FRUITFUL ECONOMICS

PAPERS IN HONOR OF AND BY JEAN-PAUL FITOUSSI

EDITED BY
ELOI LAURENT
JACQUES LE CACHEUX

Fruitful Economics

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Edited by

Éloi Laurent
Senior Economist, OFCE, Sciences Po, Paris, France

and

Jacques Le Cacheux
Professor, University of Pau-Pays de l'Adour, France

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Notes on Contributors

Kenneth J. Arrow is the Joan Kenney Professor of Economics and Professor of Operations Research at Stanford University. He won the Nobel Prize in Economics in 1972.

Éloi Laurent is a senior economist at Observatoire français des conjonctures économiques (OFCE/Sciences Po) and teaches at Stanford University and Sciences Po. He was a visiting professor at the University of Montréal and Harvard University.

Jacques Le Cacheux is Professor of Economics at the Université de Pau et des Pays de l'Adour and teaches at Sciences Po and Stanford University Programme in Paris. He was the Director of Research at OFCE until 2013 and one of the rapporteurs of the Stiglitz-Sen-Fitoussi Commission.

Edmund S. Phelps is the McVickar Professor of Political Economy and Director of the Center on Capitalism and Society at Columbia University. He was the 2006 Nobel Laureate in Economics.

Amartya K. Sen is the Thomas W. Lamont University Professor and Professor of Economics and Philosophy at Harvard University. He won the Nobel Prize in Economics in 1998.

Joseph E. Stiglitz is University Professor of Economics at Columbia University, winner of the 2001 Nobel Prize in Economics, and a lead author of the 1995 IPCC report, which shared the 2007 Nobel Peace Prize.

Robert M. Solow is Institute Professor of Economics at MIT. He won the Nobel Prize in Economics in 1987.

Introduction: Fitoussi's Fruitful Economics

Éloi Laurent and Jacques Le Cacheux

When it comes to generosity, Jean-Paul Fitoussi is ultra-liberal. When it comes to economic analysis and policy, not so much. Here are summed up the private and public man. But Jean-Paul Fitoussi is also in between private and public, a great friend and thinking partner. This is why "fruitful economics" well describes to our eyes to what branch of our discipline Jean-Paul Fitoussi belongs.

What we mean by "fruitful economics" regarding Jean-Paul Fitoussi's scholarship is the plurality of his research agenda: he has shaped modern macroeconomics of course, but also political economy, economics of inequality, and, more recently, the economics of sustainability. A plural agenda means also in the case of him conceiving economics as open to other social sciences and even the natural sciences, not bunkerized and full of itself. Fruitful must also be understood as useful, because his work has benefited generations of policymakers around the world but also citizens, especially in France and Europe.

Finally, because this volume is also and maybe mostly about friendship, intellectual and otherwise, fruitful means that many of his ideas have over the years emerged, developed, and been tested in continuous dialogues, or better exchanges, with the five illustrious contributors to this volume, who happen to be his friends.

The formative years: assembling a modern Keynesian toolbox to serve European integration

Trained in econometrics and economic theory at the University of Strasbourg, Jean-Paul Fitoussi has always been a Keynesian economist, although interested at a very early stage in his career in the reasons why unemployment equilibria were the rule rather than the exception

in market economies. His dissatisfaction with neoclassical economics and the quantitative theory of money was strongly influenced by Don Patinkin's (1956) attempt to introduce money in standard Walrasian equilibrium analysis via a real balances effect. In the late 1960s, Robert Clower (1965) and Axel Leijonhufvud (1968) were emphasizing the disequilibrium foundations of Keynesian economics. The late 1960s, the time when he was writing his dissertation, were precisely the years in which the old consensus on the "neoclassical synthesis" – IS-LM plus traditional Phillips curve – was being challenged on two fronts, that were to lead to radically opposed predicaments: Edmund Phelps and Milton Friedman were attacking the standard Phillips curve, paving the way for the "rational expectations" or "new classical" revolution in macroeconomics, while Robert Barro and Herschel Grossman, soon followed by Jean-Pascal Benassy, Edmond Malinvaud, Jacques Drèze, and other French and Belgian economists, were exploring non-Walrasian equilibrium – elsewhere called "disequilibrium" – theory. While the latter had a strong impact on his thinking in the 1970s – witness his publications during that decade, in particular the books (Fitoussi, 1973; Fitoussi and Malinvaud, 1977), the former was to give birth to the paradigm that has dominated macroeconomic thinking for more than three decades, a paradigm that Jean-Paul Fitoussi was to methodically challenge and criticize.

From the very beginning of his academic career, Jean-Paul Fitoussi embraced general equilibrium analysis as a congenial framework to grasp interacting agents and markets. Not in the Walras–Arrow–Debreu tradition, though, with its perfect adjustment mechanisms, but for the notion of spillovers and for the systemic dimension. One major source of inspiration for that approach was the Georgescu–Roegen representation of bio-economic systems, with its embracing and heterodox intellectual ambition and its borrowings from thermodynamics, rather than the standard Newtonian mechanics that pervade standard economic theory, both micro and macro, and was to become the major characteristic of New Classical Macroeconomics.

European integration: the Florence school of political economy

Appointed professor in the economics department of the European University Institute in Florence (Italy) in 1978, Jean-Paul Fitoussi was immediately embedded in the fast evolving European integration process, and soon acquainted with this new and innovative research in what may be termed "applied European political economy." Even though the decade nearing its end had not been very successful for the

European Community (EC), with high inflation and mounting unemployment, unstable monetary parities in the failing "European snake," then barely surviving as a "mini Deutsch Mark zone," the horizon was clearing, both within the Organization for Economic Cooperation and Development (OECD) with the "locomotive initiative" – in which the then social democratic German government under Helmut Schmidt had accepted to take the lead in reinflating an ailing world economy – and in the EC, with the launching of negotiations to build a new fixed-exchange rate system, the European Monetary System (EMS), to be inaugurated in March 1979.

The Economics Department in Florence was then headed by Andrew Shonfield, a former director of Chatham House, a publicist, and renowned specialist in political economy, who, in the previous decade, had published *Modern Capitalism* (Shonfield, 1965), an analysis of the functioning of the mixed economy, mostly about Germany and its successful institutions – the trade unions' co-management of firms and what is now commonly labeled the "social market economy." Shonfield had a pervasive influence on Jean-Paul Fitoussi's thinking, by systematically embedding reflections on economic policymaking into the broader frame of politics and institutions, especially in the field of European integration.

Emerging and contending new paradigms: microfoundations vs disequilibrium

The search for a new and firmer foundation for macroeconomic theory had been the underlying thread of much of Jean-Paul Fitoussi's work over the 1970s. In Florence, he had the opportunity of meeting with many of the protagonists of the macroeconomic theory debate. The conference he organized in 1980, and the volume he edited (Fitoussi, 1983) testify to the liveliness of macroeconomic theoretical thinking at the time, with such participants as John Hicks, Axel Leijonhufvud, and Edmond Malinvaud.

The introductory chapter to *Modern Macroeconomic Theory* provides a clear statement of the reasons why conventional interpretations of Keynes analysis – IS-LM plus Phillips curve – have been misleading due to their common bias in favor of a Walrasian setting and the neglect of expectations. JPF argues that emphasis should instead be put on non-Walrasian equilibria, on sources of non-neutrality of money, and on expectation formation. The conclusion is a carefully argued critique of the state of the art in macroeconomic theory in the early 1980s, stressing the shortcomings of both "New Classical Economics" and the "fixed-price" approaches; it is also a plea for a return to what Keynes himself had wanted to do: to study "the system as a whole."

France and the EU in troubled times

The early 1980s were exciting times for a macroeconomist passionate about policymaking and political economy. In the UK, Margaret Thatcher had been appointed Prime Minister in April 1979; in the United States, Ronald Reagan was elected President in November 1980. In France, the first socialist government had been elected in 1981 on a decisively Keynesian program. In Germany, meanwhile, the social democratic majority government was defeated one year later and a conservative government under the leadership of Helmut Kohl launched a very harsh austerity program to restore Germany's public finances and external balances that had profoundly deteriorated when the "locomotive" experiment had collided with the second oil price shock (1979–1981) combined with the tough disinflation policies undertaken in the UK and the US. In Europe, the EMS was under severe strain, with the two main member countries heading in opposite directions, in a world context of financial liberalization and rapid appreciation of the US dollar. Abating inflation, mass unemployment, and very high real interest rates were the hallmarks of the times.

Applied economics: the OFCE

In 1982, Jean-Paul Fitoussi was appointed professor of economics at Sciences Po (Paris) and in charge of the major course of political economy and economic policymaking that was then compulsory for all students. He was also recruited as Director of the Economic Research Department in the newly created independent forecasting and research institute OFCE, under the chairmanship of Jean-Marcel Jeanneney, himself a university professor in economics, as well as a former minister in several cabinets under de Gaulle in the 1960s. Jeanneney had a passion for applied economic analysis and policymaking; he found in Jean-Paul Fitoussi the perfect developer for his research department, who eventually succeeded him as president of OFCE in 1990.

The international and European political and economic context with, on the one hand, the rise of economic liberalism, promoting a retrenchment of state interventions, lower taxes, and the rapid liberalization of markets, in particular financial markets, and on the other, abating inflation and rising unemployment in Europe, was calling for a new analytical framework as it was becoming increasingly clear that standard Keynesian analysis of the IS-LM variety was insufficient – except when it came to fiscal consolidations and their multiplier's effects, one of the most empirically resilient conclusions of standard Keynesianism, while

the "fixed-price" approaches could not cope with a world of inflation, and the dominant "rational expectations" approaches – be they of the "New Classical" or of the "New Keynesian" variety – were denying the possibility of serious disequilibria and the power of macroeconomic policies to fight them. A major contrast between the 1970s and the 1980s was the historically high level of real interest rates, a crucial variable bound to exert massive influence on all economic decisions (Fitoussi et al., 1985).

The bewildering contrast between the US and Europe in the mid-1980s, with the former recovering from the poor macroeconomic performance of the 1970s and early 1980s, while the latter seemed poised in a never-ending "slump," provided the impetus for elaborating, in joint work with Edmund Phelps, a richer analytical framework, one in which financial markets were playing a major role. In *The Slump in Europe* (Fitoussi and Phelps, 1988), real interest rates and exchange rates are seen to exert a decisive influence on producers' pricing decisions, thus enlightening divergent macroeconomic developments in the US and in Europe. Reemphasizing the role of financial variables was, of course, a reminder of Keynes' own insistence on interest rates and expected rates of return; it also carried the Keynesian message that no macroeconomic theory is universally valid: its relevance depends on the institutional framework, hence on the period for which it has being elaborated (Fitoussi and Le Cacheux, 1989).

Thinking global: the International Economic Association and the International Group on Macroeconomic Policymaking

The visibility and academic prestige of the OFCE were not then what they later became, and Jean-Paul Fitoussi has contributed enormously to these later developments. One decisive move was the setting up, in 1988, of the International Group on Macroeconomic Policymaking, with a handful of prestigious economists (Anthony Atkinson, Olivier Blanchard, John Fleming, Edmond Malinvaud, Edmund Phelps, and Robert M. Solow), all interested in European integration issues and economic policymaking. The group was meeting in Paris, at the OFCE, once or twice a year, tackling current macroeconomic policy debates, sometimes with the help of the OFCE's permanent staff. Three volumes were published out this joint venture; the most conspicuous achievements being the in-depth analysis of "competitive disinflation" (Atkinson et al., 1992), that was to become one the most common plagues in the European Union in the decades to come, especially within the Eurozone before and after the 2008 financial crisis, and, in the same volume, a clear analysis of the deficiencies of the fiscal side of European integration.

In the early years at OFCE, Jean-Paul Fitoussi was also appointed Secretary General of the International Economic Association (IEA) by the then chairman of the IEA Kenneth J. Arrow; Jean-Paul Fitoussi held the position for about two decades, under various chairmen, including Kenneth J. Arrow, Robert M. Solow, Amartya K. Sen, and Joseph Stiglitz. In collaboration with these figures of the economics profession, Jean-Paul Fitoussi not only developed the activities of the IEA, especially the triennial world conferences and their series of edited volumes, but also managed to extend the reach of the IEA well beyond academia into the field of advising and policymaking. The opportunity was given, in the late 1980s by the *perestroika*, in the Soviet Union, under the leadership of Mikhail Gorbachev. His government was looking for advice to introduce free-market mechanisms into the ailing centrally planned Soviet economy. An impressive taskforce, with economists from the four major international economic institutions: the International Monetary Fund (IMF), the World Bank, the OECD, and the European Bank for Reconstruction and Development (EBRD), that had just been created, but was not yet staffed – was sent to Moscow to carry out a *Study of the Soviet Economy* (1991). Thanks to his key position and network, Jean-Paul Fitoussi recruited the members who were to work under the banner of the EBRD, including Arrow, Phelps, and Stiglitz.

Fighting for a democratic Europe

True to his conviction that economic analysis should guide policymaking and that the functioning of an economic system cannot be reduced to simple automatically adjusting mechanisms, hence that disequilibria and unexpected developments are pervasive features of market economies, Jean-Paul Fitoussi has devoted much attention to institutions and actual policies, especially in the area of European integration. The numerous institutional changes that have been introduced in the EU over the past three decades have thus been closely scrutinized and criticized, as well as assessed against the observed performance of the EU economy. In addition to the numerous papers on the EMS, the Maastricht Treaty, and the institutions of the Eurozone, this critical assessment of EU institutions building, policymaking, and economic performance has given birth the series of *Reports on the state of the European Union*, first published in French (Fitoussi, 1999, 2000; Fitoussi and Le Cacheux, 2002, 2004, 2007), then in English (Fitoussi and Padoa-Schioppa, 2006; Fitoussi and Le Cacheux, 2007, 2010).

One important implication of Fitoussi's economic analyzes is the necessity for economic policymaking to be reactive to economic fluctuations in order to fight unemployment. This in particular pleads against the

systematic setting of rules that has been characterizing EU institutions building during the past two decades, both in the field of monetary policymaking with the statutes of the European Central Bank (Fitoussi and Creel, 2002) and in the field of fiscal policies, with the Stability and Growth Pact and more recent additions of the arsenal of fiscal policy rules.

Unemployment being one the main evils in European economies, it should be actively fought. And because economic inequalities can be deemed excessive and have been clearly becoming more acute in recent years, a major role of public intervention is to aim at reducing them (Fitoussi and Rosanvallon, 1996). More generally, the idea that in modern, mixed economies the market mechanisms and democratic institutions are two complementary devices of resource allocation, that the market alone is bound to lead to unstainable allocations, and a distribution of incomes characterized by excessive inequality, and that therefore democracy is necessary to correct spontaneous market outcomes in terms of allocation and distribution, has been a constant theme in Jean-Paul Fitoussi's writings.

The adviser and the activist

Writing and publishing for an academic audience is clearly important to influence the state of economic thinking and possibly counteract what Jean-Paul Fitoussi considered misleading economic theory. But he has also always wanted economic analysis to be useful; he has been giving policy advice to policymakers, in France, in the EU, and in international circles. In this also, Keynes' personal involvement in policymaking and advising has been a source of inspiration. And just as Keynes, he has always wanted to make economic reasoning accessible to a large audience, writing op-eds for newspapers, participating in TV transmissions, in France and Italy, as well as publishing widely read books (Fitoussi, 1995, 2013).

Our crises and beyond

Jean-Paul Fitoussi's scholarship and public influence has been especially useful in our time of crisis, a manifold economic crisis, which is also a crisis of economics.

The crisis of macroeconomics

Jean-Paul Fitoussi's critique of modern macroeconomics is certainly of Keynesian inspiration, and it proves extremely useful in our time of rebuilding macroeconomics back to relevance. But Keynes critique itself

is sometimes understood in a too narrow meaning. There are at least two main Keynes-Fitoussi arguments that should be considered.

First, the economic system cannot self-regulate. Another way of saying that, left to its own devices, the economic system creates crisis so that the paradigm of self-regulation must be abandoned for the paradigm of external regulation.

The second critique is that the economic system needs macroeconomic policy when the crisis it has created must be dealt with.

These two simple yet powerful arguments have played a key role in our global "crisis." But the Fitoussi critique has also acquired a political economy dimension that Keynes had not developed, and it applies especially well to the European case.

The political crisis of Europe

The European crisis, while stemming from an international economic downturn, has indeed been unique to Europe: it is the very structure of the EU and even more importantly of the euro area that has turned the financial crisis into a political one. But the political element is at once a cause and a consequence in the economic crisis.

The global crisis shed a crude light on the difficulties of the European Union to respond as a sovereign economic power and a cohesive bloc; flaws that were diagnosed by Jean-Paul Fitoussi in the very first hours of the Maastricht Treaty, some 15 years before the European crisis unfolded, became apparent.

One could reasonably entertain the hope that the Union, after five decades of economic integration and ten years of monetary union, could become the laboratory of international cooperation in the crisis. But the obvious unwillingness of member states to coordinate within the euro area, the economic heart of Europe, and the obvious lack of European solidarity toward the new member states, and more generally the periphery, has doomed European integration. In all, the response to the crisis that Europe first denied before it caught up with her was late and timid.

Jean-Paul Fitoussi's idea that political power is so suspect in Europe that it must be tamed and disguised, and that therefore there is a deliberate empty space of sovereignty, a non-European government, provides a guide to what lies at the heart of the current crisis.

His warning must today be taken seriously: the Great Recession must act as a wake-up call for the EU and especially the euro area. If member states do not reform their common economic institutions and use macroeconomic and social policies to sustain national social compacts instead of destabilizing them, citizens are likely to end up rejecting the

very idea of European integration. The historic achievement of peace has given way to an imbalance between market and democracy that becomes unbearable: the power of rules occupies the political center of the empire so that it becomes hollow as it is extends. European citizens have paid the economic cost of non-Europe.

But Jean-Paul Fitoussi has not only capitalized intellectually of these two vindications of earlier analytical efforts to critique macroeconomics and European integration, he has developed a new agenda centered of the right measurement of economic performance and social progress.

Beyond the crisis: measurement and sustainability

The crisis has indeed revealed a more complex background, which blends social issues and environmental issues. The different crises we are experiencing – economic, financial, and ecological – share common roots, whether the total ignorance of the long-term economic decisions or misallocation of resources. The current crisis is actually a structural transition that exhausts past models and thus provides the audacity to ask the right questions. It reveals the inability of contemporary societies to project over time their basic balances. We are experiencing a crisis of sustainability – financial, social, and environmental.

In this crisis, the issue of inequality has mobilized Jean-Paul Fitoussi's work. The role inequality has played in our crisis and the way their explosion in the last three decades went unnoticed in mainstream economics calls for a better measurement of economic realities.

Across the world, scholars and policymakers are indeed recognizing in growing numbers that standard economic indicators such as GDP are not only delusive horizons for societies, but broken compasses for policy. By attempting to measure well-being, they try to pinpoint the real drivers of human flourishing beyond material conditions. By assembling the building blocks of sustainability, they engage in an even more daunting task, which is to understand under what conditions human well-being can be maintained in time, under severe ecological constraints. This endeavor matters for two simple and important reasons: because un-measurability means invisibility, or, as the saying goes, "what is not measured is not managed"; because, conversely, measuring is governing: indicators determine policies and actions.

Finding an accurate metric for this knowledge effort itself is no obvious task. This is what the Stiglitz-Sen-Fitoussi Commission, sometimes misunderstood, wanted to do – not add to the list of alternatives indicators, but provide the robust guidelines to assess and improve them.

Because some new well-being indicators actually suffer from far more serious methodological shortcomings than the ones they purport to redress; there is simply no robust sustainability indicator that exists today.

This year, we are celebrating the 70th anniversary of the reign of GDP: conceived in the 1930s by Simon Kuznets, it was crowned king of all economic data at the Bretton Woods Conference in July 1944, when Western nations embraced it as their common power and success currency. It will take time to complement it and eventually replace it by indicators able to yield true and lasting policy change. But the revolution of well-being and sustainability is under way (ironically, it is under-estimated), and Jean-Paul Fitoussi has, with others, greatly contributed to it.

Contributions to the volume

We have chosen an original format for this volume, which blends together the traditional "Essays in honor of" publication with a Fitoussi's reader. He was indeed given the opportunity to respond to each of the four essays in the volume.

Kenneth J. Arrow's contribution outlines the ways an inclusive definition of wealth can come to life, relying on a well-defined concept of capital, which should be understood as productive ("increasing the amount of capital increases the production of goods, including health"), capable of storing value ("available for purchasing present and future consumption"), and alienable. But Arrow also warns about pitfalls and difficulties in extending this definition to human capital and, one can easily imagine, social and knowledge capital. Here also, the comprehensive wealth agenda, that leads to a broad notion of sustainability, which is the kind of sustainability Jean-Paul Fitoussi believes in, is indeed a dynamic endeavor for the long run.

Joseph Stiglitz criticizes the current state of macroeconomic theory and the orientations it gives to macroeconomic policies. The need for a complete reconstruction of macroeconomic theory, on sound micro-foundations that incorporate the microeconomics of asymmetric information markets, is forcefully advocated. This new macroeconomics should get rid of the representative agent hypothesis that crowds debt and distributional issues out of the currently dominant macro models; it should also acknowledge the endogenous character of shocks generating – often large and persistent – macroeconomic fluctuations instead of postulating exogenous shocks. The advocated analytical framework should account for such features of present day economies as perceived – or "pseudo" – wealth effects induced by asset price changes, income

inequalities, and the distributional effects of macroeconomic policies. He points to devastating shortcomings in current fashionable conventional wisdom about macroeconomic policies, in particular stressing the ineffectiveness of monetary policy in times of depressed demand, in a context of globalized financial markets and multinational firms enjoying a huge cash glut and the need for carefully designed fiscal policies.

Edmund Phelps discusses the main thrust of Jean-Paul Fitoussi's positions on European integration, the undemocratic and unequal treatment of citizens, and the dismal consequences of the "pensée unique" among people holding power in national and European institutions in the EU. He regards Fitoussi's main message as being in favor of pluralism and "voice." He contrasts Fitoussi's concept of justice with Rawls' and raises some points of disagreement about current state interventionism.

The paper by Robert M. Solow, one of the master architects of growth models, deals with the measurement and sustainability agenda embraced by Jean-Paul Fitoussi in recent years with the Commission on the Measurement of Economic Performance and Social Progress. But this agenda actually goes much farther than this when Jean-Paul Fitoussi studied and earned his degree in accounting before turning to economics. Solow's core message is one of precaution: while it is decisive for society, sustainability is hard to define and even harder to measure ("beyond us" says Solow). What we should aim for instead is making a "useful contribution to the political economy of sustainability," which is already hard enough.

Amartya K. Sen, in closing of this collective tribute of intelligence to Jean-Paul Fitoussi, remarks, "It is not the case that Jean-Paul Fitoussi and I have never disagreed, but I have always felt the sense of sharing similar lines of reasoning, if not always exactly the same conclusions ... I do not think our relationship would have been as much fun if we had always agreed." We don't see a better way to end this introduction and invite the reader to begin his journey through this volume.

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Prologue: The Measurement of the Economic World

Kenneth J. Arrow

When I was elected President of the International Economic Association in 1983, I found that there was a vacancy in the position of Secretary-General. I lack any serious capacity for administration, but I have a substitute: a talent for identifying good administrators so that I can put my research project or other activity under their wing. I promptly started interviewing, Jean-Paul Fitoussi and others. It really required no ability on my part; he was obviously the right person, as attested by strong recommendations from, as I recall, Richard Musgrave and Don Patinkin.

Our job was to organize the next triennial meeting, to be held in India, which meant that Jean-Paul Fitoussi was sweating and straining the innumerable logistical and political details (would Israel, Pakistan, and South Africa be permitted to attend?). Until I actually sat at the opening session, I was nervous as to the outcome, and, as I recall, he was undergoing considerable tension. But there was no hitch.

He remained the source of continuity and organization in the International Economic Association, working with successive presidents and executive committees, at least through the 1996 meeting in Tunisia, where the authorities singled him out for honor as a native son. But his interests since 1990 shifted to the organization and perpetuation of the Observatoire Français des Conjectures Économiques, devoted to the collection and analysis of economic data. While still attesting to Jean-Paul Fitoussi's organizing ability, this post gave greater scope for his originality and depth in economic analysis. Books and papers on unemployment, inflation, open economies, democracy and the market, and macroeconomic policy ensued. I will take the theme of my remarks today from another enterprise, the serious critique of the standard measures of gross national product as a measure of human welfare. This is the subject of a very important study, which Jean-Paul Fitoussi organized at

the behest of President Sarkozy and which was led by him in collaboration with Joseph Stiglitz and Amartya K. Sen.[1]

I will not review the many recommendations of this study, which should be carefully perused by the statistical agencies of the United Nations and the governments of the world. I will rather remark, in a somewhat disorganized way, on some of the fundamental issues in relating national income in its variant forms to any measure of welfare. In particular, I want to say a few words about the dynamic counterpart of income, namely, wealth. The growing emphasis on sustainability, greatly sharpened by the increasing concern about global warming, has given greater point to the appropriate measure of an inclusive concept of wealth.

A welfare statement is a statement about values and about the variables to which values are assigned. The variables are the commodities being measured. The values are inferred from behavior. The standard economic analysis assumes these commodities are purchased on a competitive market, so that (marginal) values are proportional to prices.

In the simplest case, all commodities are chosen by their users and consumed today. Then, an increase in quantities consumed commensurated by prices represents an increase in utility according to conventional arguments. Even then there are complications. There are many individuals with differing budget limits and differing preferences. Not much can be done about the latter problem. The former is probably best studied by a separate index of income inequality.

The issues remaining can, in a certain sense, be summed up in the statement that many commodities entering into welfare are not well represented on markets. There are (at least) two broad types of such commodities. One, which has been given perhaps the most concern, has been the set of goods usually referred to as *externalities*, including more specifically, *public goods*. The other is the decisions made that affect, though they do not determine, *future goods*.

Before elaborating on these two categories, I should mention as an aside, one good or type of goods, which it would seem, does enter the market, yet is not used in real GNP calculations: time or leisure. In the simplest sense, an individual divides his or her time between work, the price of which is the wage, and leisure. Therefore, as was pointed out many years ago by Nordhaus and Tobin,[2] we should value leisure at the wage rate. This is obviously non-trivial in making international or intertemporal comparisons, for example, in comparing European countries with either the United States or Japan. This calculation, unlike those usually discussed, is simple, and the price variable readily identified.

Time is also complementary to various kinds of consumption, obviously so in vacations. This at one time gave rise to a considerable literature, spearheaded by Becker[3] and Linder[4] but it does not seem to have been continued.

To return to my main thread, let us consider externalities. There are many examples, from the obvious to the subtle. What have been called "fugitive resources," water and air, flow from place to place, and clearly property rights cannot be assigned to a drop of water or to molecules of nitrogen and oxygen. Water is valuable, especially in areas depending on irrigation, like my home state of California. As a result, a very complex set of laws provides property rights, which, for the most part, create strong incentives for inefficiency. For example, a farmer or other owner must use the water assigned or lose rights to it, a strong incentive to use it for low-value activities to preserve the rights for the future. Air is not scarce. However, both air and water can be bearers of noxious substances; indeed, the most classic textbook example of an externality is air pollution.

These externalities should, of course, be included in any measure of welfare. But now we have the problem of finding a price for the externality when there is no observed price in the market.

The practical solution is to find some point of contact with some market. An outstanding example is the "value of statistical life" (VSL) introduced by Thaler and Rosen.[5] They noted that industries have differing risks of accidental death and that, controlling for other variables, wages increase with increasing probability of accidental death. The coefficient in this relation can be regarded as the VSL. A review of the estimates for the VSL found in this and other ways is to be found in Viscusi and Aldy.[6] These figures are in fact used in the United States in setting air quality standards, when combined with an estimate of the probability of death due to particulate matter, sulfur dioxide, or other air impurities.

Indeed, the value of health has turned out to be a very significant modifier of welfare comparisons whether across nations or over time. Nordhaus[7] has argued persuasively that the value of the increases in health (measured by longevity) over time have been equal to those derived from conventional measures of consumption. Becker et al.[8] have argued that measured inequality among nations is significantly reduced if the convergence in health is taken account of.

Other externalities might be criminality in the area or the quality of public education. The values of these might be estimated from the regression of land values on them (again, correcting for other variables). It is standard to enter government expenditures on public goods in GNP

accounts as a kind of consumption. They are indeed made up of market transactions (purchasing goods and services). But whether or not they correspond to the marginal values of the population would require an optimal benefit-cost analysis, which is by no means a necessary outcome of political processes.

The question of future goods is intimately related to the now widespread interest in sustainability. In income terms, it corresponds to saving on one side of the ledger and investment on the other. An obvious point is that the "G" in GNP is certainly not right; if capital is disappearing: this is certainly not a gain in future consumption. The most brazen failure in current national income accounting is the omission of depreciation of natural resources, even from net national product. The failure to account for depreciation in gross national product is also an obvious fallacy. The only defence is statistical; depreciation cannot be measured accurately, essentially because the markets for used capital goods are so lacking.

Some attention has been devoted recently to looking at sustainability in wealth terms. We must value future as well as present consumption and include all the future externalities, such as health. When we look to the future, concepts that seem identical when looked at within a single period become differentiated when considering development over time.

I am thinking in particular about the concept of capital stock. The concept was originally designed to cover land and reproducible capital (buildings and machines). It has three characteristics: (1) it is productive, that is, increasing the amount of capital increases the production of goods, including health; (2) it constitutes a store of value to the owner, available for purchasing present and future consumption; and (3) it is alienable. The capital concept has been fruitfully extended, most notably to human capital and to health. However, it must be noted that these extensions are by no means without difficulty. Human capital satisfies conditions (1) and (2) but not condition (3). Human capital is indissolubly linked to a particular person. Health capital (i.e., discounted value of future years of life) satisfies only condition (2) and can be used only for future health, not for other kinds of consumption.

These considerations are all part of a movement toward measurement of an inclusive definition of wealth, a concept of economic potential that is a dynamic analogue of national income. For the thinking of some of us, see Arrow et al.[9]

I am grateful for the opportunity to express my gratitude to Jean-Paul Fitoussi. I only regret that unexpected circumstances prevent my

attendance in person on June 2013 in Paris. He has been a very good friend over the years, and we will look forward to his continued scholarship when the excitement of this celebration is over.

Notes

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1
Reconstructing Macroeconomic Theory to Manage Economic Policy

Joseph E. Stiglitz

It is a great pleasure for me to participate in this event celebrating Jean-Paul Fitoussi's contribution to economics and to public life. There are so many aspects of his work and of his collaborations over a long period of years on which I feel I should comment: His role, for instance, in the International Commission on the Measurement of Economic Performance and Social Progress, has provided a critical impetus to what is now a major global movement. The commission's work was not just about measurement; it was about shaping our society, for what we measure affects what we do.[1] I should talk too about his contributions over a quarter century to the International Economic Association, where he served as Secretary General, and which he continues to advise. I could talk as well about his efforts to reshape the G20 agenda when France chaired that group,[2] or the work we did together in the Commission of Experts of the President of the United Nations General Assembly on Reforms of the International Monetary and Financial System, in the aftermath of the global financial crisis.[3]

But I have been asked to talk about macroeconomics, where Fitoussi has been a persistent advocate of policies that maintain full employment and institutional reforms, which would make it more likely that such policies would be adopted. But, of course, if we are to adopt policies that ensure full employment, we must understand why the economy often – as now – operates far below its potential. It should be evident that the macroeconomic models that predominated before the crisis were inadequate. We have to reconstruct macroeconomic theory if we are to do a better job in managing economy policy – the subject of this session, and the subject of much of Fitoussi's life's work.

The subject itself reflects a distinctive aspect of his work: a deep commitment to economic science, to the notion that economic policy

has to be rooted in an understanding of economic fundamentals; and a deep commitment to policy – to the notion that our knowledge, such as it is, cannot remain within the ivory tower, and must be used to the betterment of mankind. His belief in democracy and democratic institutions has meant that he has worked hard not only to advocate institutions, such as central banks, which are more democratically accountable, but to translate the abstract ideas of economic theorists into a language that is more widely understandable. If our democracy and our economy are to work, there must be more of those with the dedication that Jean-Paul Fitoussi has demonstrated.

Why macroeconomics needs to be reconstructed[4]

No one would, or at least should, say that macroeconomics has done well in recent years. The standard models not only didn't predict the Great Recession, they also said it couldn't happen – bubbles don't exist in well-functioning economies of the kind assumed in the standard model. Not surprisingly, even after the bubble broke, the models didn't predict the full consequences, and they haven't provided good guidance to policymakers in responding to the crisis. A half decade after the bursting of the bubble, US unemployment is still high – with almost one out of eight Americans who would like a full-time job not being able to get one.[5] The government is still financing almost all mortgages.

So, too, our standard models didn't predict either the occurrence of or the follow-on from the euro crisis – neither its occurrence nor its evolution, including the high levels of unemployment that persist today, and a downturn that in some countries is comparable to that of the Great Depression.

The assertions about how well the economy was performing just before the crisis by those who relied on such models are a painful testament to how badly our models performed. As Robert Wade[6] has written:

> In April 2006 Anne Krueger, deputy managing director of the IMF, announced the IMF's view that "the world economy has rarely been in better shape."[7] In May 2007, Jean-Philippe Cotis, the chief economist of the OECD, presented the OECD's view that "the current economic situation is in many ways better than what we have experienced in years…Our central forecast remains quite benign…[we expect the OECD to show] strong job creation and falling unemployment."[8]

These assertions of confidence in the economy were made after the housing bubble – which was the precipitating event that brought on

the crisis – had already broken. Even after the bubble broke, Bernanke predicted that the crisis would be contained.[9] Their record in seeing that there was a bubble, let alone predicting when it would burst, was perhaps even more dismal. When shortly before the bubble broke, Greenspan was asked whether there was a bubble, he replied that there was not – just "a little froth" on the economy.[10]

The test of science is prediction – and one should have some skepticism of a model that can't predict the two biggest macroevents of the last 80 years. A model whose predictive ability is so weak, it can hardly be relied upon for policy guidance. With so many of the same policy-makers in place after the crisis as before, relying on the same flawed models, it is no wonder that our recovery from the crisis has been so disappointing.[11]

Those who were so optimistic about the economy even as it was about to implode were guided in their assertions by the prevalent models. Not only did such models deny the existence of bubbles – in spite of more than two centuries in which capitalism had been marked by volatility, much of it brought about by credit and asset bubbles – the models asserted that even if there were a bubble, globalization had enabled the effects of its breaking to be diversified away. They didn't even contemplate that the effects could have been amplified in a process of contagion.

It is remarkable, given how poorly the models performed, how complacent some of the advocates of the model have been. Defenders of the model (such as Ben Bernanke) argue that the models actually worked quite well – for the purposes for which they were intended:

> The standard models were designed for ... non-crisis periods, and they have proven quite useful in that context.[12]

Indeed, Bernanke argued that there was little wrong with the models themselves:

> the recent financial crisis was more a failure of economic engineering and economic management than ... of economic science.[13]

Defenders of the model often go further, arguing that no model could deal with events that happen once in 80 years, accidents of nature that are intrinsically unpredictable. But this misses three essential points: (1) The economy wasn't really performing well, in a fundamental sense, prior to the crisis; it was setting up the conditions – the excesses – that led to the crisis; (2) The crisis itself was not just the result of an "accident,"

an exogenous event that struck the economy; rather the crisis was *created,* or at least enabled, by the economic policies that Bernanke and Greenspan pushed; And (3) the benefits of slightly better performance in prediction in times of "normal" economic activity are far outweighed by the failures in prediction in the context of deep downturns. If we are concerned with overall societal welfare, macroeconomics should be focused on these deep downturns. Between the US and Europe, the loss in output as a result of the current downturn amounts to well over five trillion dollars, an amount far in excess of the benefits from improved fine-tuning of the economy in normal times over decades.[14]

Embarrassingly, some of the defenders of the current models go even further. One, Ed Prescott, gloated that this is the "golden age of economics."[15]

Back to the beginning[16]

The title of the session provides a nutshell summary of today's predicament. Prior to Keynes, there was, among classical economists, the general belief that markets worked well, that they were stable and efficient. Indeed, so strongly were these beliefs held that in the midst of the Great Depression, a majority of American economists supported the notion that government should do nothing. Markets would self-correct. (These economists did not, of course, explain why matters had gone so disastrously.)

Keynes provided an answer – a theoretical model, or perhaps more accurately, a set of theoretical models, with clear policy implications, the central tenets of which were: (a) markets were not self-correcting, at least in the relevant time span – unemployment could persist; (b) in deep downturns, monetary policy was ineffective; and (c) fiscal policy – government spending – could stimulate the economy, by a multiple of the amount that was spent.

The model provided an explanation both for the disaster that was associated with US President Herbert Hoover's economic policies and for the successes of the New Deal and the war-led recovery in the US. Keynes's ideas were incorporated in 1946 US legislation that recognized the responsibility of the government to maintain the economy at full employment, and entrusted the Council of Economic Advisers with formulating macroeconomic policies that would ensure that this would be achieved. In the ensuing decades, there were several instances – most notably under President John F. Kennedy – where Keynesian ideas were tried and tested, and worked.

But Keynes was never liked by those who believed in unfettered markets – who wanted to minimize the role of government – and the counterattack that began in the 1960s had remarkable successes in the ensuing decades. Prosperity meant that the Great Depression quickly faded into ancient history, and the problem of the day was inflation, not unemployment. The economics profession changed, too, demanding greater standards of rigor. The schism between microeconomics, which focused on well-functioning markets (which always "cleared," so that there was never any unemployment), and in which the central result was Smith's invisible hand, and macroeconomics, which focused on dysfunctional markets, which could be characterized by high levels of unemployment, was unsettling.

Modern macroeconomics can be viewed as growing out of an attempt to reconcile traditional Keynesian macroeconomics with microeconomics.[17] There were two ways to achieve such a reconciliation: try to adapt macroeconomics to the microeconomic model of the time, or try to glean from macroeconomics insights about what was wrong with the traditional microeconomic models and reform them accordingly. Much of the mainstream of economics took the former course – just at the time that standard microeconomics was itself under attack, from the proponents of theories of imperfect and asymmetric information, game theory, and behavioral economics.

Mainstream macroeconomics came to be dominated by two "churches" – I use the term advisedly, because both were dominated by strong beliefs, which could be little altered by evidence and experience, though the style of argument *seemed* to suggest that both based their faith on a close examination of the empirical record.

One school returned to the doctrines of the classical economists, holding that markets worked well, that policy intervention was unnecessary. Some took the (seemingly absurd) view that what was widely viewed as unemployment was actually just leisure. Their theories were designed to explain the wide fluctuations in the demand for leisure. When challenged with the observation that normally, when individuals are experiencing a period of extensive leisure, they feel happy, and yet there were ample indicators that in recessions, that was not the case, they responded: that was a matter for psychologists, not for economists.

They held two further, somewhat contradictory positions: government policy was likely to be ineffective, and, if and when it had effects, it was counterproductive.

In support of their models, they took a major step backward from the use of statistical inference. They constructed calibrated models, and

using simulations, described the correlations between certain selected variables, comparing those correlations with observed correlations. In many cases, when one looked at the underlying behavior, for example, of savings or labor supply, it was in fact poorly described by the model. What had begun as an attempt to reconcile macro- and microbehavior seemed, in the end, to almost ignore what should have been the underlying microfoundations.

Part of the reason for the failure of these models was their reliance on the concept of the fully rational representative agent with rational expectations – the notion that the economy could be well described as if it consisted of a group of identical such individuals. Such models couldn't embrace information asymmetries: with a representative agent, these could only arise if the individual suffered from acute schizophrenia, which would in turn be hard to reconcile with their assumptions of all-knowing rationality.

Moreover, it is hard to have a robust financial sector in representative agent models: who is lending to whom? Since all risk is borne by the same (representative) agent, financial structure can't matter. Not surprisingly, banks then play no role. With the financial sector at the center of this, and many other crises, it is no wonder that these models had little to say – either before or after the crisis.

The belief in rational agents with rational expectations was taken almost as an article of faith. My own research into equilibrium models with asymmetric information but rational expectations clearly demonstrates the need for behavioral economics: even if models with information asymmetries but rational agents with rational expectations are able to explain many phenomena that the standard model with perfect information fails to account for, there are many important phenomena that simply cannot be explained even within that model.[18] It should be clear, too, that the behavior of so many market participants in the run-up to the 2008 crisis cannot be reconciled with any model of "rational behavior with rational expectations," even if there were some market participants who profitably exploited others' irrationality.

The second of the two mainstream "churches" was a little – but only a little – better. It too relied on variants of the representative agent model, maximizing utility over an infinite lifetime, with rational expectations. Accordingly, it too largely ignored financial markets, credit, and a host of other behavior hard to reconcile with observed macro- and microbehavior.

It can be thought of growing out of the Hicksian fixed wage/price interpretation of Keynes. While basing itself on the standard competitive

equilibrium framework, they recognized that there could be unemployment, and the challenge was how to reconcile this reality with the standard competitive equilibrium model. There was a simple answer: a single market failure – prices and wages didn't adjust to the equilibrium level. It was the smallest deviation from the standard competitive equilibrium model that could give rise to persistent unemployment. But the fact that such a model *could* explain persistent unemployment doesn't in fact mean that it provides a good explanation of what has actually occurred; it doesn't mean that the model is a "good" model.

This particular church had implications that were as pernicious as the first. It essentially blamed the victim for unemployment. If only workers would accept lower wages then unemployment would disappear, and the economy would be restored to its potential. The belief in this notion helps explain why central bankers, rather than sticking to their own knitting – trying to ensure financial stability – were so fond of discussing labor market rigidities. It was unions and government intervention in labor markets (through labor protection legislation, minimum wages, etc.) that were at the root of the problem. If only government allowed markets to work as markets then the macroeconomy would behave as classical economists had predicted.

But this was nonsense and was shown so by the current crisis. In the initial years of the crisis, the United States, with purportedly the most flexible labor market among the advanced countries, performed in many ways far more poorly than the Northern European countries.

But the idea had long before been discredited: there are many economies with weak or essentially nonexistent unions and little or no effectively enforced government protections that are marked by high levels of unemployment.[19] With Easterly and Islam, I sought to explain the levels of volatility across countries: excessive financialization appeared more important than wage rigidities.[20]

Some advocates of these models recognize its limitations, arguing that it is, however, just the beginning of a research strategy that will, over time, bring in more and more of the relevant complexities of the world. Anything left out – agency problems, financial constraints, and so on – will eventually be incorporated. (And especially since the crisis, DSGE models incorporating some of these features have been constructed.) To the contrary, I believe these models are *not* a good starting point. Such Ptolemaic exercises in economics will be no more successful than they were in astronomy in dealing with the facts of the Copernican revolution.

It should be clear then why a reconstruction of macroeconomics is necessary.

The foundations of a reconstruction

Once one goes beyond the standard competitive equilibrium model, one can easily explain market failures, including markets that do not clear. (It is real rigidities, not nominal rigidities, that, for instance, should be relevant for the failure of the labor market to clear.) Indeed, the presumption that markets were efficient (Adam Smith's invisible hand) was reversed by the Greenwald-Stiglitz theorem,[21] which showed that whenever there was asymmetric information or imperfect risk markets – that is, essentially always – markets are not constrained Pareto efficient (taking into account the costs of obtaining information and creating risk markets). That has some important implications: privately profitable transactions may not be socially desirable. The banks may have incentives to engage in contracts with each other that make, for instance, the economic system more unstable (which is exactly what they did). There are important (pecuniary) externalities associated with individuals' actions that matter and which individuals do not take into account. Price changes have not just distributive consequences, but also shift incentive compatibility, self-selection, and collateral constraints.[22]

These models not only provide a better explanation of the rigidities that exist (providing an explanation for *real* rigidities, e.g., in wages, as a result of efficiency wage effects[23], [24]), but suggest that there are other market failures – for instance, the failure of contracts to be fully indexed – with significant macroeconomic consequences. They pick up strands of thought in Keynes (as well as others, like Fisher[25]) suggesting that wage and price flexibility may be a problem: with unindexed contracts, real debt burdens worsen as wages and prices fall. They thus suggest that the natural dynamics of the economy may be unstable – the fall in wages and prices in response to a downturn may exacerbate the downturn, not correct it.

It is strange, in fact, that macroeconomic theories focusing on wage and price rigidities became so fashionable, when in the Great Depression, wages and prices fell so deeply and rapidly. Would things have been better if they fell even faster?[26]

This illustrates another incoherence in the standard model: the more rapid fall would have led to higher real interest rates, given that the nominal interest rate can't fall below zero. The standard model focuses on the role of real interest rates. If so, more wage and price flexibility would have made matters worse. Of course, if real interest rates played the central role that the standard models assert, even with a zero lower bound, there would be an easy way to lower the real interest rate,

through tax policy. A large but declining investment tax credit would confront firms with intertemporal choices that are similar to those associated with high real interest rates.

But I don't believe, especially today, that the zero lower bound on nominal interest rates is the central problem, the critical impediment to the restoration of the economy to full employment. Real interest rates in the United States are already -2%. Does anyone really believe that lowering them to -4% would solve the economy's problem? To be sure, a sufficiently large negative real interest rate might make a difference, but such a change would entail such an increase in uncertainty that we cannot be sure even of the direction of the effect. (I will return to this issue later.)

Again, the representative agent model (and its descendants) imposed a straightjacket that made it difficult to think clearly about what was going on. The problem was not just that the T-bill rate couldn't be negative, but the unavailability of credit to firms and the adverse terms at which such credit was available. The spread between the lending rate and the borrowing rate was endogenous. There could be credit rationing – indeed, the inability of banks to borrow *was* the liquidity crisis that brought on the downturn. To me, the strangest aspect of modern macroeconomics was that central banks were using a model in which banks and financial markets played no role.

The central questions of macroeconomics

Thus, for me, the reconstruction of macroeconomics based on alternative models to those of the two prevailing "churches" of mainstream economics is likely to provide better answers to the three central questions underlying deep downturns, and thus to provide better guidance for economic policy:

a. *What is the source of the disturbances?* The standard models assumed that they were exogenous technology shocks – by implication, the Great Depression was marked by an episode of acute amnesia, where in large parts of the world, people got less productive! The reality was that this and most other major downturns are man-made events.[27] The system creates them. And that means it may be possible for us to at least reduce their frequency and depth.
b. *Why do seemingly small shocks* (after all, even the sub-prime mortgage market was only a small fraction of global wealth) *have such large effects?* Standard theories describe the economy's buffers – how, for instance, price and inventory adjustments help stabilize the economy.

Instead, it seems that the system often amplifies shocks.[28] And shocks spread, like a contagious disease. Indeed, a central concern of policy makers after a shock is preventing contagion. But the standard models say that interdependence – global diversification – contributes to stability. Their implicit recommendation for a group of individuals found to have smallpox would be global diversification – send a few with the disease to each locality. But we all know that this would have spread the risk and amplified the problem.

c. *Why do deep downturns last so long?* Why does there seem to be such persistence? After all, we have the same human, physical, and natural resources today as we had before the crisis. If markets worked well, we would quickly be restored to full employment. Debt can't be the problem: after all, debt is just money that we owe to ourselves. It is a matter of distribution, and in the standard models, distribution doesn't matter. And even if debt did matter (because distribution matters), standard theory says that there is still a new full employment equilibrium. The standard theory provides no explanation for why we don't quickly get there, other than wage and price rigidities. We should note that the losses after the breaking of the bubble are far larger than those associated with the massive misallocation of capital prior to the crisis. Moreover, the state variables (capital stock, labor supply, human capital) change slowly. If (as in the standard model) there was a continuous mapping from state variables to the value of market equilibrium variables, then presumably the requisite change in wages and prices would be small, so that even with imperfectly flexible wages and prices, the aggregate loss from the rigidities would be small. This would not, of course, be the case if there were multiple equilibria, so that (with the same state variables) the economy's equilibrium could change dramatically.[29] It is, in fact, easy to construct models with such multiple equilibria, once one leaves the world of representative agents. There can even be multiple rational expectation equilibria.[30]

Recently, I have been working on models in which there can be large changes in *perceived* wealth.[31] When individuals have different expectations (which can easily occur in the presence of differences in information even with rational expectations), then there is scope for them to engage in bets. Each of the two sides believes (in expectation) that they will win, and the sum of the believed wealth exceeds the "true" wealth. I refer to this perceived wealth as "pseudo-wealth." Of course, next period, when the bets are settled, one side of the bet will win, the

other lose, and pseudo-wealth will get destroyed. But if differences in beliefs persist, then new pseudo-wealth will be created.

But if, for some reason, there are changes in the economy such that the ability and/or willingness to engage in such pseudo-wealth creation changes, then the total perceived wealth of the economy can change quickly. There will then be large changes (at current wages and prices) in levels of consumption and investment and other aspects of economic activity (lending). Such changes can occur even if prices themselves are *actuarially* accurate; but even more so if (as in Scheinkman et al.[32]) prices differ from actuarial value, and the disparity between the two can change quickly. An event such as the bursting of a real estate bubble can change both the ability and willingness to engage in bets (and thus the level of pseudo-wealth in the economy), and the magnitude of the disparity of beliefs (before the crisis, some believed that there was a bubble, others that there was not; after the crisis, it was clear that there had been a bubble).

Indeed, a crisis can give rise to the rapid creation of negative pseudo-wealth, as creditors become more pessimistic about the ability of borrowers to repay their loans, while borrowers believe that they will repay (and act accordingly).

The theory of pseudo-wealth can explain how, even when there are small changes in the standard state variables (physical, human, and natural capital), there can be large changes in macroeconomic behavior (in, for instance, aggregate consumption), for there can be large changes in perceived wealth, and the effects of these changes may not easily be offset by changes in relative prices – including interest rates.

I do not have time to flesh out further how this reconstruction of macroeconomics (as it has proceeded so far and how it may proceed in coming years) provides answers to these three questions. I want to move on, however, to how these theories, even in their imperfect state of development, provide policy frameworks that are far more likely to produce better macroeconomic performance – illustrating the links between theory and policy that have been the hallmark of Fitoussi's work.

Importance of inequality

First, though, I want to highlight one aspect of Fitoussi's work that is essential to understanding why the policy recommendations that he has urged – and which I believe are correct – differ so markedly from those of the standard model. It is that *distribution matters*. If one is concerned about social justice, then this is obvious. But distribution matters even if one is just concerned about economic performance.[33]

It matters, in particular, if the marginal propensity to consume differs significantly for at the top and those at the bottom. While there is overwhelming evidence that that is the case[34] – reinforced by recent work focusing on consumption behavior in this recession[35] – there are still those who believe to the contrary, citing Milton Friedman's classic work. But Friedman, a devotee of free market economics, not surprisingly ignored the importance of credit constraints; which explain why those at the bottom might have a higher marginal propensity to consume than those at the top.[36]

Greenwald and Stiglitz (1993, op cit*)* have also shown that the distribution of net worth among firms also matters. An increase in the relative price of oil benefits oil producers at the expense of the oil users; but the latter are likely to contract output, employment, and investment as a result far more than the former increase output, employment, and investment, so that such a change will have a contractionary macroeconomic effect. But the same would be true for a decrease in the relative price of oil.

It is worth noting that to those on the right, this attention on distribution is an anathema. As Robert Lucas forcefully put it,

> of the tendencies that are harmful to sound economics, the most seductive and ...poisonous is to focus on questions of distribution.[37]

I might suggest that, to the contrary, of the tendencies that have marked modern macroeconomics, the most seductive and poisonous is the failure to pay due attention to inequality.

Policy frameworks

I begin my discussion of policy frameworks with two ideas that have played a central role in recent policy discourse: can austerity work, and can government spending work? I then discuss the limitations of monetary policy.

Fitoussi has been particularly focused on how the answers to these questions are affected by a country being a member of a currency union, and I shall accordingly discuss the answers to these questions both in the context of the US and the countries in the Eurozone.

A. Austerity and contractionary expansion[38]

The notion that the government could restore the economy to health by cutting back on spending – contractionary expansions – is one of

the strangest to have emerged in recent policy debates. Yet, austerity is in fashion in many quarters, buttressed by an occasional study (most notably the work of Alesina and Ardagna).[39] It is remarkable that the idea ever gained fashion, and even more so after the studies that underpinned it were thoroughly discredited (even by the IMF[40]).

Hoover's austerity is widely given credit for helping turn the stock market crash of 1929 into the Great Depression; the policies that the IMF-US treasury foisted on East Asia and Latin America similarly converted downturns there into recessions, recessions into depressions. By now, it should be clear that austerity has not worked in Europe – with unemployment reaching record levels. This is true even though there are some who have seen in the end of the recession proof that austerity works. But the end of a recession is not the same as a robust recovery; and even with the "official" end of the recession, per capita GDP remains below what it was before the crisis, and unemployment rates, especially of youth, remain highly elevated. Several of the European countries can best be described as in a depression. Moreover, the real test of the success of an economic policy is not whether the economy eventually returns to full employment: every economic downturn eventually comes to an end. It is the depth and duration of the downturn and the magnitude of the long-term damage. Austerity, in these terms, has been a disaster: the cumulative gap between actual and potential output is already in the trillions. Today, the Eurozone economies are some 15 to 20% below where they would have been had there been no crisis, *and the gap is not closing*. Countries that engaged in less contractionary policies did less badly. I believe austerity has been a key factor in contributing to Europe's poor performance in the years since the crisis.

There have been some discussions of instances in which government cutbacks have been associated with economic expansion. Some have suggested that these benefits arise from supply side responses (e.g., as a result of the lower tax rates, now or in the future, there is a negative balanced-budget multiplier). But in situations such as the current one, where aggregate demand is limiting output, supply side responses can even increase unemployment and have an adverse effect on output: the downward pressure on wages shifts the distribution of income toward profits, lowering aggregate demand. This suggests that the few instances of government cutbacks bringing on expansion must be special and peculiar. And indeed that is the case: they happened in small countries that had the good fortune to have exports expand more than enough to fill the gap in aggregate demand caused by reduced government expenditures.

They are typically instances where (a) the country's trading partners were growing, so the export market was expanding; and (b) the country had a flexible exchange rate, so it could quickly become more competitive by lowering interest rates or undertaking other policies that affect the exchange rate.

For Europe and America now, the notion that exports could fill the gap created by reduced government spending is a chimera, especially in view of the current global slowdown. And this is especially so for the weak countries in Europe. With their fixed exchange rate with their major trading partners in Europe, austerity is designed to improve competiveness by forcing down wages and prices, in a process called internal devaluation. But internal devaluation has never worked to restore an economy to health, partly because the decreased wages increases the burden of debts denominated in euros. The decreased demand for non-tradeables typically more than offsets any gains from increased exports.

But looking across Europe, the growth in exports has been at best disappointing; the improvements in the current account position are mainly a result of the decreased imports as a result of lower incomes. (Part of the reason for this is that the ECB, focusing on inflation, allowed interest rates to remain high relative to those in the US, increasing the value of the euro.)

Perhaps the strongest criticism of this approach to economic recovery is (to the extent it is successful) it is a policy that is aimed more at shifting demand away from others than at increasing global aggregate demand.[41] Indeed, by lowering incomes in the afflicted countries and increasing the burdens of their debts, it reduces global aggregate demand.

But for those in the Eurozone, with an exchange rate that cannot adjust, with a single market, where capital (in principal) can flow freely, and with a single currency but without the institutions necessary to make a single currency work, the abandonment of austerity – without further reforms in the structure of the Eurozone – poses its own problems: Weaknesses in Spain and Greece, for instance, are caused not just by the lack of government spending, but by lack of lending – an almost inevitable consequence of the failure to have a banking union. With a weak private sector, the burden on government is all the greater. And if somehow, the economy is restored to full employment, large current account deficits are likely to show up in many of the countries.

If a single currency is to work, then, not only must the policies of austerity be reversed, but other reforms *in the structure of the Eurozone, its policies, and its institutions* will have to be undertaken. At a minimum, there will have to be some form of mutualization of debt, a robust

banking union, with common supervision, resolution, and most important, deposit insurance, and a *convergence* strategy.

Here is where Europe failed most – in its diagnosis of what was required for convergence, for the countries to be sufficiently similar that they could share a common currency. The Maastricht convention was based on neoliberal notions that, if only the government managed the macroeconomy well, the private sector would ensure that all else would go well. Thus, the ECB was given the mandate of ensuring price stability, and the growth and stability pact required that countries joining the euro would have low deficits (under 3% of GDP) and low debt (under 60% of GDP). But as country after country went into crisis, it became clear that these conditions were neither necessary nor sufficient for convergence. Spain and Ireland both had surpluses and low debt-to-GDP ratios before the crisis, and yet, after Greece, they were the first to join the long list of countries facing difficulties. It was clear that it was private sector excesses that were at fault, not government excesses, and yet the Eurozone framework had no way either to detect or to respond to such excesses. Tougher agreements to make sure that fiscal imbalances do not appear in the future would not have prevented the last crisis and will not prevent the next one. But the austerity measures that are now being imposed will make a full recovery from this crisis more difficult.

Long-run convergence will require parallel increases in costs of production in the different countries, which can be achieved only through convergence of productivity and, given well-recognized downward rigidities in wages, faster wage increases in countries with higher increases in productivity. Convergence of productivity increases will require the laggard countries to embark on industrial policies – more than just creating a "conducive environment," again as assumed by the neoliberal models. But industrial policies were effectively discouraged under the EU framework. Convergence and growth could also be facilitated by more infrastructure investment, financed by the EU as a whole; but while there were generous funds for new entrants to the EU, funds for the lagging countries have not been sustained.

Instead of creating a framework that would facilitate convergence, they created one that exhibits dynamic instability: with each country responsible for its own banking system, and with confidence in a country's banking system inevitably depending on the country's ability and willingness to bail out troubled banks, money flees weak countries and its banks, making them even weaker. Private contraction amplifies the effects of public austerity. So too, the obligation of citizens to pay for

their parents misdeeds – but only if they remain in the country – induces skilled labor to leave, increasing the burden on those remaining.

While the crisis made the problems of the euro-structure clear, they were present long before. Indeed, the euro helped create the crisis: for the markets seemed to have vastly overestimated the extent to which the single market/single currency had reduced risk (another example of market irrationality), leading to excessive lending to the afflicted countries. And the structure of the Eurozone, based on neoliberal doctrines of efficient and stable markets, provided no way to curb the excesses thus generated.

B. The multiplier[42]

Those on the right not only believe that government action is not needed, but that it is likely to be ineffective.

There has been considerable discussion of the magnitude of the multiplier associated with government spending, with critics of expansionary government spending suggesting that it is low, zero, or even negative. They look at the experience of different countries over long time periods. Such analyzes should be an important warning of the foolishness of mindless regressions. Of course, when the economy is at or near full employment, the multiplier (correctly measured) will be low. Even then, measurement problems (GDP is not a good measure of economic output, providing only a biased estimate of economic performance when the share of government expenditure increases[43]) and econometric problems bedevil such analyses. But the question is, what will the multiplier be when there is a high level of unemployment and large underutilization of capacity? Since we have not had the levels of unemployment and capacity utilization that we are now experiencing since the Great Depression of the 1930s – and the structure of the economy was markedly different during the Great Depression than now – there is no way we can, with confidence, extrapolate the experiences of previous post–Depression downturns to the current situation.[44]

Economic theory, though, provides a compelling framework for analysis. The problem is lack of aggregate demand. Government spending increases aggregate demand. We can identify leakages (from savings and imports) and, on the basis of that, calculate the multiplier. Traditional analyses, based on downturns of short duration, focused on one-period multipliers: two years from now, the thinking went, the economy would presumably be back to full employment, and the multiplier would be zero. But this downturn is long-term, so in calculating the multiplier, we should calculate the impacts not just for this period, but for subsequent periods as well.

For the United States, this kind of analysis yields a multi-period multiplier (with reasonable values of savings and import coefficients) in the range of 1.5 to 2.

The next question is: are there reasons to believe that there are reactions from market participants that will amplify or reduce these effects, that is, are there "crowding in" or "crowding out" effects? Again, in normal periods, the Central Bank, worried about an overheated economy, raises interest rates and tightens credit, discouraging investment. The result is that government spending crowds out private investment. But now, the Fed is committed to keeping interest rates low and doing what it can to increase the availability of credit. This explains again both why estimates of the multiplier based on normal periods are irrelevant, and why, in this case, the multiplier will not be reduced by crowding out of investment.

There may, in fact, be crowding in of investment – if government spending, for example, goes to public investment, and public investment is complementary to private investment. Alexander Field,[45] for instance, makes a persuasive case for the theory that infrastructure investment during the Depression enhanced private sector productivity, and that this helped lay the foundations for strong growth after World War II. More recently, government investments in the Internet and the life sciences have clearly spawned entire industries.

The Barro-Ricardo hypothesis suggests that the increased indebtedness of government will lead to more savings (to offset future tax liabilities), and thus that government debt financed spending crowds out consumption. There is little evidence of such an effect in recent years; in fact, the Bush tax cuts gave rise to soaring deficits, which were followed by savings falling to near zero.[46] To believe in the Barro-Ricardo model, one would have to hypothesize that in the absence of the tax cut, savings would have been markedly negative.

The criticisms of the hypothesis are well known: it ignores capital constraints and distributive effects. Indeed, there may even be "crowding in" of consumption. First, if government spending is for high-return investment, in a period such as the current one where government can borrow at a negative real interest rate, the government's balance sheet will be improved; thus (in the world of rationality, in which taxpayers see through the public veil), savings would be reduced.[47] There would be crowding in of consumption, not crowding out.

Moreover, if, as we have already noted is the case now, the downturn is likely to extend for several periods, some of today's savings will be for future consumption; with rational expectations, individuals would then

know that incomes in future periods will be higher than they otherwise would have been, meaning that their lifetime budget constraint has moved out. This again leads to increased consumption today.[48]

Of course, a good multiplier analysis takes into account the fact that different kinds of expenditures have different multipliers. What matters is not what the average multiplier has been in the past, but the effect of a well-designed expansionary policy today. We have suggested that spending on investments in the US today on education or research has a far higher multiplier, say, than on contractors in Iraq.[49]

For some highly indebted countries, the additional borrowing to finance expansionary investment-oriented fiscal policy would come at a high price; they would have to pay increasingly higher interest rates, which might constrain what they could spend overall on output-expanding projects.[50] In principle, the market should realize this, in which case the greater indebtedness could lead to a lowering of interest rates. But there is no shortage of evidence of market irrationality; and whether justified or not, if increased indebtedness leads to higher interest rates, governments may have to employ another strategy, making use of the *balanced-budget multiplier*.

Traditional analyses suggested that the balanced-budget multiplier is unity. But well-designed increases in taxes and expenditures can have a balanced-budget multiplier that is much larger, plausibly twice the traditional number, for example, recognizing that the marginal propensity to consume at the top is low relative to that elsewhere, and tax hikes at the very top reduce consumption by far less than the increased expenditures expand it. Taking advantage of crowding in of consumption and investment can further enhance the balanced-budget multiplier.

Indeed, there are some taxes that might even stimulate demand. An increase in the estate tax would encourage the elderly to consume more today; the imposition of a carbon tax would encourage investment in buildings and equipment that reduced carbon emissions. So too might an increase in a tax on dividends.[51]

In short, there is every reason to believe that well-designed government policies could be very effective in stimulating the economy. Keynes was right about there being a multiplier – and advances since then have shown how that multiplier can actually be increased.

C. Debt and deleveraging

There are many in Europe and America who believe that our current troubles arise from excess debt, at both the household and national level. Those focusing on debt at the national level have warned that debt financed

spending will be counterproductive *in the long-run*. Much of this view has been based on the now-discredited work of Reinhardt and Rogoff, who contended that once debt exceeded 90%, the adverse effect on growth increased significantly. Interestingly, they never tested the hypothesis – they never checked the statistical significance of any observed differences in growth of countries with debt-to-GDP ratios below and above 90%.[52] A large literature has now called attention to other failings – the lack of attention to causality (it was the recession that caused slow growth, not the other way around); to the difference in circumstances. Does it make a difference whether the debt is borrowed in one's own currency or in another currency? Whether one is a reserve currency country? Was the debt generated by war or by gross incompetence? America left World War II with a debt of 130% of GDP, and yet in the ensuing decades the country experienced its fastest rate of growth (and the growth was shared growth). So too, Martin Wolf has commented that if debt held back growth, England would never have experienced the industrial revolution, for it emerged from its wars with France with massive debts.[53] The wide range of experiences shows at the minimum that debt is not destiny.

It is noteworthy that the debt pessimists have never come up with a coherent theory for why debt itself should lead to lower growth – except if countries listened to the debt pessimists and adopt austerity measures in response. Older literature for a closed economy emphasized that we simply owe it to ourselves – and in the standard representative agent model that would mean that there would be *no* effect. In the currently unfashionable life cycle models, debt can displace capital and lead to lower levels of per capita income, but it does not lead to a lower rate of growth (although in the transition period growth would be smaller). And in an open economy increased indebtedness to foreigners would lead to lower standards of living for the citizens (they are poorer), but not to lower rate of growth.

Private indebtedness can, however, have significant effects – although in the neoliberal framework, whatever the private market decides is by definition "right."[54] That ignores the pervasive market failures that we noted earlier, associated with imperfect and asymmetric information and imperfect risk markets.

Many have pinned their hopes for a quick recovery on deleveraging. There was excess private (mainly household) debt prior to the crisis – especially so once the housing bubble had broken. This indebtedness puts a damper on household spending. However, households are working down this debt. Once they do so, consumption will recover, or so it is believed.

High levels of indebtedness do have an adverse effect on consumption, both because of the real wealth effect and because of the effect it has in imposing borrowing constraints (which my own work on imperfect capital markets, arising out of asymmetric information, has emphasized). Still, it would be foolish to think that even after deleveraging, consumption will return to anything like it was before the crisis.

The use of representative agent models has obscured what was going on in the US before the crisis: the bottom 80% were consuming approximately 110% of their income. Even after they deleverage, even after the financial sector is fully restored, we shouldn't expect them to consume, on average, more than 100% of their income. With the top 20% garnering for themselves some 40% of national income, and with their savings rate being roughly 15%, one should expect a national savings rate of some 6% – somewhat higher than we see today but somewhat lower than the prevailing rate in the US in earlier decades. The continuing rise in inequality provides an additional argument for why we should not expect a return of the savings rate to pre-crisis levels.

The puzzle is why hasn't the US savings rate increased even more (from slightly more than zero to around 4.5% today). The answer may have to do with slow adjustments in consumption patterns, which are aspects perhaps not adequately incorporated into the traditional models.

If, of course, we do get recovery of the economy through consumption, we should be worried: it would mean a return to unsustainable patterns of the kind that marked the pre-crisis days.

Interestingly, the representative agent model without financial constraints would suggest that leverage doesn't matter at all. Debt simply reflects an ownership claim on a stream of returns – a transfer of money from debtors to creditors; but such transfers have no effects in this model.[55]

D. The liquidity trap and the zero lower bound

Before the crisis, many economists argued that monetary policy was, and should be, the main vehicle for regulating macroeconomic activity, which the government carried out by manipulating interest rates. It was the most effective and least distortionary instrument of government policies.

I have never found convincing evidence for many aspects of these doctrines, and I have always found the theoretical arguments unconvincing. Indeed, the relationship between real interest rates and investment (especially outside of real estate) is hard to establish. In most models, if nominal and real interest rates are both put in the right-hand

side of a regression, nominal interest rates appear to have more importance. Moreover, the notion that monetary policy is non-distortionary – or at least less distortionary than fiscal policy – is a fiction that arises from the simplistic aggregative models commonly employed. Reliance on monetary policy forces adjustments to macroeconomic disturbances to be borne by interest and credit sensitive sectors. There is no general theory suggesting that making these sectors bear the cost (almost surely shrinking these sectors relative to what they otherwise would be) is optimal in any sense.

In this crisis, the Fed (along with other central banks) has lowered interest rates to near zero – real interest rates have become negative – without producing much of a stimulative effect – indeed, far less than was desired or hoped. I was not surprised, knowing that in the flawed modeling of investment in the standard model credit availability and its determinants, risk, and risk aversion are given short shrift. And as we noted above, even if the T-bill rate is low, what matters is the lending rate, and the spread between the two is an endogenous variable. The lending rate may not fall in tandem with the decrease in the T-bill rate.

As Keynes' view of the inefficacy of monetary policy has seemed to triumph, those who believe in the standard model have suggested that its fundamental problem is the "zero lower bound" on interest rates, a variant of the Keynesian liquidity trap. But the situation during the Great Depression was completely different from today's. Then, prices were falling at 10% a year, so the real interest rate – as interest rates approached zero – was 10%.[56] Today, the real interest rate is -2%. There is no reason to believe that if (expectations of) the inflation rate were to rise to 4% or even 6%, and the real interest rate fell to -4% or -6%, there would be a surge in investment. After all, there is excess capacity in many sectors, especially in real estate. Getting funds at a lower rate is no reason to boost one's excess capacity. (To be sure, there is a fast enough rate of inflation to make the real interest rate negative enough to *perhaps* stimulate investment. But the uncertainty brought about by this change in economic policy would itself have adverse effects on investment.[57])

Again, the use of overly simplistic models has obscured some potentially important adverse effects of lower interest rates, including lower long-term interest rates achieved through quantitative easing. This would have the potential to partially or totally offset the alleged benefits assumed to arise, particularly if the interest elasticity of investment is small. There are, for instance, complex distributive effects. Traditionally, over the long-run, creditors have been considered better off than debtors;

that being the case, the redistributive effects seen in this scenario would be expected to enhance aggregate demand. However, if debtors have long-term fixed-interest contracts, and if there are groups like the elderly who are dependent on the income from government T-bills and bonds, the effects may well turn out to be negative. This is especially so because the marginal propensity of the elderly to consume may be higher than that of mortgagees and/or if QE results in a much greater decline in T-bill rates than in mortgage rates.[58] If quantitative easing leads to commodity booms (a question that remains in contention), then there is a distributive effect from households to commodity producers, which almost surely has a downward impact on aggregate demand.

In a world of full rationality, as assumed in the traditional models, there is a further negative effect: the long-term bonds that the Fed is buying now will be sold back at a capital loss. The government is (in effect) buying long-term bonds at a peak price. Therefore, under the Barro-Ricardo hypothesis, households should rationally include the expected capital loss in their budget constraints and, thus, reduce consumption. (This is the case whether or not accounting rules require the government to recognize the loss, or whether or not the Fed goes through machinations to avoid selling them at a loss by holding them to maturity.)[59]

The traditional mechanism by which lower (long-term) interest rates might benefit the economy is an increased flow of credit at better terms – but that does not seem to be playing a major role today, perhaps for five reasons: (a) The firms that are most constrained by borrowing, small and medium-sized enterprises (SME), remain constrained, because the supply of funds is constrained – while the big banks were given huge amounts of money, and repaired their balance sheet through monopoly profits and speculative activities, the smaller regional and community banks upon whom the SMEs depend remain weak; (b) Large multinationals are awash with trillions in cash, small changes in interest rates are not likely to induce them to invest when they were reluctant to do so before, and when they do invest, it is likely not in the US; (c) The consolidation of banks as part of the flawed attempt to preserve the banking system has led to non-competitive markets, for example, in mortgages, so that rather than just passing on lower interest rates to customers (as would happen in a competitive market), lenders have enjoyed larger spreads; (d) In a world of globalization, money goes to where the returns are highest – and right now, that seems elsewhere than the US and Europe – money is going where it's not needed and not going where it is needed; And (e) in a world of globalization, what one central bank does can (and

often will) be undone by other central banks: one adds liquidity to the global financial system, while others take it out.[60]

The Fed has stressed the benefits from high stock market prices. This effect, of course, is only relevant for those who own stocks. But even then, the size of the effect is questionable. The Fed has announced that its interventions are temporary. If so, why should the effects be long lasting – why should they affect long-run budget constraints? (To be sure, some may gain from selling bonds when they are high, but others will lose from selling bonds at a loss. But in a representative agent model, these should largely cancel out.) The effects can be longer lasting, if somehow, the higher stock price shifts expectations in a way that moves the economy into another equilibrium – but again we have moved outside the standard representative agent model.

Finally, in the standard putty-clay model, firms, able to get access to long-term capital at a very low interest rate, will invest in highly capital-intensive technologies, because wages have not fallen as much as the cost of capital. But this means that, at any given level of demand for output, employment will actually be reduced. Thus, loose monetary policy today *may* be setting up the conditions for a jobless recovery in the future. Even today, the outlines of such a situation are already visible. The knowledge that weaker demand for labor lies ahead affects consumption demand directly and indirectly, as it puts further downward pressure on wages, worsening the distribution of income.

The importance of this is *not* that we should have tight monetary policy. It is that we cannot rely on monetary policy for our recovery, and that other government policies have to be put in place to offset the potential and real adverse effects that we have described.

To return to Europe: While American monetary and regulatory policy before the crisis was flawed, both in theory and in its execution, *at least* the mandate of the Fed went beyond just limiting inflation – in the mistaken notion, referred to earlier, that controlling inflation was necessary and almost sufficient for strong growth. Today, the Fed's mandate includes employment, output, and financial stability, and some Fed governors have advocated "employment targeting," at least until the economy returns to a more normal level of unemployment.

It was, as Fitoussi has repeatedly reminded us, a mistake to have the ECB focus exclusively on inflation, and it was even more of a mistake to put such a mandate in a treaty, making a change in the mandate – a change which should have been effected by changed perceptions of macroeconomics – so difficult. But it is even more problematic in a world of global financial markets, where the Fed, focusing on unemployment, has kept

interest rates near zero, while the ECB has not responded in kind. The result is a stronger exchange rate and a weaker European economy. Lack of global monetary coordination has a price, but in this case, it is Europe that is bearing the brunt of the costs.

Almost surely, even with its mandate, the ECB could have taken a more aggressive stance. And this is where *institutions* and their design matter, something that Fitoussi has repeatedly emphasized.[61] The notion of an independent central bank was sold partially on the idea that managing monetary policy was a technocratic matter, to be left to skilled technicians. Seemingly, there is a Pareto efficient monetary policy. But such a view is wrong and dangerously so. It is wrong on several accounts.

Institutions do not exist in a vacuum: an independent central bank is effectively captured by financial markets, and it is their interests and perspectives that the bank reflects. That the technocrats are not really in possession of the expertise that they would like the rest of us to assume they have is reflected in the fads and fashions that prevail, each believed with fervor, until they are thoroughly discredited. Monetarism, motivated in part by Friedman's belief that the less discretion given to the government the better, captured the imagination of Central Bankers in the 1980s – just at the time that evidence was mounting that the assumption that the velocity of circulation was constant was wrong; and just as economic theory explained why it was credit, not money, that was needed for transactions. It should also be evident that the doctrines that prevailed in the years before the crisis, most notably inflation targeting, did not serve our economies well.

All economic policies have distributive effects. There are risks associated with all economic policies, and different individuals bear these risks differently. So the notion that there is a Pareto dominant monetary policy is a chimera.

Concluding comments

This is perhaps a good point to close: As Keynes rightly pointed out, policy is shaped by theories. In Keynes's day, it may have been theories promulgated decades earlier. In today's world, it seems that lags have been reduced, with policy subjected to the ebb and flow of the fads and fashions in the economic profession. The fads and fashions that dominated in the decades preceding the current crisis have not served us well – the models/theories that guided policy were not just innocent bystanders in the crisis that unfolded beginning in 2008. They were critical in the creation of the crisis and in the inadequate responses to it. Moreover, as

I argue in my book *The Price of Inequality*, these theories were also not innocent bystanders to the growth in inequality that has marked recent decades; the policies based on these theories were an important factor in the marked increase in inequality over the past 30 years.

For decades, Fitoussi has been one of the few voices holding out against these intellectual trends. He insisted that models be based on common sense, that the common sense be informed by historical experience as well as empirical evidence. In the end, the theories he has pushed and the policies that are derived from them provide a far better understanding of our macroeconomy than the currently fashionable ones. But they also provide the basis of policies that are more consistent with underlying values of social justice, and democratic accountability and process.[62]

Notes

1. This essay owes an enormous intellectual debt to Jean-Paul Fitoussi. I should also acknowledge helpful discussions with Rob Johnson and my long-term collaborator, Bruce Greenwald. Financial support from INET is gratefully acknowledged. Research and editorial assistance were provided by Eamon Kircher-Allen and Sandesh Dhungana.University Professor, Columbia University.J. Fitoussi, A. Sen, and J. E. Stiglitz: *Mismeasuring Our Lives: Why GDP Doesn't Add Up*, New York: The New Press, 2010.
2. *The G20 and Recovery and Beyond: An Agenda for Global Governance for the Twenty-First Century*, J.P. Fitoussi and J. E. Stiglitz (eds), e-book with contributions from The Paris Group, 2011.
3. Available as *The Stiglitz Report: Reforming the International Monetary and Financial Systems in the Wake of the Global Crisis*, New York: The New Press, 2010. Some of the topics that I touch upon below are related to this and the previous two reports.
4. This paper draws heavily upon two previous lectures I have given on related subjects, the Adam Smith Lecture to the European Economic Association, “Rethinking Macroeconomics: What Failed and How to Repair It,” *Journal of the European Economic Association*, 9(4): pp. 591–645; and a lecture to the Turkish Economic Association annual meeting, November 2013, “Stable Growth in an Era of Crises: Learning from Economic Theory and History,” forthcoming in *Economi-tek*, the journal of the Turkish Economic Association, as well as my book *Freefall: America, Free Markets, and the Sinking of the World Economy*, New York: WW Norton, 2010.
5. Figure is current as of the time this paper went to press in May 2014. But for most of the four years since the Great Recession ended, this figure was 1 in 6, or worse.
6. Robert H. Wade: “What economists should have learned from the Western Financial Crash and Long Slump: inequality, financial globalization, and macroeconomics,” lecture presented at seminar on Globalization, Development and Inequality, Bangalore, January 8, 2013, in conjunction with 6th Annual Advanced Graduate Workshop on Poverty, Globalization and Development, Azim Premji University, Bangalore.

7. Quoted in Stewart Lansley: *The Cost of Inequality*, London: Gibson Square, 2012, p. 224.
8. J. P. Cotis: "Editorial: achieving further rebalancing", *OECD Economic Outlook*, 1: pp. 7–10 (at p. 7), 2007.
9. See e.g., "Chairman Ben S. Bernanke: The Economic Outlook: Before the Joint Economic Committee, U.S. Congress," March 27, 2007, available at http://www.federalreserve.gov/newsevents/testimony/ber nanke20070328a.htm (accessed June 10, 2013).
10. See, for example, Craig Torres and Alison Fitzgerald: "Greenspan Says Housing Market 'Speculation' Is Unsustainable," Bloomberg.com, May 20, 2005, available at http://www.bloomberg.com/apps/news?pid=newsarchive&sid=azb8f wbe5Fqw (accessed June 10, 2013).
11. See Jean-Paul Fitoussi: 2013, *Le théorème du lampadaire*, Paris: Les liens qui Libèrent.
12. Ben Bernanke: "On the implications of the financial crisis for economics," Conference co-sponsored by the Center for Economic Policy Studies and the Bendheim Center for Finance, Princeton University, Princeton, NJ: US Federal Reserve, September 24, 2010, available at http://www.federalreserve.gov/newsevents/speech/bernanke20100924a.htm (accessed June 10, 2013).
13. Ibid.
14. This is a very conservative number based on a comparison of GDP in each year since the crisis and a straightforward extrapolation of where the economy would be had there not been a crisis. The disparity for the US in 2014 is in excess of 15%, and for Europe is even larger.
15. See his April 2006 lecture at Trinity University in San Antonio, Texas, available at http://www.trinity.edu/nobel/Prescott/Prescott_Webquotes.htm (accessed June 12, 2013).
16. This discussion can be thought of as taking off where Fitoussi left off in his wonderful description of the evolution of macroeconomic theory, in his introduction to *Modern Macroeconomic Theory,* Basil Blackwell, 1983.
17. B. Greeenwald and J. E. Stiglitz: "Keynesian, New Keynesian, and New Classical Economics," *Oxford Economic Papers*, 39: pp. 119–133, March 1987.
18. See J. E. Stiglitz: "Information and Capital Markets," in William F. Sharpe and Cathryn Cootner (eds), *Financial Economics: Essays in Honor of Paul Cootner*, Prentice Hall, New Jersey, 1982, pp. 118–158; and the introduction to its reprinting in *Selected Works of Joseph E. Stiglitz,Volume II*, Oxford: Oxford University Press, 2013, pp. 55–84.
19. Of course, with homogeneous labor/perfect information/no search costs, the efficiency wage theories are no longer relevant. In the representative agent models, the only reason that labor is not fully employed is some form of wage rigidity. But this is an artificial consequence of these artificial assumptions.
20. William Easterly, Roumeen Islam, and J. E. Stiglitz: "Shaken and Stirred: Explaining Growth Volatility," *Annual Bank Conference on Development Economics 2000*, Washington: World Bank, 2001, pp. 191–212; and "Shaken and Stirred: Volatility and Macroeconomic Paradigms for Rich and Poor Countries," in *Advances in Macroeconomic Theory*, Jacques Dreze (ed.), IEA Conference Volume, 133, Houndsmill: Palgrave Macmillan, 2001, pp. 353–372.

21. Bruce Greenwald and J. E. Stiglitz: “Externalities in Economies with Imperfect Information and Incomplete Markets,” *Quarterly Journal of Economics*, 101(2): pp. 229–264, May 1986.
22. There is a growing literature focusing on exploring the macroeconomic implications of the externalities that Greenwald and I identified, e.g., not just for self-selection and incentive compatibility constraints, but also for borrowing constraints. See, for example, Jeanne, Olivier and Anton Korinek: “Excessive Volatility in Capital Flows: A Pigouvian Taxation Approach,” *American Economic Review*, 100(2): pp. 403–407, 2010; and “Managing Credit Booms and Busts: A Pigouvian Taxation Approach,” NBER Working Paper Number 16377, 2012, available at http://www.nber.org/papers/w16377.pdf (accessed June 10, 2013).
23. See, for example, J. E. Stiglitz: “Alternative Theories of Wage Determination and Unemployment in L.D.C.’s: The Labor Turnover Model,” *Quarterly Journal of Economics*, 88(2): pp. 194–227, May 1974; and Carl Shapiro and J. E. Stiglitz: “Equilibrium Unemployment as a Worker Discipline Device,” *American Economic Review*, 74(3): pp. 433–444, June 1984.
24. They also provided, I believe, a better explanation of nominal rigidities than the fashionable menu cost theory. See B. Greenwald and J. E. Stiglitz: “Toward a Theory of Rigidities,” *American Economic Review,* 79(2): pp. 364–369, May 1989.
25. I. Fisher: “The Debt Deflation Theory of Great Depressions,” *Econometrica*, 1(4): pp. 337–357, 1933.
26. Even if wages and prices fall, it does not mean that real wages change. That depends on differences in the rates of changes in wages and prices. There can be real wage rigidities even in the presence of flexibility of nominal wages and prices. See R. Solow and J. E. Stiglitz: “Output, Employment and Wages in the Short Run,” *Quarterly Journal of Economics*, 82: pp. 537–560, November 1968.
27. See Charles Kindleberger: *Manias, Panics, and Crashes: A History of Financial Crises*, New York: Basic Books, 1978.
28. Greenwald and Stiglitz show how price flexibility can lead to large balance sheet effects, leading firms curtail production, employment, and investment, amplifying the effect of any shock. (This is sometimes referred to as the financial accelerator.) (Because it takes time for balance sheets to be restored, the effects of the shock are likely to be persistent.) The effects can be further amplified as a result of impacts on bank balance sheets, leading them to contract lending. See B. Greenwald and J. E. Stiglitz: “Financial Market Imperfections and Business Cycles,” *Quarterly Journal of Economics,* 108(1): pp. 77–114, February 1993; and B. Greenwald and J. E. Stiglitz: *Towards a New Paradigm in Monetary Economics,* Cambridge: Cambridge University Press, 2003.
29. Or if there were multiple steady states, such that with a small change in state variables, the economy entered into a differ orbit of attraction.
30. I do not, however, believe that one can explain the crisis of 2008 – the sudden change in the aggregate output and employment, with little change in the state variables – by such models. It was not that the economy suddenly shifted from one equilibrium to another. What happened is better described by a model of disequilibrium: the economy was experiencing a bubble, but

of course didn't realize it. Bubbles always break, and it was the unwinding of the bubble – and the gradual realization that there had been a bubble – that was at the root of the marked change in macroeconomic aggregates.

31. J. Stiglitz and Martin M. Guzman: "Pseudo-wealth and Consumption Fluctuations," *Columbia University Working Paper*, presented at the World Congress of the IEA, June, 2014.
32. J. Scheinkman and W. Xiong: "Overconfidence, Short-Sale Constraints and Bubbles," *Princeton Economic Theory Working Papers* 98734966f1c1a57373801367f, 2003.
33. See Jean-Paul Fitoussi: "Wage Distribution and Unemployment," *American Economic Review, Papers and Proceedings*, 84(2): pp. 59–64, May 1994; and Jean-Paul Fitoussi and Francesco Saraceno: "Inequality, the Crisis and After," *Rivista di Politica Economica*, Série III, fascicule I-III: pp. 9–27, January–March 2011.
34. See, for example, K. E. Dynan, J. Skinner, and S. P. Zeldes: "Do the Rich Save More?" *Journal of Political Economy*, 112(2): pp. 397–444, 2004.
35. See K. Dynan: "Is a Household Debt Overhang Holding Back Consumption?" *Brookings Papers on Economic Activity*, pp. 299–362, Spring 2012, available at http://www.brookings.edu/~/media/Projects/BPEA/Spring%202012/2012a_Dynan.pdf (accessed June 10, 2013); and A. Mian, K. Rao, and A. Sufi: "Household Balance Sheets, Consumption, and the Economic Slump," June 2013 working paper, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1961211 (accessed June 12, 2013).
36. See discussion in Dynan, Skinner, and Zeldes, op. cit.; Stephen P, Zeldes discusses such constraints in more detail in "Consumption and Liquidity Constraints: An Empirical Investigation," *Journal of Political Economy*, 97(2): pp. 305–346. 1989.
37. Robert Lucas: "The Industrial Revolution: past and present", 2003 Annual Report Essay, The Federal Reserve Bank of Minneapolis, May 1. Accessed from http://www.minneapolisfed.org/publications_papers/pub_display.cfm?id=3333 (accessed June 18, 2014).
38. For an excellent discussion of these issues, see Dean Baker: "The Myth of Expansionary Fiscal Austerity," CEPR, Washington, DC; IMF, 2010, *Economic Outlook,* chapter 3; and Arjun Jayadev and M. Konczal: "The Boom not the Slump: The Right Time for Austerity," The Roosevelt Institute, August 23, 2010.
39. Alberto Alesina and Silvia Ardagna: "Large Changes in Fiscal Policy: Taxes versus Spending," *in Tax Policy and the Economy*, Jeffrey R. Brown (ed.), vol. 24, Chicago: University of Chicago Press, pp. 35–68, 2010.
40. See, for example, International Monetary Fund: "Will It Hurt? Macroeconomic Effects of Fiscal Consolidation," in *World Economic Outlook: Recovery, Risk, and Rebalancing,* Washington, D.C.: IMF, pp. 93–124, 2010.
41. Though not designed to be beggar-thy-neighbor policies, they have effects that are much akin to such policies. See also J. P. Fitoussi: *Le théorème du lampadaire*, op. cit.
42. For a discussion of some of the issues raised here, see Robert M. Solow: "Fiscal Policy," in Olivier Blanchard, David Romer, Michael Spence, and Joseph Stiglitz (eds), *In The Wake of the Crisis*: *Leading Economists Reassess Economic Policy*, Cambridge, MA, The MIT Press, 2012, pp. 73–76.
43. See Stiglitz, Sen, and Fitoussi, op. cit.

44. Recent econometric studies do show significant multipliers, for example, around 1.5. See Emi Nakamura and Jon Steinsson: "Fiscal Stimulus in a Monetary Union: Evidence from US Regions," *American Economic Review*, American Economic Association, 104(3): pp. 753–792, March, 2014.
45. Alexander, Field: *A Great Leap Forward: 1930s Depression and U.S. Economic Growth*, New Haven: Yale University Press, 2011.
46. The St. Louis Fed tracks personal savings rate on its website at http://research.stlouisfed.org/fred2/data/PSAVERT.txt (accessed October 31, 2012); the historically low personal savings rates during the Bush years are clear here.
47. Government expenditures do not even have to be investments: if government consumption expenditures and private consumption expenditures are complements, then there will be crowding in of consumption. Moreover, there is another channel through which crowding in of investment, to which we already alluded, takes place when government investment and private investment are complements.
48. P. Neary and J. E. Stiglitz: "Toward a Reconstruction of Keynesian Economics: Expectations and Constrained Equilibria," *Quarterly Journal of Economics*, 98, Supplement: pp. 199–228, 1983.
49. J. E. Stiglitz, *Freefall,* op. cit. and Linda Bilmes and J. E. Stiglitz: *The Three Trillion Dollar War: The True Costs of the Iraq Conflict,* WW Norton, 2008.
50. Reinhart and Rogoff suggested, furthermore, that increased indebtedness beyond a 90% debt-to-GDP ratio would lead to significantly lower growth. (Reinhart, M. Carmen, and Kenneth S. Rogoff: "Growth in a Time of Debt," *American Economic Review* 100(2): pp. 573–578.) Putting aside the fact that their analyses ignored the central point we have emphasized – the forms of expenditure and the circumstances of the economy make a big difference – their work has since been extensively criticized. See, for example, Thomas Herndon, Michael Ash, and Robert Pollin: "Does High Public Debt Consistently Stifle Economic Growth? A Critique of Reinhart and Rogoff," *Cambridge Journal of Economics* 38(2): pp. 257–279, 2014.
51. Anton Korinek and J. E. Stiglitz: "Dividend Taxation and Intertemporal Tax Arbitrage," *Journal of Public Economics*, 93(2009): pp. 142–159.
52. See footnote 57.
53. Martin Wolf: "Austerity loses an article of faith", *Financial Times*, April 23, 2013, Accessed at http://www.ft.com/cms/s/0/60b7a4ec-ab58–11e2–8c63–00144feabdc0.html#axzz353a9n6Mv, on June 18, 2014.
54. Moreover, the standard competitive models do not provide an explanation for why a high level of indebtedness should lead to a high level of persistent unemployment. Even if it led to a lower level of aggregate consumption at a given set of wages and prices (including interest rates), there is some set of wages and prices at which full employment could be attained. Our analysis above pointed out, however, that the natural adjustments mechanisms may actually lead to increased unemployment.
55. Of course, in an open economy model, if individuals in a country become indebted to those abroad, it lowers their wealth, and thus their standard of living. This just affects who gets the benefits of the country's output, not the level of output or its rate of growth.
56. What should matter (in the standard theory), of course, for investment is the real product interest rate, not the real consumption interest rate, and

when there are large changes in relative prices, as occurred during the Great Depression, these can differ markedly.

57. Some (Woodford, 2003, 2009) have suggested that what is required is a credible commitment to inflation (e.g., through price-level targeting, which implies when there is less than normal inflation now, perhaps due to deflationary pressures arising from excess capacity, there will be higher than normal inflation in the future). But even if the expected real interest rate were the critical determinant of investment (which we suggest it is not), there is no way that the monetary authority could commit itself to such a policy. See M. Woodford, "Optimal interest-rate smoothing", *The Review of Economic Studies*, 2003, 70(4): 861–886. and M. Woodford, Convergence in Macroeconomics: Elements of the New Synthesis. *American Economic Journal: Macroeconomics*, 2009, 1(1): 267–279.
58. With the increased spread going to the financial sector, with little positive effect on aggregate demand.
59. I believe that it is reasonable for the Fed to ignore this effect; but this simply illustrates the inconsistencies in the use by the Fed and other central banks of some of the standard models based on full rationality. In practice, they seem to use the model when it produces results they like, and not otherwise. Thus, for instance, a pre-announced policy of a temporary interest rate cut should have little effect on asset prices or demand, since long-run prices and lifetime budgets should be relatively unaffected. See the discussion below.
60. For a formal model of this process, see J. E. Stiglitz: "Monetary Policy in a Multipolar World," forthcoming in the proceedings of the International Economics Association's 2012 Izmir roundtable.
61. See, for instance, his 2006 "Macroeconomics and Institutions," Angelo Costa Lecture, *Rivista di Political Economica,* 95(6): pp. 9–30.
62. See, in particular, Jean-Paul Fitoussi: "Following the Collapse of Communism, Is There Still a Middle Way?" in Colin Crouch and Wolfang Streeck (eds), *Political Economy of Modern Capitalism*, London: Sage Publications, October 1997, pp. 148–160.

Response by Jean-Paul Fitoussi

Joseph Stiglitz has spoken very kindly of me and my work, for which I thank him very much. It is less than usual for an economist of his caliber to praise the work of other economists. I see for that at least two explanations. The first, and most obvious, is that he pertains to a rare species of economists, one who thinks that he may learn from others, even those who are not among the giants. The second is that we have worked together a lot, and most, if not all, of the time, we have agreed about ideas.

About theories

As he mentions in his paper, we agreed that the macroeconomic models that predominated before the crisis were inadequate. Indeed, we shared this view long before the crisis. What, with Ned Phelps, I called the slump in Europe was a phenomenon that characterized the 1980s and most of the 1990s, despite the fact that Europe worked very hard to apply the dominant model.[1]

What I did not realize at that time is that the same could have been said for the US – at least for the bottom 80 or 90% of the population! They too were in a slump. The rate of growth of income for the majority of the population could even have been higher in Europe than in the US during this time span. As forcefully demonstrated in his book, *The Price of Inequality*, the median household did not enjoy the average rate of growth that characterized the US economy. This phenomenon was hidden because we, or more accurately, governments have considered the growth of GDP as a measure of everything, and that we had no statistic to tell us what was happening to most of the population. Our models were bad at explaining both phenomena: persistent mass

unemployment in Europe, continuous increase in the number of the working poor in the US.

One of the main explanations of the failure of our models to give a convincing account of these phenomena is that from the outset we visited Keynesian theory with a Walrasian guide.

In effect, the existence of under-employment equilibria represented a major challenge to what Keynes called the classical theory. Either Keynes took as a starting point a model different from that then prevailing, or he was simply discovering states of that model that had not yet been studied.

It is clearly the second interpretation that was immediately favored, since it made it possible to express two doctrinally opposed positions in the terms of a common language.[2] Here, the Keynesian message appeared as specific to a situation, as dependent on restrictions imposed upon a more general framework: price rigidity, money illusion, liquidity trap, the non-intersection of functions on a positive plane,[3] and so on – in short, a whole series of factors implying either the introduction of arbitrary (free) parameters[4] or an *ad hoc* specification of the functions of the model. The Keynesian system was then perceived as a malfunctioning Walrasian system – and the study of some pathological states of a Walrasian model is called Keynesian economics.

Our dominant models inherited from this vein were wrong in structure and wrong in their predictions. Both the financial crisis and the sovereign debt crisis in the euro area were not predicted and were even worsened by the mechanical applications of the policy prescriptions of the new classical model.[5] Some economists, and even politicians, began to believe in a fairy tale: the expansionary effects of fiscal austerity, even for an economy as big as Europe's. That the result was a social disaster did not even shake their conviction! The belief in unfettered markets is a…belief, not the outcome of a theory fleshed out by realistic assumptions. And it serves well those who would like the size of the state to be minimal.

We also agree that the attempt to reconcile macroeconomic and microeconomic theories was a failure because it proceeded from an *a priori*, almost an axiom, that I have termed "the existence of a metalanguage:"[6] macroeconomic relations *must* have microeconomic foundations. This proposition establishes from the outset the subordination of the macro to the micro approach, and, at the same time, it ranks economic arguments in implicitly acknowledging that microeconomics is itself well founded. Otherwise this axiom would be meaningless. Perhaps we should have also tried to look for macro foundations of microeconomic theories, at a time when microeconomics was already under attack (imperfect and

asymmetric information, game theory, and behavioral economics).[7] That would have put at the forefront institutions and social conventions[8] as determining microeconomic decisions. Otherwise this axiom, taken seriously, runs the risk of reducing macro to micro and making the profession lose any relevancy in political economy.

However, even the attempt to search for microeconomic foundations failed as it disregarded the aggregation problem, a fairly difficult problem indeed. Instead, the two dominant models – the two churches, you might call them – used the fiction of the representative agent. In such a framework, there is no need for aggregation and no place for financial markets or even for banks. The policy prescriptions emerging from these two churches seem in our complex world to be absurd: the first sends a telegram to governments saying, "don't do anything, all is for the best in the best of all possible worlds." The second says, "it's the rigidities, stupid," especially labor market rigidities. The only remedy would be, as the European Commission is repeatedly emphasizing, structural reform. Here, this otherwise fuzzy concept is easy to understand. It designs reforms that are market friendly, which will help them to perform better:[9] flexibility of labor, a leaner welfare state, a less generous unemployment benefits system, and so on. Free the labor market from most institutional (juridical) obstacles to their functioning, and you will resolve the unemployment problem.

Revisiting our models in light of the crisis

All that would be of no import if we were not living, for already more than half a decade, through the worst social crisis since the 1930s. Keynes was calling for a non-Euclidian geometry; Joseph Stiglitz is calling for a Copernican revolution. I would call for both: a non-Euclidian geometry, to at least take into account the not infrequent instances where parallels do cross, and a Copernican revolution, to integrate in our models the financial sector in a meaningful way, theorizing the behavior of actors so as to understand why their functioning leads to an outcome far from that of the efficient markets hypothesis.

The growth path before the financial crisis was clearly unsustainable, as many were living on capital rather than income. The fantasy in the determination of asset prices in the financial market was at the core of the problem. The metric we were using for evaluating wealth was simply wrong. In retrospect, it seems to me bizarre that Joe and I had such a hard time to convince some members of the Commission on economic performance and social progress on this and other related points. When

an important fraction of the population is spending 110% of its income, it does not need more than a modicum of arithmetic sensitivity to understand that things will end badly.

But from here, in his paper, Joe tries to get us further. Changes in which he calls perceived or pseudo-wealth may lead to quick and large changes in levels of consumption and investment, not to say lending. This may occur even if prices are actuarially accurate and in a rational expectation setting. This is an obvious consequence of the fact that a complete set of future markets can't possibly exist in our economies. Joe's idea is that people engage in a bet because their sets of information differ. After the bet that "pseudo-wealth" will be destroyed, as there will be a loser, a crisis may lead to the rapid creation of negative pseudo-wealth.

Here the problem is not wage rigidity or false prices, as Hicks would say, but the difficulty in valuing assets. However, policy reaction of the structural reform type would worsen the situation, as it could lead to a decrease in true wealth. Suppose that the destruction of pseudo-wealth led to a lower level of consumption and investment and thus to a higher level of unemployment. Wage flexibility and decrease in social protection would lower the certainty equivalent of the wealth of the workers. Austerity policies would further affect negatively the balance sheet of the economy. I labored this point in my last book,[10] but I was not aware of Joe's model. His theory truly provides a missing element in our macro models, which may help to better integrate the financial sector. Shocks, then, are endogenous to the structure of the economy and may lead to general instability.

Distribution

That distribution matters has always been obvious to me, although I may understand why it is unimportant in a representative agent model. In a book I wrote in 1995,[11] I tried to investigate the consequence of the persistent discrepancy between the rate of interest and the rate of growth that had characterized Europe during the previous years. A first consequence was that income from wealth increased much faster than income from labor, with the obvious consequence that the share of wages in national income was decreasing.[12] A second consequence was that in an institutional framework where the social security system is mostly financed by payroll taxes – taxes on income from labor – the system would run into deficit. Any attempt to reduce this deficit by decreasing social security expenditures could worsen the situation, as it would negatively affect the bargaining power of wage earners.

In effect, distribution is the outcome of a process where the balance of power matters, where social relations matter for the provision of good jobs among the population, where the past often determines the present. The marginal productivity theory of distribution – assuming that it is possible to measure individual productivities – becomes then a fiction. Team productivity is less of a fiction, but the trickle down hypothesis is a chimera, as the explosion of inequality demonstrates. The only trickle down that seems to happen is that of risk: risks are taken by the richest and borne by the poorest and other categories of the population.[13]

It is why democracy should mitigate the supposedly healthy functioning of free markets. Some would pretend that democracy, because it increases the pressure toward redistribution, is bad for growth.[14] They surely believe that primary distribution is derived from rent and is optimal. And they surely prefer to live in a violent society, or a country run by a dictator, than to pay taxes.

The policy framework

About the policy frameworks that Joe develops, I have little to add. My work is a testimony of how much I agree with him.[15] The notion of contractionary expansion is not only a strange idea but an entirely ideological one, as it is theoretically faulty. It confuses the efficacy of austerity policy in general with that of export-led policies in small open economies. If it were true, heads of governments would announce each and every austerity program with a smile on their face.

Even in Europe, where the sole policy horizon is austerity, that is not the case. Governments know the extent of the sacrifice they impose on the population, and even those which would have liked to change the course of the policy find themselves constrained by European rules. It is because the crisis in Europe has more to do with a failure in institution building – a political problem – than with a purely economic problem. Europe has a strange federal government: a minister of stability (the Central Bank), a minister of competition (a Commissioner), and a minister of budgetary surveillance (another Commissioner). Each minister is obeying a treaty, that is acting according to rules. In the eyes of a market believer that would be more than enough. But in a monetary union characterized by capital mobility, much more is needed to achieve stability and to pursue the goal of full employment: the central bank should be accountable and its mandate should not be limited to price stability; a banking union should exist; the Commissioner in

charge of competition should allow national as well as European industrial policies; and the Commissioner of budgetary surveillance should be replaced by a fiscal authority having the legitimacy to embark on countercyclical fiscal policies. Truly, Europe cannot function if it remains a collection of federated states that are the orphans of a federal government.

The paraphernalia of the modern economist also includes propositions about the public debt, which look like common sense but literally have no sense. First of all, how can we confuse the wealth of a nation with its gross public debt? We do not do that for individuals, how it is that we do it for countries? Second, how it is that we focus now on public debt, as it is crystal clear that the problem that led to the crisis was excessive private debt?

A last remark on monetary policy. Here, too, Joe is right in underlining the quasi-fiscal effects of monetary policy that reinforce the need for its accountability. But the point I want to make is slightly different: it is only when the model we use is linear that we can specialize instruments and be content when the number of instruments equal the one of objectives. In a more representative model of the world in which we are living, all instruments should concur to each objective.

Here, the point I want to make applies obviously to Europe: there is no such a thing as a good economic policy emerging from the action of a collection of independent agencies,[16] each of them using its own instrument to achieve a single objective. In other words, a federal government is badly needed if we want the well-being of the Europeans to be properly taken into consideration. It is a necessary condition, of course, not a sufficient one.

Notes

1. J. P. Fitoussi and E. S. Phelps: *The Slump in Europe, Reconstructing Open Economy Theory,* Basil Blackwell, 1988.
2. J. Hicks: "Mr Keynes and the Classics: a suggested interpretation," *Econometrica, vol 5*, 2: 147–159, April 1937.
3. The two last "restrictions" rightly or wrongly seem to have lost nothing of their modernity! Are there just restrictions or phenomena that require a much more general framework to be explained?
4. Modigliani, for instance, seems to support such an interpretation: The ability of the model set out in the General Theory to explain the persistence of unemployment could be traced primarily to the assumption of wage rigidity. Franco Modigliani: "The Monetary Mechanism and its Interaction with Real Phenomena," in A. Abel (ed.): *The Collected Essays of Franco Modigliani, Vol. 1, Essay in Macroeconomics*, MIT Press, 1944.

5. Our models have little to say on institutions, and yet the sovereign debt crisis may be attributed to a bad design of European institutions: under the European treaties, governments are issuing debt in a currency on which they have no control. History tells us that this has often been a recipe for a sovereign debt crisis.
6. J. P. Fitoussi: (ed.) *Modern Macroeconomic Theory*, London, Basil Blackwell, 1982.
7. B. Greenwald and J. E. Stiglitz: "Keynesian, New Keynesian, and New Classical Economics," *Oxford Economic Papers*, 39: 119–133, March 1987.
8. J. P. Fitoussi: "Macroeconomics and institutions," Angelo Costa Lecture, *Rivista di Politica Economica*, 2006
9. As deregulation was the universal recipe to allow financial markets to better accomplish their function.
10. *Le théorème du lampadaire* (eds), Les liens qui libèrent, 2013.
11. J. P. Fitoussi: *Le débat interdit*, Arlea, 1995
12. The recent, important book of Thomas Piketty not only generalizes this proposition, but contains an empirical research that convincingly demonstrates to what kind of capitalism the persistence of such a gap will lead. See Thomas Piketty *Capital in the XXIrst Century*, Cambridge, MA.: Harvard University Press, 2014.
13. Firms are often "too big to fail" and financial institutions are more than often bailed out by governments, rightly or wrongly.
14. For an example of such an assertion, see Robert Barro: "Determinants of Economic Growth: a Cross-Country Empirical Study," *NBER Working Paper* no 5698, August 1996.
15. J. P. Fitoussi and F. Saraceno: "Fiscal discipline as a social norm: the European stability pact," *Journal of Public Economic Theory*, 10(6): 1143–1168, December 2008.
16. J. P. Fitoussi and F. Saraceno:"European economic governance: the Berlin–Washington Consensus," *Cambridge Journal of Economics*, 37(3): 479–496, 2013.

2

Undemocratic and Unequal: Fitoussi's Critique of Europe's Institutions

Edmund S. Phelps

It's a delight and a great honor to have the opportunity to speak on this fine occasion about the life work of a very dear friend of mine and a brilliant economist whom we all admire: Jean-Paul Fitoussi. My wife, Viviana, and I became close friends of him and his wife Annie – also brilliant but much wittier than her husband – from the first time we met in Fiesole some 30 years ago. We soon embarked on a book together, *La Crise en Europe,* and I soon became a hanger-on at Science Po and the OFCE watching Jean-Paul Fitoussi's rise.

A fair number of economists are theorists and many more are researchers. Jean-Paul Fitoussi is one of those very rare economists who is an insightful *observer* of economies and as well as a *critic* – at a high intellectual level. He has produced an outpouring of books, editorials, and advice to governments that convey his highly original characterizations of the French economy and his sense of its defects. Of course, I noticed whenever we met that there was always some new idea of his about how France worked, but I did not notice at first how the years mount up – and Jean-Paul Fitoussi's ideas with them. Only recently have I come to gauge the body of observations that he has come up with.

How does being an insightful observer of an intellectual bent compare with being a formal theorist or an econometrician? I would say that most theorists can do econometrics and relatively few econometricians can do theory. But hardly any of them are any good at happening on original observations. To paraphrase the mathematician Felix Klein, economists would finally run out of things to do without new perceptions of the world and its changes. The problems have to be noticed

before we can work on them. So our Jean-Paul Fitoussi is in the handful of people who are on top.

I have put a title and a subtitle on my presentation: "Undemocratic and Unequal Treatment: Fitoussi's Critique of Europe's Political and Economic Institutions." This title may suggest that he is some sort of anti-European. I know him to be a loyal European! His critique simply expresses a belief that Europe's institutions could serve the people better than they do.

For me, this critique began in the latter half of the 1990s when he described the governance of the central bank as undemocratic: it was a law unto itself – remote from the opinions and wishes of the general public. I don't remember whether the target of this critique was initially the Banque de France; in any case, when the euro zone was instituted, the target became the European Central Bank, which was even more remote from the people.

An objection to this criticism is that central bank decisions do not infrequently involve considerations understood only by professionals or even by technicians. A reply is that the governor of a central bank is often not a highly trained economist – Jean-Claude Trichet, for example, did not have a PhD in economics. And it has been a long time since America's commander-in-chief had any military knowledge. So the objection that central banking is too technical for most citizens appears to have less weight than it first seemed. A rejoinder is that bank governors are people able to master most technical issues – Trichet undoubtedly *learned* a great deal over the years "by doing" and by discussing with technicians. However, what Jean-Paul Fitoussi was suggesting was that the citizenry ought to have available to them mechanisms to throw out the incumbent experts and replace them with a new set of experts – hoping they will do better than their predecessors would have done.

This critique also targeted the governance of the European Commission on the same grounds. There is no way by which ordinary citizens could turn over the personnel of the Commission.

Some might argue, I suppose, that turnover in these high institutions would not really change anything – that their decisions carry out the recommendations of prevailing thought. I would be the last in this room to argue that the values found in the public do not matter. But it is important to bear in mind that there is apt to be a struggle – a tug-of-war – between opposing sets of values. In my own recent work, I found myself concluding that while some crucial values may remain intact these days, there seems to have been a resurgence of some competing

values – values the consequences of which block the goals of the other set of values.

One phenomenon that looks to me like undemocratic governance was overlooked in the Fitoussi critique, or he did not perceive it as an instance of undemocratic governance. This phenomenon is that in France, the Presidency seems to decide the legislation by the Parliament. My sense is that people are less able to stir their representatives to enact laws they want in France than in a number of other countries. If this is a phenomenon, not just a figment of my imagination, the cause may be an inability of the representatives to agree on operational details; or the cause may be that the President has the power to punish legislators who would take the initiative away from him or her.

The Fitoussi critique does target parliaments and presidents, however – not just specialized bureaus. Jean-Paul Fitoussi was in the forefront of those observers who pointed to what happened when, in 2005, the French government held a referendum of whether to ratify the new text proposed for adoption in the European constitution; 55% of the voters said no. But somehow France became a signatory to the new constitution anyway. Something like this also occurred in Ireland. It is interesting that France and Ireland are two of the most corporatist societies in Europe, though it is hard to find European societies that are not corporatist. (Perhaps Switzerland, Finland, and Denmark are not.)

In the above discussion and the 1995 book in which the Fitoussi critique first took form, *Le Débat Interdit*, the examples of undemocratic governance are all located in government. Around 2005, however, he extended the examples to the private sector, particularly to corporate governance. Everyone here is familiar with the argument by Adolf Berle and Gardiner Means in their 1933 book *The Modern Corporation and Private Property* that the CEOs of the large corporations in America had captured the corporate boards at great cost to shareowners and the nation. Jean-Paul Fitoussi pointed to the corporate boards in Italy and France in which the members appear to represent the population of the impresario and the regisseur but not at all the populations with other kinds of knowledge and perspectives, such as academics. I am told this situation has now changed in some countries, in part in response to this criticism.

Before we take up questions about quite different countries, we have to wonder how this departure from democratic practice arose. Jean-Paul Fitoussi suggests, if I understand him correctly, that the French nation, for one, is in the grip of *la pensée unique*. The term summons up *monism*, meaning (in the political context) the belief that there is only one correct

line of thought or one value, like the sum of utilities, and what Hayek termed *scientism*, by which he meant the belief that by drawing upon the agreed knowledge society can pursue efficiently, or scientifically, the agreed value. Jean-Paul Fitoussi views the government as *assuming* that the nation is united around just one understanding of how the government works and just one purpose. From where they sit, many politicians are convinced that, in fact, the old issues dividing the nation have been resolved. A January 1995 essay by Ignacio Ramonet recalls the celebrated response of Dominique Strauss-Kahn, then socialist minister for industry, to the question, "What is going to change if the right wins [the upcoming election]?" He answered, "Nothing. Their economic policy will be no different than ours."[1] On such beliefs, a government can regard the execution of monetary policy and competition policy as purely technical matters, which can be safely delegated to technicians.

The view implicit in the Fitoussi critique is that, while governments may believe or conveniently assume otherwise, society's members in fact do *not* all see things the same way: there is a *pluralism* of views on how things work or on values. So, in his view, it is wrong to avoid debate on monetary policy at the central bank or on industrial policy in Brussels by treating these governmental entities as if they were simply carrying out the tactical objectives that have been derived from the national thought and the national values.

As Jean-Paul Fitoussi recognizes, the position he takes is reminiscent of political pluralism. De Tocqueville in *Democracy in America* noted there was wide participation in local governments, even town meetings, so diverse opinions and interests could make themselves felt; participants gained dignity, competence, and personal growth. (Moreover, many an institution that would have been under the central government in other countries was created and operated by voluntary associations of private individuals in America. Harbors and lighthouses were under private administration. The Federal Reserve was set up by commercial banks.) Political pluralism became radical with the appearance of the "progressives" early in the twentieth century. Henry Kariel describes the pluralism in England:

> The impulse of English pluralist thinkers ... [was] to protect the individual against the corrupting influence of monolithic power – against whatever force threatened to entangle and destroy him, whether political or economic. Because power was ever subject to abuse, they felt that the very possibility of a unified exercise must be frustrated. Because the existing state was increasingly the instrument of

> the dominant class ruling in its own interest, the neutralization of the state became imperative. And because the state was becoming increasingly unrepresentative and irresponsible, it had to be fragmented – that is, pluralized.[2]

The people were to have a wide role in government decisions by restoring the power of various kinds of groups, such as the church and trade union. In 1920s Britain, however, it was not the central government that was reformed so much as the private sector, which became highly regulated by "public and non-profit making organizations".[3] In the 1930s, too, much government regulation and self-regulation of industry developed. So the populist and progressive aim to "democratize" or "pluralize" the government was not realized.

This concludes the *exposition* of Jean-Paul Fitoussi's observations and analysis of undemocratic governance. Inspired by his vision of things, I first want to talk about the relation of this undemocratic governance to what might be called unequal treatment. It could well be that the Fitoussi critique lies behind much of the recent interest in "inequality." Then I will talk about the way pluralism that has emerged in America and maybe some other nations.

Before beginning, a brief word about inequality: I was an early convert to John Rawls's conception and economic model of economic justice – justice in wages – but I noticed in my subsequent work on just income taxation that the inequality that is entirely in the service of raising wages at the bottom might be staggering – much greater than the inequality left by inefficiently setting marginal tax rates on high earners too high to raise the last drops of revenue that could be squeezed out for the sake of the working poor. (Rawls knew that his theory of justice would have to be tried out and then judged.) Very possibly, this result of just income taxation would give people with the highest wealth an even greater influence over public opinion – though it would give the working poor more voice too. And it would give high earners even greater influence over the government – though it would give the working poor more influence too. It is the middle class that would lose some ground with a shift to economic justice. So we ought not to regard the new discussion of inequality as a misnomer for justice, no matter how we view it. It's a different thing.

To begin, I would point out that a nation ruled by a philosopher-king or by an enlightened aristocracy of high-income, high-education elites who imposed Rawlsian justice on the economy would be seen badly from the perspective of the Fitoussi critique. He would object that the fiscal

mandarins in the Treasury and the Parliament were designing the tax schedule without the participation of the bourgeoisie, who were bearing much of the crushing fiscal burden. Fitoussi is diagonally opposite to Rawls. While Rawls scorns what he dubbed procedural justice without substantive justice, Fitoussi objects to substantive justice without the processes of democracy. Rawls would lament that the democratic procedure will not deliver justice unless the electorate is willing and able to imagine how they would decide the tax schedule if they were behind the "veil of ignorance." In other words, they must imagine that they do not know what side their bread is buttered on – where their actual interests lie. Jean-Paul Fitoussi would observe that the middle class and lower class are powerless, all the power being in the hands of a few. So there is an *inequality* in *political* power between the insiders who have the franchise and the outsiders, who are effectively disenfranchised.

In a somewhat more realistic case, high-income voters, having enough power through their influence on opinion and their representatives to do it, decide for whatever reason to legislate subsidies for the working poor, which as it turns out come largely at the expense of the middle-income people, since they cannot avoid taxation to the degree the high-income people can. Yet in this case too, the middle class can view the redistribution as a case of *unequal treatment*. They did not have the power to participate in and the potential to influence the outcome of the decisions about how much tax revenue to raise and what to do with it.

In a still more realistic case, there is an alliance between low-income and high-income voters, *both* having political power, to provide subsidies for the working poor. Again, this appears to the middle class to be *unequal treatment*. It could be worse. If there is one thing worse than having no voice in this or that area of government, it is having no voice *while some others do*. To be sure, we economists could reasonably tell the middle class to get over it: "You didn't expect that the free ride you were getting with your outlandish under-taxation would last once it was decided to adopt scientific taxation with its low marginal tax rates on high incomes and high marginal taxes on everyone else, did you?" Yet, it may well be that the middle class people do not begrudge the working poor their subsidies; they simply do not want to see their income transferred to the poor by law; they would rather give it to them or vote for it to be given out of taxes. Of course, this is not the case at hand – in America, at any rate. Both the Clinton and Bush administrations rejected boosting marginal tax rates that would have enabled low-wage employment subsidies for the working poor. In fact, Bush kept marginal tax

rates very low even while making permanent expansions of entitlement programs, as a part of his "compassionate conservatism." The under-taxation of middle-income earners alongside upper-income earners is going to cause trouble if not addressed soon.

I come now to present-day pluralism found in America. Social groups, associations and industries are represented throughout government bodies from departments and congressional committees to commissions, bureaus, and agencies. The federal and state governments have greatly expanded their reach into the economy in order to serve a welter of particular interests, which has resulted in a great deal of intervention – lawmaking, regulating, policy making – into personal and business life, notably the financial, education, and drug industries. Yet participation in policymaking here may fail to compensate for lack of participation there and everywhere else. The firms and industry leaders with whom regulators and lawmakers interface become parties to the exercise of the expanded authority; yet, the empowerment of people to participate in their own regulation may leave them feeling a net loss of power. This development appears to have created some feeling among many ordinary business people and some working class people that elites have arisen with the power to limit their initiative and judgment in their careers and even their personal lives. People are – to a degree – participating in government as never before, but many of the participants form elites who create a distance between the governors and the governed that is no shorter than it was before.

So the US experience leaves me unsure Europe would gain better governance if it widened representation of interests and social groups. Jean-Paul Fitoussi calls for more participation because he sees it as a reduction of inequality and thus a gain in itself. The danger is that governance would be worse. I would like to see him and all French economists take a look not only at the procedures of government but also the substance of the laws and policies. To return to low unemployment and a high labor force, France must recapture the innovation of its glorious past and the spirit of *les années folles*.

Jean-Paul: I want to thank you for having made my career more interesting, for sharing your ideas with me, for the 500 lunches, for introducing Viviana and me to your wonderful friends, for your unconditional friendship; and thank you, Annie and Jean-Paul, for calling me "Nedino," which I have come to like, and for putting up with my ever-worsening renditions of *Old Man River*.

Notes

1. I. Ramonet: "La pensée unique," *Le Monde diplomatique*, January 1995. The writer was director of *Monde diplomatique* from 1990 to 2008.
2. H. S. Kariel: "Pluralism," *International Encyclopedia of the Social Sciences*, Macmillan Co. & Free Press, 2007, p. 65.
3. S. Pollard: *The Development of British Industry, 1914–1980,* London: E. Arnold, 1983, p. 99.

Response by Jean-Paul Fitoussi

It was a great pleasure to read Edmund Phelps' paper. I felt embarrassed by his words of appreciation. I learned a lot about fascinating subjects. I learned also about me, which is rare enough to be underlined. Montesquieu has said that while it is pleasant to be praised, one learns nothing new. That was not true in my case.

Europe Economic Governance

Ned focuses on my critique of Europe's political and economic institutions. My target was not the Banque de France, which I had always considered a democratic institution. I disagreed with its monetary policy, the *Franc fort,*[1] but it was a policy that was decided democratically – that is to say, by a representative democracy. The policy was a forerunner of the one followed at the turn of the present century by the Schröder government in Germany: competitive disinflation, a kind of internal devaluation inside the European Monetary System, which had as an instrument an abnormally restrictive monetary policy (with as a consequence a fairly high rate of unemployment) and had as its goal a surplus of the current account.[2] You may criticize the policy led by Greenspan, but that does not mean that you can call it undemocratic.

My critique did not address the European Central Bank (ECB) itself but its unusual statutory apparatus, drafted by the governments of Europe.[3] To my knowledge, the ECB is the only central bank in the world that is not accountable to any parliament or political body with the power to modify its mandate or statute. That does not mean that this power would be effectively implemented, but its mere existence constrains it to internalize the preoccupations of parliament and/or government. This

is achieved in the US by giving to the Federal Reserve an employment objective besides its inflationary one.

The only mandate of the ECB relates to price stability and in order to attain its goal, it enjoys independence of both means and objectives. This critique is much more widely shared now than it was when I initially formulated it. It is indeed becoming common sense – *un lieu commun*. Besides, in the aftermath of the financial crisis, it should have become obvious to everybody that price stability was not a sufficient condition of macroeconomic stability and may not even be necessary. The glorious victory against inflation of the previous decades did not impede the worst macroeconomic instability that the world has known since the thirties.[4]

I never thought that we should introduce a mechanism that would allow the citizenry to throw out the Board of the ECB or the personnel of the Commission. I am in general against direct democracy and content with representative democracy. Above all, I think that we should not confuse the long-term aim of democracy (e.g., institutions), with the short-term aim – the conduct of policy. A true democracy should allow for the changing of policies without necessarily changing institutions and/or civil servants. This is not possible in Europe, where we have to modify the "Constitution," that is, the treaties, each time we want to change the course of policy.

In short, to conduct its policy the European Union (EU) relies mainly on three institutions: the ECB, the Commissioner of budgetary surveillance in charge of monitoring the application of fiscal rules, and the Commissioner for Competition. Each of these institutions has a supra-national power. I am not saying that I am against a supra-national power to run the EU; on the contrary, I am a federalist. It is utterly normal that European integration should place national choices under its tutelage, just as nations when they emerge place regional choices under their tutelage. What is abnormal is that the orientation of EU economic policy is independent of any democratic process.[5]

The result is a hiatus between legitimacy and power. The member states of the Eurozone derive their legitimacy from the electoral process and their constitutions, but they have given up the instruments of economic policy. By contrast, European institutions dispose of the instruments (monetary policy, competition policy, and budgetary surveillance), but do not have the political legitimacy to use these tools beyond what is agreed in the treaties. For example, a case has been brought against Mario Draghi before the constitutional court of Germany, based on the complaint that he has acted beyond the limits of his mandate.

In a nutshell, on the one side, you get legitimacy without power, on the other, power without legitimacy. You referred to the answer of Dominique Strauss-Kahn when he said that nothing will change if a right-wing government is substituted for a left-wing one. This answer could better be understood in this framework. Otherwise, it would convey the meaning that democracy is useless, the choices of the people not being followed by elected governments. One could object that at the time when the governments signed the treaties, they were totally legitimate. But their followers found themselves in a situation where the policy they could follow was almost entirely predetermined. Whatever their doctrinal inspiration, they couldn't really change the course of policies once elected.

In short, the Europeans have the right to vote in "local" (i.e., national) elections, but not in national (i.e., European) ones. It is here where the democratic deficit of Europe lies.

You referred in your paper to the referendum of 2005 organized in some countries on the European constitution. Rightly, you criticized some governments for having reintroduced it in another way after its rejection by the people. Your critique does not differ from mine. How to qualify this way of determining the will of the people, if not by the term undemocratic?

You may tell me that we can live with it. I am rather doubtful. The reaction of a people that understands that its vote will never affect policies may be extreme: the fragmentation of the political sphere in Europe together with the rise of populism and extremism are a testimony of that.

You are right when you say: "I would point out that a nation ruled by a philosopher-king or by an enlightened aristocracy of high-income, high-education elites who imposed Rawlsian justice on the economy would be seen badly from the perspective of the Fitoussi critique." Indeed, but my critique has nothing to do with Rawlsian justice. I prefer such justice being legislated rather than imposed by a king.[6] It may well be that it would be much easier for an enlightened aristocracy to impose some measures with which I agree, says Rawlsian justice, but it may also impose others with which I am in strong disagreement. I want to have my say, or rather I want the people to have its say. Democracy is a value "and it is this value – the inalienable vocation of men to take in charge their destiny, individually and collectively, which constitute the deep unity of the different conception of democracy."[7]

Besides, a benevolent dictatorship[8] may be grossly inefficient when running a country. It may follow a good policy for a certain time, but

nothing, no institution, can constrain it to change policy when it is required.

The architecture of European economic governance shows a similar inefficiency. The European "constitution" is a strange one, indeed, a constitution that contains the details of economic policy! I learned from constitutional theory that because a constitution is supposed to apply to a large number of future generations, it should limit itself to essential rules that are believed to be timeless, those concerning the values, the objectives, and the general organization of powers. Otherwise, it may lead to paralysis when the circumstances change. On top of that, the European constitution can be changed only by unanimity. Both the details on policy and the rule of unanimity explain why there have been so many last chance summits to confront the European sovereign debt crisis and why the problem is still unresolved, at least in my opinion. In effect, to combat the sovereign debt crisis, the European Council adopted a new treaty (the fiscal compact) to constrain countries to pursue a balanced budget. In other words, instead of extending democracy at the level it was needed – the European one – the new treaty reduced it further at the national level.[9] The cost to European societies is already so large than one may wonder about the future of the EU and of democracy in some countries.

Democracy

I value democracy, because it is the only institution or meta-institution capable of self-repair through deliberation and debates. Now we understand better why European democracy is almost unable to repair itself and needs so many summits to resolve a question for which the answers are already available.

The other inefficiency of European economic governance is that the three institutions in charge of economic policy have no choice but to act as independent agencies, each pursuing a specific goal with a specific instrument. As I said in my response to Joseph Stiglitz, this is not a recipe for a good economic policy, as the nonlinearity of our models does not allow for specialization of our instruments. In such a setting, European economic governance cannot be efficient. There is no other way than to have a federal government to resolve both this question and the one of democratic deficit of Europe.

The expression *la pensée unique* has never been my cup of tea, as I find it internally inconsistent. I prefer to call it the dominant thinking. The phenomenon is not specific to France, but to Europe. I have no good

explanation of how this phenomenon emerged. I would venture one assumption. I do not think that an institution can live for long without legitimacy. If its legitimacy does not come from its accountability to the people, it will try to find it in the dominant doctrine. In actuality, it has no choice: if it wants to fill its legitimacy gap, it would be foolish to rely on "minority reports." It is why the course of European policy looks so doctrinal. Another hypothesis is that elites as well as governments care about their reputation to the extent that they are prepared to compromise on their convictions in order to be admitted to the European club. Otherwise, their voices will not be heard in European circles. And it may be shown that if a government cares not only about the well-being of its people, but also about its reputation – and for that it has to obey the social conventions (stability pact, fiscal compact) in order to be taken seriously during the meetings of the European Council – the equilibrium that will prevail is one of soft growth and high unemployment.[10]

Pluralism, the middle class, and all that

I am not sure I entirely got your point about pluralism. In the conception that you highlight, pluralism is more a form of distrust toward democracy than a form of inclusion to allow participants to gain "dignity, competence and personal growth," as Tocqueville said. I value pluralism because it allows for an informed debate before a majority choice can be made. It is, as Dani Rodrik emphasized, a way of maximizing information before taking a decision.[11] I am not in favor of the fragmentation of the state, nor of a state that incorporates a wealth of particular interests. I am naïve enough to think that a government should pursue the general interest. As you say in your paper, looking at the US, "people are – to a degree – participating in government as never before, but they are participating in one another's slow suffocation." I think, on the contrary, that the government should be compact enough to push the program for which it has been elected as far as possible, given the circumstances and the check and balances that characterize modern democracy. Syncretism in government is not a thing I would advocate. For this very reason, I am not in favor of pressure groups or lobbies. I worry about present day "pluralism" – in your conception of the term – in America, and I am not sure that it was not at the origin of the financial crisis. I thought that pluralism was about ideas, not lobbies. Rent seeking behaviors are jeopardizing the well-being of most citizens. Trade unions are an exception. I do not consider them as a lobby; rather, they are social institutions necessary to equilibrate the balance of power between employees and firms and to defend the autonomy of workers.

The puzzle for me was to understand the reasons why I was diagonally opposed to Rawls, as you said. True, I think that Sen's approach to social justice has much to recommend it. But I am for raising wages at the bottom end of the wage scale. I proposed with others to lower the payroll taxes for the low waged and to make the system of social contributions more progressive. In France, where social contributions account for more than 60% of labor cost, that proposal is similar to yours – low wage employment subsidies. The system has been implemented in France, but not in the US.

Of course, I know that this system may come at the expense of the middle class, since they cannot avoid taxation to the degree that those on high incomes can. But that would push our societies in a corner. If the middle class progressively joins the rank and file of the working poor, who will pay for job subsidies? The matter is rather one of just income taxation. And I am not resigned to accept the blackmail of the rich that they will leave the country if they find the level of taxes too high. An international agreement for regulating fiscal and social competition is needed.

I am not opposing the interest of middle class to that of the working poor – quite the contrary. I consider that the structure of a society – its division into classes – is not a static phenomenon, but a dynamic one. If social mobility has any meaning, it implies the existence of a middle class; otherwise, society will be fragmented between two classes, the poor and the rich, without any bridge between them. It is interesting to notice that despite common wisdom, the degree of social mobility is much lower in the US than in Europe.

More generally, I think that the primary responsibility of a democratic state is to design a system of social protection generous enough to counter the rise in inequality.

True, I am against a benevolent dictator ruling a nation, even if he is a great philosopher or enlightened person. But that does not mean that I am against substantive justice. It rather means that freedom is one of the highest values in society. I want people to be able to change government through the electoral process, given the constitution, when they are discontented with the action of the present one, and that is only possible in a democracy. The rise of inequality beyond a certain level is jeopardizing democracy at a point where an increasing proportion of Europeans seem to be tempted by the prospect of changing the system itself.[12] We are witnessing some of these phenomena in European countries where fiscal austerity has been pushed too far. Dan Usher proposed that we should change our criteria for evaluating policies from efficiency to the adhesion to democracy: is such or such policy increasing the

adhesion to democracy, or decreasing it?[13] That it is a much better criterion seems obvious: what would happen in a country where the adhesion to democracy steadily declines? That reminds us also that in the last three or four decades, democracy has regressed as the universal rise in inequality, especially in the US, testifies.[14] Undemocratic and unequal; for me the title of your paper refers to this phenomenon.

Dear Ned, I am conscious that I have not responded to all your comments. But I am sure we will continue our debate during the many other lunches and meetings we will have in the future. I am even almost sure that with the help of Viviana, I will convince you on some points and vice versa. Thanks again for having raised these very important issues.

Notes

1. J. P. Fitoussi: *Le débat interdit*, Arlea, Paris, 1995. It should be recalled that during at least half a decade the short-term real interest rate was about 5% and that the rate of unemployment reached in 1997 its highest level ever since the 1930s of 12.7%.
2. J. P. Fitoussi, A. B. Atkinson, O. J. Blanchard, J. S. Flemming, E. Malinvaud, E. S. Phelps, and R. M. Solow: *Competitive Disinflation and Budgetary Politics in Europe*, Oxford University Press, Oxford, 1993, p. 94.
3. J. P. Fitoussi and J. Creel: *How to Reform the European Central Bank*, Centre for European Reform, London, 2002, p. 68.
4. The paper of J. Stiglitz in this volume forcefully makes this point. See also J. P. Fitoussi: "The hard lessons of the global financial crisis," *Europe's World*, no 15, summer 2010, pp. 20–25.
5. J. P. Fitoussi: *La règle et le choix : de la souveraineté économique en Europe*, Le Seuil, La République des Idées, Paris, 2003.
6. P. H. Lindert in "Voice and growth: was Churchill right?" NBER Working Paper 9749, June 2003, has shown that "Elites democracy" was always less favourable to primary education than normal democracy.
7. G. Burdeau: "Démocratie," *Encyclopedia Universalis*.
8. My book *La règle et le choix: de la souveraineté économique en Europe*, Le Seuil, Paris, 2002, was translated into Italian under the title *Il dittatore benevolo* (Il Milano, 2003), because I thought that "the benevolent dictator" conveyed better my thinking on "rules versus discretion."
9. From time to time, since Milton Friedman, voices are heard in favor of a budgetary rule in the US. Such has been the case recently. To avoid such a rule being legislated, a group of economists – Ken Arrow, Alan Blinder, Peter Diamond, Eric Maskin, William Sharpe, Robert M. Solow, Charles Shultze, and Laura Tyson – wrote a public letter to the President of the United States and the President of the Congress. Their letter contained several arguments; one of them is particularly relevant here. In case of disagreements on the allocation of spending between the different levels of government, the judge would have the last say. That would leave the task of defining economic policy to the court of law. It is an enlightened elite after all!

10. J. P. Fitoussi and F. Saraceno: "A theory of social custom of which soft growth may be a consequence: tales from the European stability pact," *Working Paper OFCE*, no 7, 2002
11. "Institutions for High Quality Growth: What They are and How to Acquire Them," Working Paper, NBER, 75–40
12. J. P. Fitoussi: *La démocratie et le marché*, Grasset & Fasquelle, Paris, 2004
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Thinking about Sustainability *à la Façon de* Fitoussi

Robert M. Solow

Jean-Paul Fitoussi is an old and valued friend, and that is reason enough for me to welcome this celebration of his work. In truth, he has been more than a friend; he has been a dependable ally in controversies over issues ranging from the proper teaching of economics to major questions of broad macroeconomic policy. Naturally, I had intended to be at the conference and dinner in his honor; but, as I sit down to write, it looks as if my own limitations and the health of my wife will mean that the text will have to stand in for me. Quite possibly, French literary theory will take the replacement of a person by a text as a sign of progress.

My assignment is "Fitoussi on Sustainability." The usual first question is: "Sustainability of what?" The literature has evolved from initial vagueness to consideration of real GDP or GNP to much more comprehensive measures or indicators of "well-being." My inclination is to by-pass that discussion here. The National Income and Product Accounts (or System of National Accounts) were never really intended for that purpose anyway. They are about economic activity, not well-being. The extensions needed to get at social well-being are thoroughly discussed in the Fitoussi-Sen-Stiglitz (FSS) Report and elsewhere and will surely be talked about by others in today's conference.

I am content to leave it at that, but I want to put in an urgent word for an altogether different kind of sustainability, and I think Jean-Paul Fitoussi will support me. Traditional National Income and Product Accounts now go back 60 or 70 years in many countries and have been pushed even further into the past in some cases. These long time series are the irreplaceable empirical foundation for the humdrum normal science of aggregative studies of consumer behavior, capital accumulation, employment, inflation, international trade, and many other staple topics of macroeconomics. As the social accounting system is improved

for the purposes taken up in the FSS Report, I hope that any new and broader framework will continue to permit easy reproduction of the traditional national accounts, and allow continuation of standard time series in the interest of the sustainability of empirical macroeconomic research.

In general terms, "sustainability" is about passing on to future cohorts as ample a capacity to create well-being as is possessed by the cohort that is doing the sustaining. The obvious way to pass on a capacity is to accumulate, maintain, and hand on a tangible stock. And indeed the pure theory of sustainability concludes that behaving sustainably is equivalent to maintaining a non-decreasing "inclusive" or "comprehensive" stock of capital. The conclusion is that the appropriate indicator as to whether France or the US or the world behaved sustainably in 2012 is whether the appropriate inclusive stock of capital rose or fell during the year.

What is to be included in the inclusive stock of capital? That depends on what we understand to be the technology for producing whatever we mean by well-being. A moment ago I spoke of a tangible stock – buildings, machinery, office equipment, inventories of goods at various stages of completion, cattle, fish, forests, fertile land, aquifers, deposits of minerals, and so on – but that was under the heading of the merely "obvious." Economists long ago began to talk in terms of intangible stocks that play a part in the production of goods and of well-being. The concept of human capital is now a commonplace; we have moved on to knowledge capital, social capital, and no doubt other forms of capital. I would like to suggest a little modesty here: perhaps an accumulation of modesty capital?

To speak comfortably about a stock of capital we need to have a pretty clear idea of how to accumulate more of it, and something about the way it depreciates or depletes or obsolesces, and perhaps how to calculate the private or social return on it. Even in the case of human capital, in practice we usually say that it accumulates mainly through years of schooling, though we all know how incomplete and tenuous that relation is. We pay little or no attention to depreciation, except through mortality or retirement. We do have ways of calculating at least the private return to whatever it is. When it comes to knowledge capital, the situation is even worse. The standard form of "investment" is research and development, but we measure only the inputs into that process, not its output in the form of knowledge. Little or nothing quantitative is ever said about the obsolescence of knowledge, which is excusable, given how difficult it would be to make such statements. "Knowledge capital" is not much more than a metaphor, a reminder that this is an important

subject. The notion of "social capital" hardly even rises to the status of a metaphor. I am definitely not suggesting that the underlying issues are not important. On the contrary, the social institutions and habits that we pass on to future generations – habits of and attitudes toward cooperation, responsibility, diligence, trust, honesty, and so on – are central to a society's capacity to create and distribute well-being. My doubt is that analogizing all this to the accumulation of a stock is useful economics.

Of course, these intangibles should not be ignored in any discussion of sustainable behavior. My suggestion is only that they should come after a semi-colon in any "production function" whether for goods or for well-being. They have to be accounted for on their own terms. My guess is that human capital is the closest to being usefully studied as a stock, but we desperately need some better measure of investment than time spent inside a building labeled a "school." Other intangibles can be thought of as background conditions that shift the underlying function; any forecast of future capacity to produce well-being has to include an extrapolation of exogenous and endogenous changes in technology, social institutions and perhaps other things. Making such forecasts is very difficult. But it is no more difficult than estimating the shadow prices required for calculating the corresponding stock of "capital," and it is probably more honest.

This is a good place for me to refer to a highly interesting and original Fitoussian idea. Always the realist, he remarks that a development path that is not politically acceptable is not sustainable in a democracy. Now globalization and openness are generally capacity-enhancing, so one might think of them as helping to characterize a sustainable path. Yes, but those forces also have an observed tendency to generate unacceptable extremes of inequality both within countries and between countries. The institutionalization of a welfare state is a way of rendering globalization internally acceptable. So the elaboration of adequate social protection and social insurance systems may be an essential aspect of a fully sustainable path of development. This connection is not often noticed. We have little experience and less success in dealing with inequality between nations. Fitoussi suggests technology-sharing as one fruitful step, but more is probably needed. These thoughts are outside the mainstream of research on sustainability, and I will not try to follow them up. They belong here, because all of this important maneuvering occurs to the right of the semi-colon I mentioned earlier. So I think Jean-Paul Fitoussi would agree that not all of sustainable behavior can be summed up in the maintenance of a sensible stock of inclusive capital, though that is the part we find most intellectually familiar.

As far as I know, the FSS Report has only relatively little to say about how to achieve sustainability itself, and that little at a quite general level although, as mentioned, it has a lot to say about what ought to be sustained. But there exists a 2011 working paper by Jean-Paul Fitoussi and Xavier Timbeau, of which I have seen a draft, called "Financial Sustainability of an Economy: Exploratory Remarks." Financial sustainability is a rather different sort of concept, and has its origin in a different sort of problem, but the paper moves on into more general territory at the end, so I will dwell on it here. Actually this seems to be a true "working" paper; it appears to expand of its own will as it goes along.

The paper is not really motivated by the issue of sustainability in the all-encompassing intergenerational sense of the FSS Report. It is more concerned with the question when a nation will be able to sell its Treasury debt at a "reasonable" rate of interest. The answer is: when potential buyers are confident that it will be able to meet scheduled payments. (The authors have a Eurozone country in mind, so exchange-rate risk is irrelevant, as is the possibility of a single country printing money.) So the initial question is really about the national Treasury's solvency, and its anticipated evolution through the usual debt dynamics. Fitoussi and Timbeau look at ratios of gross financial liabilities to GDP for various countries in recent years, and point out that the picture changes in several ways if net financial liabilities are plotted instead, after subtracting at least financial assets. (It had never occurred to me before that, according to the Maastricht definitions, if two countries in identical circumstances issue and swap identical 1000 euro bonds, they are both 1000 euros closer to the devil.) There is an important distinction between the question of the financial sustainability of Treasury debt and the broader question of the long-run capacity to sustain level of well-being (call it resource sustainability). The answer to the first question depends entirely on market prices; the answer to the second question has to be constructed using shadow prices. Fitoussi and Timbeau stay with market prices, even when they start to broaden the scope of their inquiry. One understands: estimating shadow prices is a major enterprise, and problematic at best. But it makes a difference to some of their calculations, as I will notice later.

The second extension of the Fitoussi-Timbeau framework is to consolidate the private with the public sector. After all, they reason, a nation's capacity to carry debt ultimately rests on its taxpayers. Private wealth is also a form of collateral. (An American, living in a dysfunctional democracy, may wonder about this.) One effect of this consolidation is to restore the distinction between internally held and externally held public debt:

internally held public debt appears as a liability of the Treasury and an asset of the private sector. The same distinction applies to private debt of course; I have no idea whether the data permit accounting for domestic and international ownership of private debt.

It is even more important to take account of real assets as well as financial ones; corporate debt is usually incurred to finance the acquisition of real assets. The paper goes on to do this where the data permit. Here the distinction between market prices and shadow prices really bites. For example, the paper sometimes excludes land as an asset altogether, including state-owned land, on the ground that its price can be excessively volatile, especially in the course of real-estate bubbles and busts. One sees that this is relevant for short-run financial sustainability (although even then it seems odd to value land effectively at zero) but not for long-run resource sustainability. It might be better to include land, and maybe some other assets, at a time-average price, probably closer to the shadow price.

I realize that Jean-Paul Fitoussi's enlargement of the capital concept used in this paper is not, repeat not, intended to throw light on indicators of resource sustainability. His subject remains the "true" credit-worthiness of Eurozone governments. The purpose of compiling country-by-country figures of net worth (financial plus non-financial, private plus public, at market prices) is to end up with a comprehensive measure of the national collateral against which the Treasury borrows. So the ratio of public debt to net worth is a sort of measure of leverage, and the results are not necessarily what one would expect. No European (or non-European) economist needs an excuse to be interested in this question.

Just to take one example of an interesting finding: France and Germany have the same ratio of gross public debt to GDP, which is the usual measure of financial sustainability; but France has higher net worth (public and/or private), and therefore a lower leverage ratio according to this more comprehensive measure. Other results are not surprising: according to this comprehensive measure, the high-leverage Treasuries are Japan's and Italy's.

The central table in this paper (Table 7: Financial and non-financial net worth, 2009, with data for 14 countries) exhibits some puzzling internal anomalies, which Jean-Paul Fitoussi may be able to clear up. (I am in no position to judge the quality of the underlying data.) Household net worth is divided into financial net worth and non-financial assets; in some cases this latter figure is sub-divided into land and non-financial, non-land assets. The puzzle is that, where they are both given, land and non-land, non-financial assets do not seem to add up to non-financial

assets. In other cases, two of the three figures are given; if they added up, the third would be implicit. It is also striking that non-financial, non-land household assets per capita for the US are reported as being very small, 13% of the figure for France, 15% of that for the Netherlands, and less than 10% of that for Great Britain. This may just reflect the greater collapse of American house prices in 2009 than elsewhere, but even so it seems extreme. The table records that non-financial household assets per capita in the Czech Republic and in Hungary are the same as in Sweden (in purchasing-power parity prices or ppp); but average annual wages (also measured in ppp) in those two countries are only about half those in Sweden, which seems odd. Nevertheless, if the point of the paper is to show that the usual headline number of gross Treasury debt as a percentage of GDP can be a misleading indicator of national credit-worthiness, that point is adequately made.

I do not know how corporations are accounted for in this table. Are their assets and liabilities imputed back to households, so that plant and equipment – and perhaps the value of patents and other such assets? – are measured as the equity holdings of households? And then are these classified as financial or non-financial assets? This would, of course, add another element of volatility, in the form of stock-market fluctuations, which is proper for Fitoussian financial sustainability, but not what one wants as one approaches the concept of long-run resource sustainability.

One last point that was stimulated by this paper: the literature on resource sustainability, as I have mentioned, settles on a measure of comprehensive capital – real, not financial – as an immediate indicator of sustainable behavior. So far as I know, this literature deals with a closed economy; it could be the world or some smaller place. The reminder I got from his paper is that, if we are dealing with a single country, it is necessary to include in its comprehensive capital any real resources located abroad but owned domestically, even if these are represented in the national balance sheet by financial assets. ("Ownership" should be treated algebraically, positive and negative, so that appropriate subtractions are made.) This seems odd, but it is a consequence of thinking about sustainability on a national basis when capital markets are international.

The FSS Report itself has some interesting commentary on sustainability, more specifically on indicators of sustainability. It is a group product, of course, but I presume that the hand of Jean-Paul Fitoussi has left fingerprints. The main recommendation on this topic accords with the literature of the subject: the proper indicator of sustainability is the

change in a measure of comprehensive wealth. The authors note that: "The task is difficult, because many components of wealth are not measured at all (i.e., human capital) or are often ill-measured." They go on to remind the reader more than once that market prices for assets are an unreliable basis for valuation; they are volatile, and even time-averages, though smoother, are likely to be distorted by monopoly power, information failures, and true uncertainty.

What strikes me as a little odd is that, in a December 2009 paper called "The Measurement of Economic Performance and Social Progress Revisited," the three authors provide no discussion of shadow prices; as far as I can remember, the words never appear. They may have decided that explaining and using the concept would simply discourage readers from the general public. But it seems to me that the use of shadow prices is essential for a defensible calculation of comprehensive capital. An understanding of this would deepen the authors' point: what makes the problem difficult is not merely the absence of primary data. That can be fixed. But valuation by estimated shadow prices introduces another order of difficulty. Shadow prices have to be inferred from some implicit or explicit economic model, and they are always contestable.

Fitoussi, Sen, and Stiglitz clearly share my worries. Their suggestion is that one's best guess at the "correct" indicator of sustainability – comprehensive capital valued at estimated shadow prices—should always be supplemented by a selection of more nearly "physical" indicators in natural units. I do not have a better suggestion; but I have some anxieties about that one. My main worry is a political-psychological one. The choice of other indicators will inevitably cater to what resonates with public perceptions, which tend to the picturesque rather than the economically essential. Public perception generally underestimates elasticities of substitution in consumption and in production. (I grant willingly that economists probably overestimate those same elasticities of substitution.) Practically, however, there may be no better alternative to the FSS suggestion of checking on the correct but highly uncertain indicator with a few much less informative but much more accurate and understandable fragments of relevant data.

There is a difficult problem of "presentation" here for Jean-Paul Fitoussi and his colleagues, and all of us who have studied the issue. Sustainability and its measurement are an important matter for society. We, economists, think we have achieved some understanding of the basic principles. Translating that understanding into practice – measuring comprehensive capital accurately, in other words – is beyond us. Of course, one tries to improve. In the meanwhile, how do we make a

useful contribution to the political economy of sustainability without either pretending to know more than we do or simplifying to the point of banality?

I will conclude with a few observations about that question, incorporating both lessons that I have learned on my own and lessons that have certainly been influenced by Jean-Paul Fitoussi over the years. First, economists in general as well as those close to the policy process are rarely able to get anything positive done, but they have slightly better luck at preventing really stupid things from getting done by others. This may hold in the debate over sustainability. We need refined models to convince ourselves that we understand what we are talking about. For dealing with governments and the public, it is probably a practical necessity to distill at most a handful of maxims worth fighting for – often negative ones – and find ways of making them real and convincing to people who prefer self-righteousness to reason. (The Fitoussi-Timbeau demonstration of the inappropriateness of the gross debt/GDP ratio was of this kind.)

This has implications for what and how we teach our students. I do not want to say anything more on this subject here, except for one remark, with which I think Jean-Paul Fitoussi will agree. We owe it to our students to teach them the best theory that is available; but then we are also obliged to teach them about the relation of theory to practice. My wife has a t-shirt that carries a quotation from another Jean-Paul, namely Sartre: "In football everything is complicated by the presence of the opposite team." I don't know if the quotation is authentic, but it has application to debates over economic policy, including sustainability.

Finally, no one trying to apply economic principles to issues of public policy should neglect or downplay the distributional implications of alternative proposals (and non-proposals). Even the Pareto criterion is not innocent, as anyone knows who has given approximately equivalent Christmas presents to any number of siblings greater than one. The sense of injustice, especially to oneself, is capable of very refined discrimination. A recent TV news broadcast featured an environmental scientist who was fiercely opposed to the rather expensive efforts underway to protect the Giant Panda from extinction. His claim was that those efforts, costing many millions of dollars, were using up budgetary space that could have financed several projects, each of equal or greater value. He will lose the battle, of course, for no better reason than that baby Pandas are even cuter than Jean-Paul Fitoussi.

Response by Jean-Paul Fitoussi

I can't but thank Robert M. Solow for the kind words he said about my work and for having accepted the present exercise, which constrains him to perform at a distance. I only regret that the audience here will not see him performing, as in addition to being one of the best economists of our time – a giant – he is one of the best lecturers I have ever witnessed.

Sustainability of what?

As usual, you begin by posing the right question: sustainability of what? And my answer to this question is quite broad. The system in which we live is made of a network of complex interactions between four subsystems: economic, social, environmental, and political. I would not be confident in the sustainability of the entire system if one or more of these subsystems were not sustainable. I am sure you agree. How to measure the stock of capital associated with each of these dimensions? And what is the degree of substitution between them? We have still a long way to go to be able to answer these questions, and so you are right to call for an accumulation of modesty capital.[1]

We are bad not only at measuring intangible assets, but also at measuring some important components of GDP, government production for example. The measure of human capital poses, in part, the same problems as the measure of the output of the education or health system. We just use expenditure. Social capital is admittedly a fuzzy concept – although Bob Putnam would not agree with this assertion – and there is still plenty of research to be done to approximate it even at the conceptual level. But we know that trust in others as well as in institutions is an important component, and in several counties there are surveys to

measure it. It does not appear to me that we have used the concept of "knowledge capital"[2] or proposed strategies to measure it. But thanks to you – and to your ground-breaking contribution on growth – we have for several decades used the Solow residual, which is a measure of our ignorance!

The SSF (Stiglitz-Sen-Fitoussi) report was a first attempt at a comprehensive critique of our measurement systems. We made no pretense of building new metrics to replace entirely what we consider to be wrong in existing metrics, but we were also looking for what was missing in our measurement systems. We knew what we owed to them and our aim was not to throw them out of the window. But we knew also, as Joe Stiglitz said in the first session, "that what we measure affects what we do," and if our measures are faulty or if we leave out some important variables, our policies may be inadequate. I will come back to this point latter.

The Fitoussi/Timbeau paper had a more modest aim, even if in the enthusiasm of dealing with sustainability we went perhaps too far. We wanted to explain why Eurozone countries that are currently looking for financial sustainability – by which they mean essentially the sustainability of the public debt – of each member country, were wrong. They are trying to define sustainability objectives, implement economic policies that are "sustainability friendly" and spread information to financial markets in order to reduce pressure on public and private sector borrowing. The problem is that European countries are focusing on a very partial view of sustainability, namely that of public debt, which has led them to impose austerity programs on peripheral countries. This will likely result in a much lower rate of growth and may eventually lead to financial unsustainability both in the public and the private sector.

We then proceeded step by step, first in using the measure of net, rather than gross, financial liabilities, then in consolidating the private and public sectors. We wanted to arrive at a measure of net worth so as to compute the ratio of public debt to the net worth of the individual countries. What we noticed is that the picture changed in several ways as we proceeded to enlarge the concept of financial sustainability. Your critiques are well taken; they all suggest ways of ameliorating our work and we will follow them. After all, it is a work in progress. We had problems with the availability of data; very few countries have a capital account. For the sake of simplicity – which is a bad excuse – we did sometimes exclude land from wealth. We made a mistake in a table (that we have since reconstructed) without any consequences for our general conclusion.

Shadow prices

You are also right in criticizing us for not having used shadow prices, as our focus was obviously on the long run. You are applying the same critique to the SSF report. True, as soon as current prices lose their informative power, the quantification of sustainability cannot proceed without explicit predictions of future economic and environmental trajectories, and without some explicit normative choices about values to be attached to such and such kind of trajectories, that is, what is to be sustained and for whom. There can be very different views about all of these points and also too much "futurity" to apprehend them, as Samuelson would have said.

Xavier Timbeau and I did not use shadow prices, even if they were required, as your precursor 1974 paper clearly showed.[3] Our excuse is simple: that would have required the building of a long-term model, nurtured by assumptions on which there is no current consensus. Of course, we knew that shadow prices were required if we wanted to weight properly the different components of comprehensive wealth, as Arrow et al. (2012) did. But the informational requirements are considerable. As soon as market prices are not a reference, we need to rely on imputed or shadow prices, and these imputations require no less than a full projection model for the economy, the environment and their interactions, and a perfect anticipation of how these changes are going to affect tomorrow's well-being.[4] Our aim was much more modest: to show that they are alternative measures of the credit-worthiness of Eurozone governments, and that the use of these measures could, and should, change the course of present economic policies, which is not a minor conclusion. That the measures we provided are not entirely reliable, in view of our very imperfect knowledge of the future, does not prevent them making our point, that it is bad economics to try to apprehend sustainability through the liability side of an economy, disregarding entirely the asset side.

It may well be that in our summary paper, Joe, Amartya and I did not use the term "shadow prices," but in the report there is an attempt at building a sustainability index in which assets are not valued at market prices, but use imputed accounting prices, based on some physical-economic modeling. If we are able to derive an index from a model predicting future interactions between the economy and the environment in a reliable way, then it would send us correct forewarning of non-sustainability through some increase in the relative imputed price of the critical assets. The problem with this way of approaching sustainability

is all the “ifs” that have been necessary to build into the model. But it seems to be the only correct route to follow.

Measuring capital

Let me come back to the general point. As you said, measuring capital accurately is beyond our means and, as you said, we have to “pretend to know more than we do or simplify to the point of banality.”

But doubt does not imply paralysis, and we can with hard work learn much more. We may also, in extreme circumstances, provide an assessment of the qualitative effects of economic policy on the sustainability of the economy.

Let me for the sake of the argument describe the balance sheet of the economy: on the liabilities side, we will find public and private debts (although most of them should net out). On the asset side, we will have intangible and tangible assets. Intangible assets are the degree of adhesion to democracy by the population, the degree of trust both in each other and in institutions, and human capital. Tangible assets comprise public and private assets and natural capital.

The sustainability of democracy is perhaps the most important thing to look at. Inequality, beyond a certain level, is jeopardizing democracy for two different reasons. First, it leads to an implicit violation of universal suffrage, because when the media, think tanks, and even the university system are controlled by a tiny part of the population, equality before voting becomes a fiction: “we can have democracy in this country, or we can have great wealth concentrated in the hands of a few, but we can’t have both,”[5] said US Supreme Court Justice Louis Brandeis in the 1930s. Second, if an increasing part of the population no longer benefits from the system it may be faced with the temptation of changing the system itself. Hence, the adhesion to democracy may decrease, as can be seen from the results of the May 2014 elections to the European Parliament held in some countries, in particular in France.

Let us try to evaluate at least qualitatively the consequences of present policies on the balance sheet of European countries. The unsustainability of the growth regime prior to the financial crisis led almost everywhere to a sizable increase in public debt. The main objective of member countries of the Eurozone is to reduce their public debt through austerity policies and the sale of public assets. The effects of this policy on the balance sheet of the economy are, at least in my opinion, obvious. Through the increase in unemployment – above all, long-term and youth unemployment – it leads to a decrease in human capital (Spain

has a rate of unemployment of 27% and a rate of youth unemployment approaching 60%). Human capital is further decreased as most countries are decreasing their spending on health. An extreme example is Greece where the health system is progressively being deprived of the means to care for the population. Disenfranchizing of an important part of the population from the labor market leads to a decrease in social capital. A decrease in spending to repair the degradation of the environment, combined with a lack of investment in renewable energies, leads to a decrease in natural capital. Note that all these effects negatively affect well-being. If this policy is also accompanied by a fire sale of public assets as in Greece, it will reduce further net wealth.

In short, the lack of a metric to measure the different types of capital could lead to wrong policy decisions. It may well be that the European governments are right insofar that their policies may lead to a greater decrease of their liabilities than of the different categories of assets – although I doubt it – but absent a measurement system we simply do not know.

I am not proposing at this stage of our research program that we focus only on sustainability issues; we should also take into account when evaluating, say, a given macroeconomic policy what we may know of its qualitative effects on sustainability and/or well-being. We have a long way to go before we are able to measure the different categories of capital that are important to people, and perhaps we will encounter some huge obstacles. But the research has already begun, and a number of initiatives have been taken in different countries. I am confident that we will make progress in federating these initiatives.

Thank you again, Bob, for your precious comments. I will take stock of them.

Notes

1. That is all the more true, given that even our measure of "economic capital" is subject to caution, not only because of the (dys)functioning of the financial markets, but also because the Cambridge Controversies have not yet been fully resolved. See A. J. Cohen and J. C. Harcourt: "Retrospectives: Whatever Happened to the Cambridge Capital Theory Controversies," *Journal of Economic Perspectives*, 2003.
2. But others did it: see K. J. Arrow, P. Dasgupta, L. H. Goulder, K. J. Mumford, and K. Oleson: "Sustainability and the Measurement of Wealth," *Environment and Development Economics*, 17: 317–353, Cambridge University Press, 2012.
3. R. M. Solow: "Intergenerational equity and exhaustible resources," *Review of Economic Studies,* 41 (Symposium Issue): 29–45, 1974.

4. K. J. Arrow, P. Dasgupta, and K. G. Mäler: "Evaluating projects and assessing sustainable development in imperfect economies," *Environmental and Resources Economics*, 26: 647–685, 2003.
5. US Supreme Court Justice Louis Brandeis (1856–1941), quoted by Howard Steven Friedman, *The Measure of a Nation*, Prometheus Books, 2012.

Epilogue: The Leadership of Jean-Paul Fitoussi

Amartya K. Sen

I have known Jean-Paul Fitoussi for more than 30 years – and as a close friend. I am ready, therefore, to dismiss my claim of being entirely objective about this great guy, but non-objectivity of a belief does not, as any epistemologist knows, imply that the conviction is untrue. I do believe that Fitoussi is a natural leader of thought, who has initiated so many enquiries and lines of investigation that it is hard for us, who have been exposed to his ideas and analyzes, to guess what our understanding of the contemporary world would have been but for his role in influencing our thought.

I was very sorry not to be able to come to the celebratory meeting on the June 21, 2013, because of some earlier commitments. The disembodied appearance I was allowed to make at the meeting through modern technology was aided by the specified task, set by Eloi Laurent, of my attempting to answer some questions that he put to me about Fitoussi's work. I would draw a little on my memory of our exchange as well as on the records of the proceedings.

The first question of Laurent's was easy to answer since I was asked to say something about my friendship with Jean-Paul Fitoussi and our interactions. I knew of Fitoussi's work before I met him, but we were put together by Kenneth J. Arrow who was then the President of the International Economic Association, of which Jean-Paul Fitoussi was the Secretary General. Since I had to follow Arrow in the rather august position he held, I was in fact trained by Jean-Paul Fitoussi about the responsibilities of the Presidentship of IEA. He was a good teacher, and after the training period, he and I worked together in our respective positions in effectively running the IEA for three years. There were, among other things, complicated problems of revising the membership fees, which

had to be sensitive to the size of the country, its prosperity and penury, as well as the extent of the involvement of the national association in the work of our international organization. I was, of course, struck by Jean-Paul Fitoussi's efficiency as well as warmth in dealing with economists from across the world, but also by the enjoyment that went with working with him in solving difficult problems (or more accurately, in seeing with approval him solving the world's problems).

Among the many powerful ideas that Jean-Paul Fitoussi contributed to our understanding of contemporary economies and their global relations is his consistent focus on the importance of taking note of different dimensions of inequality – within and between nations. He has also linked inequality with questions of fiscal irresponsibility, and he has led both social scientists and political leaders to think more closely about their critically important connections.

One of the foundational insights emerging from Jean-Paul Fitoussi's work is his reasoned emphasis on the role of democracy in making capitalism an acceptable economic system. Indeed, I am persuaded, if only through many conversations with him, that a capitalist economy without democracy in any substantive form would be an extremely sad – and a possibly even brutal – system.

Since my own thinking on these matters has been to a great extent shaped by what I got from my study of Adam Smith (including *The Moral Sentiments*, *The Wealth of Nations,* and *Lectures on Jurisprudence*), I am fundamentally sympathetic to Jean-Paul Fitoussi's approach in assessing combinations of institutions, rather than trying to evaluate an economic system in isolation without adequate political specification and social characterization.

It is possible to entertain the skeptical thought that sometimes even a strong form of democracy may not be able to tame the wilder and nastier side of capitalism. Much will depend on the vigor of democratic practice. For example, a more vigorous – and consequently more informed – use of democratic power should have prevented the economic crisis of the kind that occurred in 2008. For instance, the politics of governance of the USA should not have allowed the declassification of Credit Default Swaps as insuring activities and not exempted them from regulations and scrutiny that insurance markets are rightly meant to have in that country.

I also do think major mistakes were made by democratic Europe in the handling of the economic policies of the European Union. One example is its going first for a currency union without a fiscal and banking union, not to mention a political merger. Also, its attempts to remedy the global

economic crisis that subdued many European economies, though indiscriminate austerity was a big mistake. And so was the decision to give priority to spending cuts rather than much needed institutional reforms. The essential reforms were unwisely tied up with pervasive imposition of austerity, making the former far less palatable in a way that was economically unnecessary and politically disastrous. So democracy has not quite done what it could have to help the lives of Europeans – and also people across the globe, since we live in an interdependent world. Democracy is great, but its practice can do with substantial improvement.

It is not the case that Jean-Paul Fitoussi and I have never disagreed, but I have always felt the sense of sharing similar lines of reasoning, if not always exactly the same conclusions. We have often argued, even as I have continued to learn from his ideas, concerns, and analyses. I do not think our relationship would have been as much fun if we had always agreed.

Before I end this brief tribute, let me say that one of the great benefits of my friendship with Jean-Paul Fitoussi has been the opportunity of knowing Annie. Her warm and enlightening presence enriches the lives of his friends even as it has transformed the life of Jean-Paul himself.