A T-shirt model of the Eurozone crisis: Debt shortage as the final cause

Contribution to the panel
How to reclaim the fiscal instrument in Europe

19th Conference of the Research Network Macroeconomics and Macroeconomic Policies (FMM)
The Spectre of Stagnation? Europe in the World Economy
22–24 October 2015

Andrea Terzi
Franklin University Switzerland and
Department of Economics and Finance
Catholic University, Milano

Abstract— Neither fiscal profligacy nor capital flows are the "final" cause of the Eurozone political and institutional failure that thwarts the growth of output and jobs. The sovereign debt crisis and the capital flight of 2010-12 were triggered by the vulnerable position of credit-constrained local governments in a monetary union and of a fragmented banking system with no credible deposit insurance.

The paper first offers a critical review of the notion of savings in orthodox theory as the source of funds available for investment. It finds that in a monetary economy, financial saving can be stored only in the form of a financial claim and requires an act that reflects on others. This means that an act of financial saving requires funding and must be associated with a corresponding act of another unit issuing debt. Savings do not fund. They need to be funded.

The paper then elaborates on a simple ("T-shirt") model of private job creation in a monetary economy, where this is a function of the actual and the intended stock of gross private savings. When savings are in excess of the intended amount, private spenders create jobs, and when savings are short of the intended amount, private spenders destroy jobs. Assuming intended savings as a given, and because the ultimate source of savings is debt, then any policy that inhibits the formation of debt also inhibits the formation of financial savings and jobs.

If debt (private, public, or foreign) is the final fuel for spending, then Eurozone rules that put a cap on public debt inhibit one major source of savings. Current fiscal rules leave the Eurozone with two, both unsustainable, alternatives: building up more private debt or counting on a permanently high flow of net exports.

.

I. Introduction

This panel is asking us "how to reclaim the fiscal instrument in Europe", and I will try to respond by addressing the following questions regarding the Eurozone crisis: Was it caused by fiscal profligacy? Was it caused by capital flows? Can monetary policy and structural reforms under a balanced budget constraint end it? I will answer "no" to each of these questions and conclude that the fiscal instrument, and more specifically a large enough public debt, is a decisive, essential part of the solution. Although this conclusion is at odds with "orthodox" beliefs, we should be mindful of the fact that well-established beliefs in economics are not always "the best-known answers" of the time. This is reason for considering two such "best answers", as found in the works of two classic masters of economics, Adam Smith and John Maynard Keynes.[1]

From Smith, I will take a notion which is so beautifully and compellingly stated on the first page and then continues throughout the five books of *The Wealth of Nations* [6]: that a nation's prosperity is its capacity to provide "necessaries and conveniences of life" to its members. Smith is telling us that the goal of a nation and the purpose of its political economy is access to the product of labor, whether it is obtained domestically or from others in exchange for our exports. For Smith, the wealth of a nation is measured by its power to acquire real, not monetary, values. Applied to Europe today, this reminds us that European policies should aim at the goal of raising the growth of real output and employment and consider financial conditions as wholly functional to achieve real prosperity.

From Keynes, I will take the belief, running throughout his writings, that the way in which a monetary economy works is so fundamentally different from that of a non-monetary system of exchange that any economic theory that does not assign money a central role in the formation of people's decisions is inadequate and deficient [3]. In an economy of money contracts and uncertainty, agents make decisions on the basis of financial stocks and expected monetary flows. For Keynes, monetary values shape real economic outcomes in a monetary economy, and effective monetary management thus becomes an essential condition for avoiding financial mishaps that ultimately affect real prosperity.

These two views are highly complementary. Smith is warning us away from aiming at nominal, monetary financial goals, and Keynes is warning us away from pursuing Smith's goals without considering how the system's dynamics are driven by monetary and financial considerations and expectations. Smith is telling us that real output capacity is what matters, but he is also aware that money is "the great wheel of circulation": it is not our wealth, but it makes the production of real wealth possible. Keynes is telling us that monetary and financial variables influence our choices, but he is also aware that real prosperity should be the ultimate public purpose of nations. Smith is concerned with defining the policy goal of a nation, and Keynes is concerned with describing the instruments that let the nation achieve that goal.

---

[1] Let me note that by "classic master" I mean an author who stands the test of time, whose writings still enlighten the present and provide suggestions and guidance of contemporary relevance.

When we consider the well-established, orthodox economic theories of our times, we find them skewed towards a vision that economic agents do (and should) only care about real costs and real benefits. On such premise, monetary values are nominal magnitudes that do not change the process of decision-making except by derailing it or fooling it temporarily. By the same token, the decision-making process is (and should be) driven by (marginal) real benefits and costs, where money is a convenient means of exchange that only becomes an inconvenient source of disturbance when its public issuer attempts to manipulate it by carelessness or ignorance. Quite coherently with this, the dominating models in macroeconomics maintain the view that there are no monetary shortcuts to prosperity and only policies that impinge on the real conditions for long-run growth can be successful and sustainable.

Having failed to recognize how vulnerable the U.S. and the European economies had become in the early 2000s, well-established models continue to provide the prevailing theoretical foundation for growth policies. Policy prescriptions within such framework aim to restore demand through structural policies aimed at modifying the real conditions of production, monetary policy aimed at modifying the real rate of interest, and fiscal policy aimed at prevent that real costs are shifted to future generations. Although inspired by Smith's view of what is the real wealth of a nation, these model are, in actual fact, taking Adam Smith's vision to an extreme. They are "*plus royalistes que le roi*".

A more balanced position combining Smith's vision that in a monetary economy only real costs and real benefits ultimately matter with Keynes's vision that monetary flows and stocks steer agents' real decisions can be restated as follows. Sustainable and sustained growth of output and jobs, not only requires continuing efforts to improve and enhance growth-compatible institutions, or define living standards through political decisions about the size of the public sector, employer-worker relations, or the desirability of welfare programs, but it constantly needs financial conditions that do not obstruct the monetary flows that support the real growth that the political process has set. In this framework, the scope of this paper is to demonstrate why the Eurozone policy mix, and specifically the institutional constraints on the fiscal instrument, is creating adverse monetary conditions for growth, and it is removing support to growth of real output and jobs.

II. The Eurozone Crisis

The Eurozone crisis is a multi-faceted crisis that can be seen from different perspectives. There is a government debt crisis that developed in the aftermath of the Lehman collapse and became fully blown in 2010-11 when governments faced borrowing costs that were deeply diverging from the policy rates set by the European Central Bank (ECB). The crisis peaked in 2012 with the ECB announcing it would engage in (conditional) outright purchases (Outright Monetary Transactions) of government debt in secondary markets if needed.

The government debt crisis was caused by the condition of ex-sovereign nations now facing an independent central bank that those same nations had forbidden from financing their own

spending. It was a comeback of country risk in a monetary union that mirrored the dynamics of the (pre-euro) European Monetary System (EMS) with one key difference: while governments' borrowing costs under the EMS were different because central banks set policy rates at different levels to defend currency parity, different borrowing costs in the Eurozone were the signal that the ECB was losing control of monetary policy in that it was unable to set a common interest rate across the single currency area. By initiating, in 2015, the "public sector asset purchase programme" (PSPP), the ECB has further addressed the problem of diverging borrowing costs, at least for those Eurozone countries that are eligible to PSPP.

There is also a crisis of economic and political convergence in Europe and the Eurozone specifically. Countries have been unable to comply with common rules (notably, the Excessive Deficit Procedure and the Macroeconomic Imbalances Procedure), and they have lacked a coordinated, institution-based governance that could effectively deal with growth and employment differentials. From this perspective, it is argued that Europe may be forced into making a hard choice between moving to a political (and fiscal-transfer) union or else disintegrating, both being ways to restore the concurrence of political, fiscal, and monetary powers at the same level [2].

The crisis of convergence, however, would not entail such grave consequences if Europe were not suffering from a long and acute economic crisis that has led the continent to overall stagnation, a large output gap, and a slowdown in potential output growth. This has exacerbated the differences, has triggered divergence in growth and employment, and has validated the definition of the Eurozone as a drag on the world economy, with adverse effects on the broader international role of Europe in the far-from-stable post-Cold-War world.

An overall notion that captures these different crisis dimensions is the recognition of a political and institutional failure, rooted in the architecture of the single currency. The debt crisis, the lack of convergence, and economic stagnation reveal serious cracks in an edifice that was meant to provide, economically, the conditions for the success of a "single market with one currency" and, politically, increasing harmony amongst the peoples of Europe. But the project is failing on both counts, as the crisis deepens divisions and creates mutual mistrust, threatening the whole process. This is not the time to discuss what went wrong in the design of the single currency in Europe. It is the time to take timely steps for making the economic and monetary union an engine for prosperity. Today, it is in the interest of Europe that, since the single currency has been set in motion, it must not fail.

III. Was "Fiscal Profligacy" the Cause?

"Fiscal profligacy" commonly describes the lack of compliance of Eurozone (and the EU at large) countries with common fiscal rules. Since the inception of the single currency, several countries experienced fiscal deficits larger than the rules permit. So far, the European Commission has initiated 33 "Excessive Deficit Procedures", 11 of which are still open. In addition, four countries have received financial assistance on the commitment to implement an

“economic adjustment programme” designed by the Commission, the European Central Bank, and the International Monetary Fund. Pointing to fiscal profligacy as the final cause of the Eurozone crisis means pointing to local causes (rather than design flaws) and calling for individual country corrections (rather than an institutional reform of the Eurozone).

Ending fiscal profligacy in non-complying countries is the process known as “austerity-cum-structural reforms” policy. This is not the place to discuss the character of structural policies that have been encouraged, or realized, in the years of the Euro crisis, especially with regard to the labor market. It will suffice to observe that some of those structural policies do address serious problems that do affect the real prosperity of a nation. Lack of quality control of government expenditures, lack of tax collection enforcement, administrative costs that discourage economic initiative, and poor public infrastructure that stifles economic activity are, however, cases of “fiscal negligence”, rather than “fiscal profligacy”. And they are particularly insidious because they don’t necessarily show up in fiscal deficit statistics. The fight for a more efficient government sector, in other words, can hardly be conducted on the basis of containing deficit figures. Large deficits do not and cannot signal fiscal negligence.

What fiscal deficits tell us is quite a different story: the net spending of governments (their spending in excess of tax revenue) tends to fluctuate consistently with non-discretionary items driven by the business cycle. This is the case in the U.S. as much as it is in the Eurozone. The correlation between fiscal deficits and cyclical conditions is a well-established fact in macroeconomics that textbooks describe with the countercyclical effect of “automatic stabilizers”.

And in fact governments are not called “profligate” simply on the basis of their current deficit. “Profligate” is called the government of a country that has accumulated an excessively large public debt overhang that limits fiscal space and impedes the functioning of automatic stabilizers. Thus, it is not the rising fiscal deficits during the crisis that have posed a threat to the Eurozone. It is the excessively large accumulated debt of some countries that were not in a position to let fiscal deficit respond endogenously to the recession.

Accordingly, Europe continues to insist on fiscal adjustments not on the basis of a belief that austerity has a positive effect on cyclical conditions. It is rather generally acknowledged that austerity (in other words, any combination of spending cuts and tax hikes) slows growth further during a recession, precisely by impeding the functioning of “automatic stabilizers”, and is more likely to make fiscal deficits bigger when compared to GDP. Nevertheless, austerity is considered the painful and yet inevitable price that countries with too large public debt must pay. Once fiscal balance is back, a rising confidence can help bringing the economy back on track.

But this is where the “fiscal profligacy” argument faces another challenge: Lacking proof of what is the debt/GDP ratio threshold above which debt becomes unsustainable, one can only view “fiscal profligacy” as a condition in which the debt of a given country is judged to be “too high” so as to force that country into “austerity”. In other words, once a country’s accumulated

debt is declared "too high", that country can no longer afford to let deficits move anti-cyclically. Between 1999 and 2012, it was left to financial markets to decide which Eurozone country's debt was "too high". With the post-2012 ECB policies, it is only EU rules that declare country's debt being "too high". Any country caught in such arbitrary definition loses the fiscal flexibility to counter a recession. Thus, while "fiscal negligence" is unquestionably an issue, "fiscal profligacy" is arbitrarily defined.

IV. Was the Crisis Caused by "Capital Flows"?

"Capital flows" is an example of a phrase that lends itself to different and potentially misleading interpretations. The intuitive meaning of capital flows is that of a bunch of capital, in some form, moving from one country to another. Two clarifications are in order here. First, the term "capital flows" designates a given country's external transactions involving financial capital, such as residents' acquisition abroad of bank deposits or other financial assets. For the purpose of this presentation, I would prefer to use the terms "cross-border financial claims" or "financial account transactions". The difference with international transactions is the political border between participants, such that the owner of the accounts is a non-resident of the location where the accounts are maintained.

Secondly, any cross-border financial claim originates either from a settlement of a cross-border trade or income payment or from a cross-border financial investment. In the latter case, a financial account debit is matched by a financial account credit. Only trade or income payments create a mismatch of financial flows and a net entry in what is called the "current account" section of the balance of payments. Net financial inflows (and outflows) are the accounting record of a differential (also known as "imbalance") in cross-border real flows.

If a country is a net importer, and domestic banks' liabilities to non-residents increase, it is considered a "net borrower". Likewise, a net exporter country is considered a "net lender" as vendors (or their banks) acquire claims on non-resident (as opposed to domestic) banks. Such imbalances are made possible by the "net lenders" of one nation being willing to hold an increasing amount of claims on non-residents. When such willingness fades, and countries use different currencies, the change in preferences causes a fall in value of the currency of the "net borrower" nation.

If the two countries or regions belong to the same currency area, a decreasing willingness to hold claims on the "net borrower" region can occur when banks of the "net lender" region perceive that credit risk of the banks of the "net borrower" region is rising. Normally, banking supervision avoids regional concentration of risks, and in any case should a regional credit-risk crisis threaten to erupt, national deposit insurance comes into play. In the Eurozone, during the financial crisis neither of these two safety valves were (and still aren't fully) in place: Different bank supervisors and a non-credible deposit insurance triggered "capital flight", evidenced by the sell-off of claims on non-residents, as "redenomination risk" started to be a significant variable in the portfolio decisions of cross-border investors.

Pointing to capital flows as the final cause means pointing to systemic causes, where core and periphery were intertwined and mutually involved. It is said that evidence that capital flows, not fiscal profligacy, were the cause of the crisis is provided by the fact that the "crisis countries" had in common the largest current account deficits of the Eurozone, and not the largest fiscal deficits, and thus the crisis is ultimately a balance-of-payments crisis.

How the Eurozone balance-of-payments crisis developed is explained in two different ways. One is a "real-trade-flows story" that begins with the deflationary policy initiated in Germany at the time of Schröder's labor market "Agenda 2010" reform, which lowered the German unit labor cost dynamics and resulted in net export flows from Germany to the Eurozone periphery. Germany's private sector accumulated claims on the periphery that were inconsequential until the global crisis began to shake confidence in the euro and discount redenomination risk.

The other is a "financial-flows story" that begins with Germany's portfolio managers embarking on heavy financial investment in periphery financial assets that offered a slightly higher return, which underpriced the much higher credit risk of such investments, notably periphery debt. This was the outcome of a market failure in assessing financial risk with the complicity of bank regulators' incentives to hold government bonds. Government bond yields narrowed in spite of substantial differences in risk until redenomination risk broke out.

In this story, "German capital outflows" allegedly slowed growth in the Eurozone core and accelerated growth in the Eurozone periphery, creating an unsustainable bubble in the recipient countries that lasted until the "net lenders" decided not to renew their lending any longer, thus creating a massive liquidity crisis in the recipient countries. This bubble story, however, fails to provide a credible account of a link between capital inflows and credit expansion in the periphery countries. Capital inflows do not affect any quantitative constraint on the supply of credit, as they simply entail the ownership of deposits being transferred to non-residents.

Regardless of whether the bubble story makes sense, capital flows have played a major role in triggering financial instability. Not so much when flows expanded (this, after all, reflected increasing financial integration, which was an intended outcome and a selling point of monetary union), but rather when they stopped. Lack of a banking union and of a common and credible deposit insurance were the two causes of the negative consequences of capital flight. Deposit insurance was not credible as this was (and still is) funded by credit-constrained governments with vulnerable public finances.

This consideration reveals the connection between the two arguments of fiscal profligacy and capital flows as final causes. If the fiscal-profligacy argument supports the notion that governments have been spending more than they could under their debt-overhang constraints, the capital-flows argument holds that the private sector of the core countries made imprudent loans to periphery countries, ignoring specific country risk. At the root of the problem there remains the transformation of Eurozone countries into ex-sovereign nations with no access to central bank money. This has made governments credit-sensitive and deposit insurance not credible.

Two main remedies have been introduced in the Eurozone architecture to address financial instability: the banking union (although incomplete) and the practice of the ECB to provide support (although conditional) to government-debt issues that has compressed yield spreads on all maturities. Are these two important changes in the Eurozone architecture and practice sufficient to put the Eurozone back on track with regard to real growth of output and jobs?

As the Eurozone continues to be a drag of the world economy, and as deflation has become a threat, the ECB has now embarked on a policy aimed at expanding demand. Every professional economic forecaster bases growth forecasts on expected spending growth by different sectors: Consumer spending, business investment, government spending and exports. In the next section, I will explore the potential for demand growth under the current Eurozone architecture, focusing on the monetary conditions necessary to achieve real prosperity.

V. Why Savings Matter

When it comes to explain an economic downturn, virtually all models (with the notable exception of real business cycle models) explain it with a decline in spending, and every forecaster typically bases outlooks on prediction of how the major component of domestic and foreign demand are expected to move. In this same framework, the statement that the Great Recession begins with a dramatic fall of demand in the fall of 2008 can hardly be challenged. The question is whether policy actions exist that enable demand to expand by keeping fiscal rules unchanged in the Eurozone.

Examples of such policies include actions aimed to enhance business and consumer confidence, restore bank lending through monetary policy, and increase the capacity to export through lower costs of production and enhanced competition. Fiscal policy, as said, is only of help if the budget has enough “fiscal space” to respond to cyclical conditions, and for this reason it becomes imperative to put the fiscal house in order. Monetary policy should support the process by steering the real rate of interest to the level that restores a balance between saving and investment, which can be obtained by lowering interest rates to the lower bound and raising inflation expectations. This is supported by the hypothesis that if there is a lack of demand, savings must be in excess of the level that would be consistent with potential output.

Discussing spending and its opposite, saving, is a tricky exercise in macroeconomics. The notion of savings, in particular, is one that most textbooks handle with a good degree of confusion. To the question, “Are savings good or bad for the economy?” textbooks offer two conflicting answers, often presented in two different chapters. When they explain the neoclassical growth model, savings are the source of investment and growth. When they discuss the Keynesian model of aggregate demand and supply, savings depress demand and growth. Students who are bold enough to ask for clarification are typically given the following answer: Savings are bad in the short run and good in the long run. To most students, this logical conflict remains a mystery, and they dare not ask any further, as long as they think they know which answer is expected for each multiple-choice question.

Moving from textbooks to policy choices, we hear correspondingly opposite views: Excessive savings are considered a cause of contractions, but a savings shortage explains a slowdown of potential output growth. Within a short-run excessive savings context, policies recommend increasing spending via redistributing income from the low-spending propensity population (the rich) to the high-spending propensity population (the poor). Within a long-run savings shortage context, by contrast, policies advocate more incentives to save. Because raising potential output appears to have a longer-lasting benefit than simply ending a recession, most people (and especially the rich) find savings incentives the more sensible policy approach to growth.

Yet, the solution to the conundrum about savings policy must be sought elsewhere, and a good place to start is by investigating the way savings are measured. Consider how most of us are used to viewing personal and national savings, based on national income accounts, distinguishing investment from consumption. Personal saving (S_P) is defined as follows:

$$S_P = \text{National income} - \text{Taxes} - \text{Consumption spending} \qquad (1)$$

This definition is apparently consistent with the way one commonly defines the flow of individual savings: What a person saves every year is, likewise, the unspent amount of after-tax income. Notice that while spending on consumption goods is subtracted from income, spending on investment goods is not. Thus, in this definition, S_P includes a combination of saving in the form of output (investment goods) and saving in the form of unspent income, i.e., financial assets.

When considering the accounting components of National income, this same definition is written as follows:

$$S_P = \text{Investment} + \text{Government deficit} + \text{Current account balance} \qquad (2)$$

Definition (2) illustrates how S_P combines "real savings (i.e., saving in real goods as defined by current accounting standards) with "financial savings" (i.e., the net claims held by the private sector on the public sector or on the foreign sector).

National saving (S) is typically defined as the sum of Personal saving (S_P) and Government saving, the latter being defined as the Government fiscal surplus (or the negative of government deficit). With this definition, for any given year, new private sector claims on the public sector and public sector deficit are netted. Thus, what is called national saving is "real savings" plus net new claims of nationals on foreign entities, acquired through net exports:

$$S = \text{Investment} + \text{Current account balance} \qquad (3)$$

While the above equations are accounting identities reflecting how different items are arranged in national accounts, they are often employed to back a narrative that misguidedly supports the following statements:

- Personal saving is a source of funds to be used to finance business investment, new government debt, or to be held abroad in exchange for net exports (of goods, services, and income).
- A government running a deficit absorbs and consumes personal saving, thus reducing the amount of saving available for investment.
- A nation (i.e., personal sector plus government) that saves more than it invests (i.e., S>I) is a net lender in the form of claims on non-residents deriving from its net export balance.
- A nation that saves less than it invests (i.e., S<I) must borrow from non-residents via a current-account deficit.

Although well-established orthodox views endorse these statements, there are two considerable problems with the above interpretation.

First, personal saving does not measure what most people think it does. As noted above, personal saving does not measure what various economic agents have stored in a monetary or financial instrument – which is what we would normally identify as "savings available for investment". Instead, it is a residual measure, drawn from accounting definitions, equal to the overall value of income-generating output minus the value of the consumption component of domestic output, minus the taxes paid to the government, minus imports. Its size depends on national accounting standards.

Consider, for example, when a country implementing ESA 2010 guidelines revises national accounts by moving a certain type of business purchase (such as research and development) from being classified as a current input expense item to being classified as a "business investment". Such revision entails that the definition of investment output is bigger, that the definition of consumption output is smaller, and that personal savings are correspondingly bigger. Personal saving is revised upwards as a result of a modified accounting definition, with no change in monetary and financial flows.

The second problem with the above four bulleted statements is that they do not apply to a monetary economy. The narrative about saving being a source of funds for investment suits only a non-monetary economy where saving is a real resource. When people save in the form of a real commodity, like corn, the decision to save is a fully personal matter: If you have acquired a given amount of corn, you have the privilege of consuming it, storing it, wasting it, as you please, without this directly affecting other people's consumption of corn. Only if you decide to lend it will you establish a relationship with others. "Real saving" reflects the individual decision of not consuming a real product, thus providing a possible means for investment if the owner of the corn uses it, or lends it, to produce investment goods.

In a monetary economy, saving is not a real quantity that anyone can independently own, like corn or gold or a collection of rare stamps. In a monetary economy, saving is an act that reflects on others in the form of a financial claim. Unlike a commodity such as corn, financial saving always appears as a financial relationship, as it exists only as a claim on others, in the

form of banknotes, bank deposits, or other financial assets. Personal savings are claims of one economic unit on another, and any change in savings entails a change in the relationship between the "saver" and other economic units. This does not appear on national accounts, which only expose aggregate values.

If we then look at savings by zooming out of the individual unit and considering the interconnections between units and between sectors, we find that each penny saved must correspond to a debt of equal size: A banknote is a central bank's liability; A bank deposit is a bank's liability; A government security is a government liability; A corporate bond is a private company liability; and so on. This means that when we discuss the stock of financial savings we are also discussing the stock of outstanding liabilities: Every penny saved is someone else's liability. In a monetary economy savings do not fund: They need to be funded.

The relationship between financial savings and debt can be analyzed using a financial (flow-of-funds) system of accounts [8]. A single unit's "net financial balance" equals the difference between all its receipts and all its expenditures. An excess of receipts over expenditures entails either an accumulation of claims on others and/or a reduction of liabilities. An excess of expenditures over receipts entails either a reduction of claims on others and/or an increase in liabilities. Because the sum of all receipts in the economy during a given time period must equal the sum of all expenditures, net financial balances must add up to zero in any closed accounting system. Noticeably, and unsurprisingly, financial savings add up to zero for the world economy. This is in contrast to the "real" version of savings, as output not consumed is typically greater than zero.

Using financial accounts to study the relationship between economic sectors (i.e., private—including households and firms; government; and non-residents), then the following identity must hold:

$$\text{Net private financial balance} + \text{Net government financial balance} + \text{Net non-residents financial balance} = 0 \qquad (4)$$

Or:[2]

$$\text{Net private financial balance} = \text{Government deficit} + \text{Current account balance} \qquad (5)$$

Notice that the Net private financial balance is, by definition, the difference between the change in private financial claims and the change in private liabilities, so every new private financial claim that comes into existence must be the counterpart of another private liability or of a government liability or of a foreign liability.

[2] Government deficit is the negative of the Net government financial balance, and the nation's Current account balance is the negative of the Net non-residents (i.e., foreign) financial balance.

As said earlier, words in economics can be tricky. When "Personal saving" is meant in real terms, it measures the output that we define as not being consumed (by some definition) in the current period of observation. When "Financial savings" are measured in monetary terms, they are the counterpart of private, public, or foreign liabilities. As opposed to the misleading interpretation of savings as a real commodity that when acquired can be stored or loaned, financial savings can be stored only in the form of claims on others. This also means that an act of financial saving by one economic unit requires funding and is associated with an act of another unit issuing debt. This breaks the narrative of financial savings as a source of funds available for investment.

This same result can be seen in the form of stocks rather than flows:

Gross private financial claims = Gross private debt + Net government debt + Net financial international position (6)

Gross private financial claims are the stock of financial assets in existence at a point in time, corresponding to private debt issuers, government debt issuers, and foreign debt issuers.[3] It can be seen as a stock equivalent to (yet broader than) common "monetary aggregates".

A portion of those claims is typically stored, for example in pension funds or private portfolios. Another portion is effectively in circulation, as producers (i.e., workers and firms) compete for financial claims in circulation by selling their labor or their output.

When producers need funds on top of what they get through sales and income, they still do not depend on the saving willingness of others. They can either borrow from banks or sell a debt obligation, in which case all they need is to compete for financial claims in circulation. It is in the producers' interest to increase financial assets via sale receipts rather than borrowing. Should consumers or employers save more, producers would have a harder time getting financial claims and funding savings.

VI. Savings, Debt, and a T-Shirt Model of Spending and Job Creation

Physicists say that a theory of the universe is not credible if its fundamental building blocks cannot be condensed on a T-shirt. In a similar fashion, I will use three equations to illustrate what we know about the causes of private job creation in a monetary economy.

As discussed in the previous section, the stock of gross financial savings held by the private sector (GS) must equal the sum of the outstanding private (D_P), government (D_G), and foreigners' (D_F) liabilities:

(1) $$\boldsymbol{GS = D_P + D_G + D_F}$$

[3] The net financial international position is the nation's net stock of financial claims on non-residents.

Notice that the difference between GS and D_P can be seen as the stock of net financial assets held by the private sector.

Because any increase of GS must necessarily be funded by an equivalent increase in liabilities somewhere in the economy, GS can only increase if more liabilities come into existence. In other words, any increase in an individual entity's flow of savings (that adds to the stock of GS) can occur in three possible ways: by reducing the flow of some other entity's savings (and thus leaving GS unchanged), forcing some other entity into a higher level of indebtedness), or made possible by some other entity's decision to increase its own level of indebtedness. Only under the two latter circumstances will GS increase. The effect on spending, however, will depend on whether the increase in debt that is funding savings does or does not exceed a preferred or required maximum level of indebtedness. If, say, households attempt to increase GS by creating a reduction of sales and an undesired increase in liabilities by firms, firms will be motivated to cut output and jobs. In other words, when private debtors find it increasingly difficult to service their debts, the desired target of financial claims increases (with deleveraging) and, unless there is a source of additional financial claims (government debt or foreigners' debt), jobs will be lost.

This is consistent with Steindl [7], who explained that when private sector's debt has reached a certain "critical level", the private sector begins to cut spending, triggering a recession. It is also consistent with Minsky [4] and the notion that a spending drop will increase the "weight of speculative and Ponzi finance".

The savings-debt identity (1) describes one key financial constraint and one key spending driver in a monetary economy. The constraint is that the level of gross private savings can only increase at the same rate as overall debt. The spending driver is that any increase in debt (private, public, or foreign) that creates more savings than desired fuels more spending and jobs as long as the savings created by the additional debt are considered in excess of target.

If we now take the desired outstanding stock of savings in the private sector (GS^d) as given,

(2) $$\boldsymbol{GS^d = \overline{GS}^d}$$

then any increase in private, public of foreigners' debt that is funding an increase in GS above GS^d will provide fuel for spending and jobs, and any drop in GS below GS^d will cut down spending and job:

(3) $$\Delta \boldsymbol{J = \alpha\ (GS - GS^d)},$$

where a change in private jobs (ΔJ) is a function (α) of the excess stock of private spenders' gross savings.

The first message of the T-shirt model is that the ultimate source of funding savings is debt. The second message is that jobs are created when the willingness to increase debt exceeds the desire of holding savings, and jobs are destroyed when the desire of holding savings exceeds the willingness to increase debt. Savings are neither good or bad for job creation: They reduce

spending, but as long as they can be funded by liabilities, the saving-driven drop in spending is offset by an equivalent increase in debt-driven spending.

This model can be further extended to include two additional factors. One is the role of the countercyclical feedback effect of a change in output and jobs upon public debt. As output and private jobs change, net government spending will change with progressive income taxes and social programs, and this will affect the flow (and the stock) of financial savings via its effect on public debt. Accounting for this effect means to further consider D_G as a function of a change in jobs: when jobs drop, a countercyclical (automatic) fiscal response will increase D_G and GS, thus narrowing the gap between GS^d and GS, and alleviating the recession.

A second effect is that of income distribution, government spending reallocation, and tax burden distribution. If economic units have different savings targets, as financial claims are redistributed, private jobs may be affected even with no change in overall debt. Thus, for example, a distribution of after-tax income from entities with lower to entities with higher propensities to spend will narrow the gap between GS^d and GS.

VII. A Debt Shortage as the Final Cause of the Eurozone crisis

Taking financial savings for what they are, i.e., financial claims with a debt counterpart, helps put the role of savings in perspective in a monetary economy. The model introduced in the previous section is the monetary economy's alternative to the non-monetary economy's model of saving as a real resource needed for investment. The T-shirt model implies the following statements:

- The stock of private financial claims includes claims on the private sector, claims on the government sector, and claims on the foreign sector.
- To achieve its desired savings target, the private sector must adequately fund it.
- Overall private spending changes in response to whether the private sector deems its savings short or in excess of its target.
- Domestic output and jobs increase with an increased willingness of the private sector (notably, but not exclusively, banks) to expand credit, of the public sector to net issue debt, or of the foreign sector to spend on domestic output by offering its liabilities as payments and as a place where storing residents' savings.

This means that the final causes of growth of real output and jobs towards the economy's potential (i.e., closing the output gap) include the expansion of bank lending, government net spending, and net exports. It also entails that differences in economic units' financial balances are the ordinary condition of a monetary economy. Any policy aimed at real goals (output and jobs) should be focused on understanding how such differences best work towards policy goals, not on forcing a reduction of such differences by treating all differences as "imbalances".

The T-shirt model seems to have predictive power in terms of the difference in performance between the US economy and the Eurozone after 2008. While the U.S. fiscal deficit reached 12,6% and remained above 8% for five straight years, the overall fiscal deficit in the Eurozone exceeded the 3% political threshold only in four years, and never exceeded 6.3%. And when the fiscal deficit in the U.S. has narrowed to below 3%, the U.S. economy has slowed down. It also seems to explain well the disappointing effects of low rates and QE, neither of which has an unambiguous effect on financial savings. And it makes a powerful case for restoring fiscal policy as an active instrument in world economies.

Notice that the argument that public debt may become unsustainable is mute, as any debt is sustainable if the central bank is authorized to use its floating currency to purchase that debt [5]. Monetary financing prohibitions, on the contrary, can threaten public debt sustainability and the real economy. Drawing a parallel with the German crisis of 1931, Bindseil and Winkler [1] explain how such prohibitions, with their consequent draconian austerity measures, intensified the crisis and caused the ruin of the banking system, of the Reichsbank, as well as of the German state and civil society in the 1930s.

In this final section, I will consider some lessons for the Eurozone.

Since the start of the crisis, policies have focused on structural reforms, monetary policy, and fiscal policy. Structural reforms may prove valuable in many ways when they change the composition of government revenue and expenditures in a growth-friendly fashion (e.g., redistributing the tax burden away from labor), tackling corruption, improving administrative infrastructures. Yet, they can hardly provide the debt and the savings needed to restore growth and job creation.

With regard to fiscal policy, ceilings on public debt and deficits, combined with credit-sensitive Eurozone governments, have virtually removed from the table the option of expanding public debt: Those countries that had “fiscal space” took no action, and the others were forced to take action to reduce debt, producing a deeper recession than if government deficits had been left to adjust to cyclical conditions. The outcome of Eurozone fiscal policy constraints that have turned the stopcock of debt in a clockwise direction, shutting off the funding of savings, have left an increase in private debt and/or an increase in claims on non-residents as the only possible sources of savings for Eurozone residents, and thus a possible basis for economic recovery.

The problem, however, is twofold. First, no Eurozone policy exists to foster an increase in either private debt or net exports when growth is sluggish. It may thus be seen as “fortunate” that stagnation became so serious, and the international prices dynamics so contained, that the rate of inflation fell significantly below the ECB target, in 2014, and the prospect of deflation justified the action of the ECB according to its price stability mandate. Then, the ECB slashed interest rates and also engaged in outright purchase programs (of asset-backed securities, covered bonds, and public sector debt), also known as Quantitative Easing (QE), allegedly to encourage bank credit expansion and thus an expansion of private debt.

Second, following the logic of the T-shirt model presented above, the consequences of low interest rates on real output and jobs should be judged by their effects on debt (i.e., actual gross private savings) and on the saving intentions of the private sector. Because they help governments to comply with common fiscal rules, low interest rates may have some limited effects on lowering intended savings if some of the expenses needed to service the debt are reallocated to other, more growth-friendly items. Yet, the distribution of financial savings from lenders to borrowers has ambiguous effects, and the reduced expansion of public debt works in the opposite direction. Only the weak euro has offered some fuel to savings and job creation, as markets reacted to QE by steering the external value of the euro down.

Indeed, the continued emphasis on slashing government debts, and thus private savings, and ongoing deleveraging in the private sector leave savers with no alternative to searching for ways to fund their desired savings through net exports. Yet, being forced to rely on external demand (and thus on the creation of private and government debt abroad) marks a dramatic shortfall to the promise of a powerful single market in Europe that lessens its dependence on foreign buyers, and thus on foreigners' debt. In addition, the current account surplus solution comes at the cost of increasing risk to residents, who accumulate claims abroad, lowers the real consumption per capita, and makes the Eurozone economy dependent on the strength of demand from abroad. Also, as the current account surplus pressure takes hold, a euro appreciation will sooner or later dry up even this last source of funding for European savings.

The current Eurozone's reluctance to let member countries expand their government debt without limit is reasonable. What is not reasonable is the reluctance to expand public debt in some form that would be under the supervision of a shared governance, without this being in the context of a transfer union. This is rooted in a deep aversion to public debt that stems from the view that growth prompted by fiscal deficit is not sustainable, and the Eurozone should be envisioned as a new "Gold Standard" that disciplines governments and fosters prosperity with no support from "monetary and fiscal activism" [9].

As the model above illustrates, there is no saving without debt, and, pleasant or unpleasant as it may be, there is no net private saving without some combination of government and foreigners' debt. If this view is reasonable, then the lack of a set of internal governance instruments that can effectively work to match Eurozone citizens' intended savings is the fundamental concern in the current architecture of the Eurozone and the final cause of a continued stagnation that can be relieved only by vigorous growth outside Europe.

In conclusion, a strong case can be made for reclaiming the fiscal instrument in Europe. This, however, is not without political challenges. Active fiscal policy had ultimately been abandoned for lack of a better mechanism to prevent abuse of a sovereign boundless spending power. Although some of the arguments are in need of a profound review (such as that corruption lives well where there are no fiscal rules—and yet a number of contemporary political scandals prove that corruption lives well even under a balanced budget rule), there are issues to be addressed. Every discussion, however, should begin by acknowledging that fiscal

rules do more harm than good. We habitually accept that central banks manipulate interest rates and redistribute incomes with no political mandate, and engage into corrective policy actions of dubious effects. Designing a "constrained discretion" mechanism that creates sufficient debt (and savings) to close the output gap and support sustainable full employment is a far superior policy strategy than the current policy stance.

Ensuring that the stopcock of debt and savings lets enough fuel into the Eurozone private sector and allows regions to compete for the financial claims in circulation would be enough to stop the widening differences in economic performance among member countries, while reforms may work to further narrow the structural differences among member countries. This is the true quantum leap that the Eurozone needs today.

REFERENCES

[1] Bindseil, U., and Winkler, A., "Dual Liquidity Crises: A Financial Accounts Framework," Review of International Economics, 2013, pp. 151-163.

[2] Goodhart, C. A. E., "The Two Concepts of Money: Implications for the Analysis of Optimal Currency Areas," European Journal of Political Economy, 1998, pp. 407-32.

[3] Keynes, J. M., "A Monetary Theory of Production," in Moggridge, D. (ed.) The Collected Writings of John Maynard Keynes, vol. XIII, London: Macmillan, 1973, pp. 408-11.

[4] Minsky, H., "The Financial Instability Hypothesis," Levy Economics Institute, Working Paper No. 74, May 1992.

[5] Mosler, W., "Soft Currency Economics II," Kindle edition.

[6] Smith, A., "An Inquiry into the Nature and Causes of the Wealth of Nations," Edwin Cannan (ed.), in 2 vols., London: Methuen, 1904 (1776).

[7] Steindl, J., "The Role of Household Saving in the Modern Economy," Banca Nazionale del Lavoro Quarterly Review, 1982, pp. 69-88.

[8] Terzi, A., "The Independence of Finance from Saving: A Flow of Funds Interpretation," Journal of Post Keynesian Economics, 1986-87, pp. 188-97.

[9] Terzi, A., "When Good Intentions Pave the Road to Hell: Monetization Fears and Europe's Narrowing Options," Levy Economics Institute of Bard College, 2014.