money supply.

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Money creation: central banks and commercial banks

Central banks came up long after commercial banks; over time they developed their functions as we know them today: currency issue, monetary policy, lender of last resort (LoLR), deposit guarantee, safeguarding financial stability⁵. Some “central banks” were established to serve another purpose as well: to finance military state campaigns, as was the case in England and France. This is what we would nowadays refer to as direct financing of general government budget deficits via money printing.

Commercial banks went through a period of “free banking”, which translated into unhindered competition and the absence of a central bank as issuer of a single currency and lender of last resort. The fractional-reserve system does not, therefore, originate in a philosophy (paradigm) of central bank functioning; it precedes the advent of central banks

¹ See also Robin Greenwood and David Scharfstein, “The Growth of Finance”, *Journal of Economic Perspectives*, Vol. 27, No. 2, Spring 2013; Ugo Pagano *et al.* “Is Europe overbanked?”, *ESRB Report*, June 2014; for emerging economies see also Ratna Sahay and Martin Čihák, “How much finance is too much: stability, growth and emerging markets”, 20 May 2015, IMF blog.

² “Minsky moments” refer to highly destabilizing situations for the economy which are brought about by finance – as described by Hyman Minsky (*Stabilizing an Unstable Economy*, Princeton University Press, 1986). Paul McCulley coined the phrase back in 1998.

³ Over-financialization is illustrated by the share of transactions that do not concern the real economy, but are rather financial transactions, with an increasing number of them based on derivatives – as “finance for its own sake”, which extracts undue rents from economy. I address this issue in *Which way goes capitalism* (CEU Press, 2009), and in *Emerging Europe and the Great Recession*, Cambridge Scholars Publishing 2018.

⁴ Mervyn King, *The End of Alchemy. Money, Banking and the Future of the Global Economy*, London, Little Brown, 2016; Adair Turner, *Between Debt and the Devil*, Princeton, Princeton University Press, 2016; John Kay, *Other’s People Money. Masters of the Universe or Servants of the People*, London, Profile Books, 2015; Jaromir Benes and Michael Kumhof, “The Chicago Plan Revisited”, IMF Working Papers, WP/12/202.

⁵ See also Charles Goodhart (*The Central Bank and the Financial System*, Cambridge (US), MIT Press, 1995) and Charles Kindleberger (*A Financial History of Western Europe*, Oxford, Oxford University Press, 1993).

and is the outcome of commercial banks' realizing that they can grant loans and expand their balance sheets/business way beyond their own funds and deposits taken. It may be asserted that central banks "inherited" the fractional-reserve system, but they imposed prudential rules on the banking system – reserves to be held at the central bank, capital and liquidity requirements to be met in relation to bank assets, etc.

A central bank, as an issuing house, must ensure trust in the currency, particularly when dealing with fiat money. Modern economies are monetary *par excellence*, using money in financial and exchange transactions⁶.

When central banks became issuing houses and LoLR, fractional reserves interacted with monetary policy. This happened because central banks tried to ensure price stability by controlling the quantity of money (monetary aggregates) and, during the past decades, especially via monetary policy rates (inflation targeting) – through the price of money. The shift away from controlling the quantity of money (monetary aggregates) to controlling the price of money directly, via the monetary policy rate, was grounded in the excessive variability of the relationship between base money and broad money, between the money issued by the central bank and the "inside money" created by commercial banks.

The money vs. credit debate

The money vs. credit argument is old, amid the evolution of the fractional-reserve banking system. More than half a century ago, a much debated report in the UK claimed that credit is also money (the Radcliffe Report). This thesis is revisited in a Bank of England study⁷, which triggered, arguably, overdone controversy. This holds true to the extent one considers that inflation targeting, through the direct control over the price of money (via the policy rate), has stimulated credit expansion and made the *financial cycle*⁸ more ample.

However, even by assuming that commercial banks create "money" (inside money) via lending, this is

done by virtue of a *mandate*. The latter means that commercial banks work with/multiply *base money* (*high powered money*); they do not work with their own money. Banks use equity and deposits to acquire monetary resources. That in the UK, for instance, the central bank's money creation has come to account for merely around 3 percent of broad money does not change the process of money creation fundamentally. The Bank of England can, ultimately, contain credit expansion through the price of money --through the policy rate and the transmission of the signal to money/financial markets. Refuting this causality chain is like denying the role of prices in the economy, in the expansion or contraction of economic activity; or it would be tantamount to the assumption that commercial banks ignore the price of money pursued by the central bank – and, hence, that there would not be a monetary policy any longer. It is true that the transmission mechanism can be impaired, even break down, particularly during hard times (like in financial crises), but this does not invalidate the role of central banks in fulfilling their basic functions.

A telling evidence shows that the cash injected by a central bank into the banking system lies at the root of money creation. When the financial system ran the risk of collapse, as in the recent big financial crisis, central banks in the US and in EU Member States, the ECB itself, had no choice but to inject massive liquidity, base money into it; it was not commercial banks that "injected themselves" with money they had created. There is one more thing worth mulling over: when panic strikes, people withdraw their money from banks and may choose to keep it in "money vaults". Money could be transferred over to banks perceived as safer, yet a system-wide run on banks can be countered only via liquidity injections from a credible LoLR, which is an issuing house (a central bank).

Even if cash were abolished, things would not fundamentally be different because the functions of cash would be taken over by e-money, digital money; there are already suggestions in this regard, based on the need to cap the outflow of cash from the banking system. A cashless society is, however, far-fetched.

⁶ The means-of-exchange function cannot be separated from interpersonal relationships. In a prison, cigarettes or bread crusts operate as money substitutes, having a means-of-exchange and, sometimes, even store-of-value function.

⁷ Michael McLeay, Amar Radia and Rydland Thomas, "Money Creation in the Modern Economy", *Quarterly Bulletin*, Q1, Bank of England, 2014.

⁸ See also Claudio Borio, "The Financial cycle and macroeconomics. What have we learnt?", BIS Working Paper No 395, December 2012.

Nota bene: in Sweden, where cash dropped significantly as a means of payments, the Riksbank has second thoughts about pushing this process to the extremes. Apart from financial exclusion implications, there is the problem of resilience of the payments system in a world in which cyberfare is a major threat. As Cecilia Skingsley, deputy governor of the Swedish central bank put it, “cash may be the means of payment of last resort” (SUERF conference, Frankfurt, 20 May 2019).

Commercial banks cannot create *inside money* (by granting loans) in an unlimited manner, by disregarding the price of money which is set by the monetary policy rate and the monetary transmission mechanism. It is true that, in an environment of very low policy rates (as is currently the case), monetary policy effectiveness is much reduced. But even so, if credit demand is highly subdued, commercial banks cannot embark on a money creation spree.

Several observations are warranted with regard to the relationship between central banks and commercial banks in today’s world, when banking systems are no longer based on a gold standard or other metal equivalents:

- money in the system is fiduciary, it is based on *trust*, on guarantees provided by public authorities (the state) and its taxation power;
- commercial banks may not supply other money than that which is sanctioned by central banks. In economies where other currencies, too, are in circulation (with substantial dollarization, euroization), it is possible to grant loans denominated in foreign currencies which are accepted by the central bank (though other currencies may also circulate in the informal economy);
- commercial banks are licensed by central banks;
- commercial banks are under the central bank’s regulatory and supervisory scope.

Periods of time with intense deleveraging are also proof that base money sets the tone in the economy. Inside money (i.e. the money created by commercial banks via multiplying credit) may vanish suddenly,

whereas base money is not affected unless there is an outflow of non-residents’ funds. This is what happened in numerous economies during the current crisis’ years. While the stock of “inside money” may contract via deleveraging, base money does not automatically decrease – unless the system witnesses outflows of funds. Granted, the monetary base could be caught in the “liquidity trap”; during a deep crisis, the liquidity preference skyrockets.⁹

Lending should be viewed in relation to the expansion of banks’ and non-banks’ financial operations. It is noteworthy that, in the context of over-financialization, the bulk of large banks’ net income comes from trading, arbitrage, derivatives. Given growing interconnectedness, the result is an increasing fragility of the banking system, of the financial system as a whole.

Unconventional policies (QE) is *base money* creation

Unconventional policies (QE primarily) have averted a collapse of the entire financial system. QE means, essentially, a large injection of *base money* (*outside money*) into the economic system when the monetary transmission mechanism is impaired.

Yet unorthodox policies themselves have limitations and twisted effects. That concerns are running high is also obvious in that some prominent voices allude to “helicopter money”, a phrase which was coined by Milton Friedman decades ago; this money, it is imagined, would feed through into consumption not via commercial banks, but as fiscal stimulus from the public budget. Budget deficits could be monetized as well through this method.

An analogy can help for grasping the context in which QE is used. In the early years of post-communist transition, deficit monetization was carried out to the dismay of many who underestimated the *structural strain* in economic systems when new relative prices called for a drastic reallocation of resources¹⁰. Following a dramatic change in relative prices many enterprises were found to be unprofitable and faced increasingly hard budget constraints. Hence the need to subsidize firms and even sectors involving monetization of quasi-fiscal deficits. Firms themselves created an own pseudo-money via inter-enterprise arrears. The quasi-fiscal task of central

⁹ For an interesting model on monetary policy and *inside money* see Monika Piazzesi and Martin Schneider, “Payments, Credit and Asset Prices”, paper presented at the BIS annual conference, Luzern, 21 July, 2017.

¹⁰ Daniel Daianu, “Inter-enterprise arrears in post-command economies”, IMF Working Papers, 74/1994.

banks during the initial stage of post-command transition resembles the QEs and other unconventional measures practiced during the current financial crisis by major central banks in advanced economies – a similar *fiscal dominance* takes center stage. But price liberalization caused pretty high inflation in transition (post-communist) economies (where repressed inflation was the modus operandi of the command system) whereas the Great Recession has entailed a much keener appetite for liquidity holdings, the “liquidity trap” being at work. Structural reallocation of resources may still have to occur in advanced economies, as many BIS documents suggest. Nonetheless, it is sensible to assume that this reallocation is hard to undertake owing to fast technical change and the shift of economic power in the global space.

How complex, through their implications and trade-offs, monetary policy frameworks are becoming nowadays is suggested by attempts to revise them (in the US for instance) and the talk of a “new monetary theory”¹¹ – as a means to reflate an economy that suffers from severe underuse of resources.

Whereas unconventional policies (QE) can take place in a reserve money center, emerging economies hardly have policy room in this regard; overlooking deficits, especially external ones, would trigger a run on the domestic currency and entail big trouble.

Crypto (parallel)-currencies and the money supply

Bitcoin and other crypto-currencies (currencies that are not issued by central banks) have made a name for themselves against the backdrop of the Great Recession. At the start, it may have been the fear of huge instability and, eventually, of big inflation, which has fostered the emergence of parallel currencies as presumed safer assets. But inflation has hardly materialized (at least, until now) and, instead, very low inflation, even deflation (debt-deflation) have turned into a major headache for central banks and governments. And instability, disruptions and rising uncertainty are ongoing concerns in the global economy.

Crypto-currencies epitomize, arguably, another feature of the impact of the Great Recession on society: a dramatic diminution of the trust citizens

have in governments, policy elites; and central banks are seen as key institutional constructs of the modern public policy institutional architecture and guardians of economic stability in a broad sense. The Crisis has shaken the trust in the capacity of governments and central banks to secure essential public goods. A simplistic economic paradigm, with its ensuing reflection in the regulatory framework (*light touch regulation*), the belief in price stability as automatic purveyor of financial stability, are at the roots of the deep malaise. Bitcoin and other crypto-currencies mirror this mistrust; they are an attempt to create parallel money markets, to provide a medium of exchange which is not under the control of central authority (central banks), and which would fit non-hierarchical structures in society. Their social and economic significance runs consequently quite deeply.

Facebook’s “Libra project”, by its very current design, highlights crypto-currencies’ weaknesses when it comes to their stability and basic features of money. The very fact that this digital token is to be backed by actual money and defined in terms of a cluster of currencies speaks volumes in this respect; it indicates also that it is meant to be a different “animal” compared to bitcoin and other crypto-currencies. But why central banks and regulators are fully entitled to be more than cautious in accepting it, is the potential magnitude of this scheme and its implications. If one sees Facebook and the services it can provide as an evolving gigantic non-bank entity (that can provide bank services), there is plenty of reasons not to accept it as it is projected; enormous size (which implies unparalleled power/market concentration and, also, potential abuse), huge systemic risks, massive interference with central banks’ monetary policies (to the extent Libra could be seen as quasi-money) pose very high risks for the financial system as a whole.

Is money creation given an altered life by crypto-currencies? The latter are still an insignificant portion of the amount of means that serve as medium of exchange and store of value. And the propensity of cash to leave banks and circulate through non-bank circuits (not least owing to very low deposit rates) does not seem to have grown to a relevant extent. In addition, it is not clear that crypto-currencies are as trustworthy as some claim them to be. Some of them have also been associated with online drug sales and

¹¹ Randal Wray, “Modern monetary theory: an alternative to economic orthodoxy” Working Paper 792, Levy Economic Institute, Bard College, March 2014.

hackers asking for ransom; and they witness extreme volatility, which is not a commendable feature for a store of value. In the end, what matters for money to be accepted and used on a big scale is the comparative trust one puts in the issuer and its capacity to deliver what it claims to do. And most importantly, crypto-currencies cannot fulfill the LoLR function, which is vital for the stability of the financial system.

Central banks, in spite of the huge psychological, social and economic fallout from the Great Recession, have been – as Mohamed El Erian put it – “the only game in town”, and the rescuer of last resort, as they are supposed to be. And this is likely to stay so. This said, however, finance has to change its behavior and central banks and governments have a long way to go in order to redeem their reputation when it comes to the regulation and supervision of banks and non-banks alike. For business (finance) conduct has become a systemic risk.

Fintech, however, with the block-chain as a technological (financial) innovation can help banks and central banks to make payment systems more robust. Fintech, in general, is a formidable challenge for the financial industry, for banking. And central banks need to consider carefully the proliferation of non-banks, of companies that provide financial services which were, traditionally, in commercial banks' yard.

Money creation and financial stability

There are two big challenges that a central bank has to overcome when it comes to monetary/financial stability: a) the effectiveness of the monetary policy transmission mechanism, via monetary aggregates control, or through the monetary policy rate – both instruments (a quantitative and a price tool respectively) trying to influence the level of economic activity, price dynamics (inflation); and b) what money is used for.

In recent decades monetary transmission has relied in most of the industrialized world on inflation targeting (IT), after it had been noticed that a control of monetary aggregates was pretty approximate, mainly due to money demand instability. But the current financial crisis has shown major drawbacks of this regime too; these drawbacks refer to a poor understanding of systemic risks and overreliance on

price stability at the expense of financial stability (by disregarding financial asset prices). Extreme events (“Black Swans”, as named by Nassim Taleb), as well as rising *uncertainty* (Mervyn King calls it “radical uncertainty”, Op.cit) which is to be distinguished from *risk*¹², have also revealed the limitations of approaches which presume a smooth functioning of markets. Hence, a growing dissatisfaction has emerged with macroeconomic models. As Claudio Borio from the Bank of International Settlements (BIS) put it, models in which the role of finance is underplayed are like “Hamlet without the Prince”.

The other challenge, which does not pertain solely to a central bank, but rather to the financial system in its entirety, to the economy, is *what money does*; when the prevailing use is speculation deeply distorted financial cycles take shape, and this ends up in *boom and bust episodes*. A financial system that fosters speculation and indebtedness¹³ is disruptive for the economy and unavoidably leads to deep crises – especially when contagion effects are strong. The past decades have increased the *interconnectedness* among banking/financial entities through the sheer size of derivatives.

When the US Fed was established back in 1913, what J.P. Morgan and others had in mind was the need for a lender of last resort in order to put an end to financial panic, to contagion (like that of 1907). But saving someone who deserves to live on is one thing, and rescuing an entity just because it is “too big to fail” is another. There is a big dilemma in this respect. Similarly, the bail-in procedure, which is part of an overhaul of the functioning of banks in the European Union, is an attempt to involve investors in solving highly intricate situations, against the backdrop of very strained public budgets. However, bailing-ins themselves present pitfalls. And in the case of big banks, gigantic financial entities, bail-outs will probably be resorted to, eventually, for fear of system contagion. No wonder Simon Johnson (former chief economist of the IMF), Neel Kashkari (one of the promoters of the package of measures known as TARP) and others advocate a break-up of giant banks. Size is clearly a huge policy issue, but not less is interconnectedness; this is because even smaller entities can bring the whole system down if contagion is unstoppable.

The problem for central banks is therefore two-pronged: a) what sort of monetary policy to pursue

¹² Which implies assessing events and associating probabilities of occurrence.

¹³ This is the debt overhang often referred to by Kenneth Rogoff and the key theme of Adair Turner's book (op. cit.)

(alongside macro-prudential measures/MPP) and b) how to regulate the financial system so as to mitigate/prevent crises. This is the context that has triggered debates on regulatory and supervision reform, as well as on the reform of the banking/financial system.

Banking reform proposals

Some reform proposals are aimed at tightening regulation and supervision, without touching the core architecture of the banking/financial system – recourse is made to higher capital and liquidity requirements, restraining certain operations, increased transparency, capping bankers' income, etc. The massive reduction in leverage (the possibility of using borrowed funds) is such a proposal¹⁴.

There are also reform proposals aimed at changing the design of the system, at changing business models. Eyes are set on the “structure” of the banking system, which still enhances the use of derivatives, speculation; to this end there are opinions which support the introduction of a financial transaction tax (Tobin tax). In the EU, some member states (France and Germany, among others) advocate taxation of short-term financial transactions.

Other views are quite radical and call even for the demise of the fractional-reserve system; they have in mind the ideas which were proposed, in the wake of the Great Depression, by Irving Fisher, Frank Knight (to whom we owe the distinction between *risk* and *uncertainty*), Henry Simons and Paul Douglas through *The Chicago Plan*. This plan was revisited by Jaromir Benes and Michael Kumhof and is alluded to by Mervyn King (*Op. cit.*). Essentially, it is about breaking the link between base money and credit in the sense that banks which attract deposits should not extend credit by multiplying the funds taken in (or, as it is groundlessly claimed, that money is created out of nothing). The authors of the Plan and those who embrace this idea would break the banking system in two parts: deposit banks, which should not extend credit (and should be 100 percent backed through their assets), and lending banks,

funded via private capital and long-term loans or via borrowings from the central bank. Thus, the whole money supply would be made up of base money.

Reform proposals and credit

None of the proposals to reform the banking system denies the usefulness of credit. The issue at stake concerns *credit dynamics* and, in this context, *what is done with money*. The use of money, which may cause excessive instability, is worth looking into. Along this line of reasoning one meets the financial cycle concept, which – according to BIS experts – may reveal substantial misallocation of resources¹⁵. When resources are grossly misallocated, with ensuing major imbalances, the stage is set for a big crisis. A lesson of the recent crisis is that it makes sense to contemplate credit restriction measures (macro-prudential measures) while not ignoring market failures in resource allocation (for instance, the “boom” in non-tradables).

But who is to supply credit? Even by assuming, in a fantasy scenario, that base money alone (i.e. money created by central banks) were to mediate transactions (narrow banks, as deposit banks, would no longer create *inside money*), it would still end up in crises if investment failed on a large scale. And what is meant here is not a natural cyclical motion of the economy, but rather a severe recession. If recourse were made to strict narrow banking (no credit done on banks' part), credit would migrate towards other financial institutions; this is already noticeable with shadow banking development. Systemic risks would show up and would intensify in other areas of the financial system; panic and runs would take place on those particular segments of the financial system. All the more so if one considers the expansion of shadow banking and the very large volume of transactions which are conducted through it, the amounts that set the markets in motion, as well as financial asset prices.

Moreover, it is natural to wonder whether, or to what extent the government is entitled, in a market economy, to control credit allocation. In so doing, not only that it may not foster good allocation, but it

¹⁴ Anat Admati and Martin Hellwig recommend a big increase of capital and a cap on leverage to replace Basel III requirements, which continue to rely on the risk-weighted assets. This shows the distrust of the internal models used by banks, as well as of their conduct, their propensity for “making up” data, for resorting to illegitimate methods (Bankers' New Clothes. What's Wrong with Banking and What to Do about It?, Princeton, Princeton University Press, 2013).

¹⁵ Jaime Caruana, “Stepping out of the shadow of the crisis: three transitions for the world economy”, speech at the Annual General Meeting, BIS, Basel, 29 June 2014.

could undermine the very logic of market functioning, the free choices of firms and households alike. Though, to be fair, public policies may involve “guidance” and incentives for credit allocation. Likewise, central banks may resort to macro-prudential measures to limit credit expansion, and possibly to influence certain trends.

One question would be whether regulation can shape the system so that speculation made by banks can be diminished. That this is the case can be seen from the focus of regulators on the functioning of shadow banking, of capital markets with a huge turnover. Could a financial transaction tax cut down on the volume of speculation? The answer is not clear.

Concluding remarks

Central banks have a much harder life since the eruption of the financial crisis. Financial stability has turned out to be an aim no less important than price stability as the latter does not secure the former. Interconnectedness and inherent volatility of financial markets have amplified systemic risks.

Unconventional policies (QE) seem to be a game changer for monetary policy in a persistent low inflation environment and when natural interest rates fall dramatically, while balance-sheets operations have entered the toolkit of central banks. As a matter of fact, base money is a larger component of money supply than before the eruption of the financial crisis.

Financial markets will likely reveal a clearer segregation among banking functions (retail vs. investment) and tighter regulation and supervision of finance (including shadow banking). Who will fulfill the LoLR function in capital markets begs an answer (just think about the systemic risks large CCPs pose), and fintech will also have to be regulated.

Unless we manage to stave off a new major crisis in the near future, a very radical reform of monetary/financial systems cannot be ruled out, similar in spirit to the proposals aimed at separating lending banks from deposit banks (with full coverage of deposits by liquid assets), in a “narrow banking” vein, and at ensuring a very strict regulation of banks and non-banks that provide credit.

About the author

Daniel Daianu is Professor of economics, The School of Political and Administrative Studies in Bucharest, Member of the Board of the National Bank of Romania, Member of the Romanian Academy; member of the EU High Level Group on Own Resources (HLGOR); author of “Emerging Europe and The Great Recession”, Cambridge Scholars Publishers, 2018 and of “Which Way Goes Capitalism?”, CEU Press, Budapest/New York, 2009; co-editor of “The Crisis of the Eurozone and the Future of Europe” (Palgrave Macmillan, 2014); First deputy President of the Financial Supervision Authority (2013-2014); Member of the European Parliament (2007-2009); Finance Minister of Romania, 1997/1998; Chief Economist of the National Bank of Romania, 1992-1997; Member of the European Council for Foreign Relations, Member of the Board of Trustees of Friends of Europe; Fellow of CASE (Warsaw); Other writings: “The Macroeconomics of EU Integration: The Case of Romania”, Rosetti Educational, Bucharest, 2008; with Radu Vranceanu (ed.), “Ethical Boundaries of Capitalism”, Ashgate (UK), 2005; “Transformation as A Real Process”, Aldershot (UK), Ashgate, 1998; “Economic Vitality and Viability. A Dual Challenge for European Security” Frankfurt, Peter Lang, 1996. Contributor to European Voice, Eurozine, EuropesWorld., Les Echos, World Commerce Review, etc. *Contact:* daniel.daianu@bnro.ro

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A-1090 Vienna, Austria
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