

# *The Eurozone crisis: A debt shortage as the final cause*

Contribution to the panel  
*The Eurozone crisis: Fiscal profligacy or capital flows as final causes*

Andrea Terzi

Franklin University and Levy Economics Institute

andrea.a.terzi@gmail.com

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**Abstract**— *This paper proposes a different interpretation of the Eurozone crisis, seeing as its “final” cause European policies which have forced private savings down too low.*

*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. If member countries were to comply from now on with present fiscal and macroeconomic rules, real growth and job creation would not be restored. The final cause of economic drag in the Eurozone must be searched for within those same rules.*

*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 private gross 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. Differences in economic units’ financial balances are the ordinary condition of a monetary economy, and policy should be aimed at supporting those differences that best work towards policy goals, not forcing a reduction of such differences by treating them as “imbalances”. Fiscal rules leave the Eurozone with two fragile and risky alternatives: building up more private debt or counting on a permanently high flow of net exports.*

## I. INTRODUCTION

How do we “provoke new economic thinking”, as the INET mission advocates? In the social sciences, it is often a good idea to start by revisiting past ideas. This is particularly recommended in the area of economics, where the beliefs that become well established and “orthodox” are not always “the best-known answers” of the time. When facing what INET calls “the deficiencies in our outdated current economic theories”, we should first reconsider earlier ideas that have been either forgotten or misunderstood. The development of new economic thinking to “engage the challenges of the 21st century” must build upon the intellectual history of economics. Unfortunately, this is less and less practiced today, with the complicity of the downgrading of the history of economic thought to an optional course in university economics curricula.

The contribution to the INET mission of this presentation is inspired by two classical masters of economics, Adam Smith and John Maynard Keynes, who together offer one key to the interpretation of the Eurozone crisis today. From Smith, I will take a notion which is so beautifully and concisely expressed on the first page and then continues throughout the five books of The Wealth of Nations [5]: 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, people want 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 the achievement of real prosperity.

From Keynes, I will take the belief, running throughout his work, 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]. Keynes is telling us that agents making decisions in an economy of money contracts and uncertainty do

care about 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 really 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 makes it clear what the policy goal should be. Keynes makes it clear what the instruments used to achieve that goal should be.

When we consider the well-established, orthodox economic theories of our times, we find them skewed towards a vision that economic agents only care about real costs and real benefits, monetary values are just nominal magnitudes that do not change the process of decision-making except by derailing it or fooling it temporarily, and theory should therefore capture the real fundamental relationships in the economy, where money is a convenient means of payment that becomes an inconvenient source of disturbance only when it is badly managed by its issuer. This is the dominating model in macroeconomics. It also supports the view that only structural reforms can raise long-run growth and that there are no monetary shortcuts to prosperity. Taking Adam Smith's vision to an extreme, these models are "*plus royalistes du roi*".

In the macro-policy debate, considerably revived during the global economic and financial crisis, we now find another family of models, taking a more balanced position between Smith's vision (real costs and real benefits ultimately matter in economics) and Keynes's vision (monetary values matter because they steer agents' decisions in a monetary economy, and monetary decisions affect real outcomes). Indeed, models in this family (such as Godley's [1]) proved more capable of foreseeing the financial fragilities that were building up before the 2007 financial crisis, the spillover on growth and employment in 2008, and the relative effectiveness of policies adopted since then, notably in Europe and in the United States.

This contribution falls in the latter tradition: Sustainable and sustained growth of output and jobs not only requires continuing efforts to improve and enhance growth-compatible institutions, but also needs monetary conditions that do not obstruct the monetary flows that support real growth. As I will show, the Eurozone policy mix is creating adverse monetary conditions for growth, and it is far from providing effective support for real output and jobs. Also, the structural actions that Europe regards as priorities for relaunching the market-integration process may prove insufficient to strengthen the single market.

## II. THE EUROZONE CRISIS

I would like to begin by first scrutinizing the title of this session in order to clarify what kind of approach I am taking in discussing the topic of this session. I always warn, when I teach, that one tricky challenge with learning economics is the use of common vocabulary words (such as money, savings, income, or wealth) to which one must attach precise definitions that might be different from ordinary language. Not infrequently, however, economists are the first to attach different and sometimes even contradictory and inconsistent definitions to the same word, so before proceeding I want to make it clear what I mean by each of the terms of this discussion.

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 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 outright purchases (Outright Monetary Transactions) of government debt in secondary markets if needed.

It was a crisis 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. The 2015 "public sector asset purchase programme" (PSPP) has addressed the problem of the divergence of borrowing costs for all Eurozone countries that are eligible for PSPP.

There is also a **crisis of convergence, integration, and governance** in Europe, and in the Eurozone specifically. This, in turn, can be viewed from two angles. One may choose to stress the lack of a coordinated, institution-based governance or to stress instead the inadequate governance at the level of individual countries facing common rules (notably, the Excessive Deficit Procedure and the Macroeconomic Imbalances Procedure). In either case, the developments since 2010 seem to reflect the fatigue of a monetary union embracing countries and regions that are different in many respects, notably in their economic and institutional structures. If the process of convergence and integration slows or reverses, then Europe may be forced into making a hard choice between moving to a 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 governance would not entail such grave consequences if Europe were not suffering from another crisis: a long and acute **economic crisis** that created stagnation and validates the definition of the Eurozone as a drag on the world

economy, with adverse effects on the wider 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, a project of increasing harmony amongst the peoples of Europe. But the project is still failing on both counts, as the crisis has deepened divisions and mutual mistrust, threatening the whole process.

Whether this is the outcome of bad design or the failure to take the timely steps needed for making the economic and monetary union an engine for prosperity is a different question. Today, it is in the interest of Europe that, since the single currency has been set in motion, it must not fail.

Before moving on to my analysis of the monetary conditions needed for prosperity, I will consider two widely discussed monetary flaws, indicated in the title of this session: “fiscal profligacy” and “capital flows”. Again, before proceeding, I’m interested in first clarifying what each means.

### III. “FISCAL PROFLIGACY” AS A FINAL 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 32 “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 and calling for local corrections. Ending fiscal profligacy in non-complying countries includes cuts of ineffective discretionary spending, improved effectiveness of tax collection enforcement, and a better institutional framework that encourages economic initiative.

These are all serious policy issues: lack of quality control of government spending, high degrees of tax evasion, and poor public infrastructure that stifles economic activity are all cases of “fiscal negligence” (rather than “fiscal profligacy”) that do affect the real prosperity of a nation. And they are particularly insidious because they don’t necessarily show up in fiscal deficit statistics.

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. Remember Smith? Let’s not lose sight of real issues by observing monetary figures. The fight for a more efficient government sector can hardly be conducted

on the basis of containing deficit figures. Large deficits do not and cannot signal fiscal negligence.

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”. There is hardly anyone left today who believes that austerity is the answer to rising deficits and debts. We have discovered (or should I say re-discovered?) 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.

If one cannot define as “profligate” the government of a country whose fiscal deficit reflects cyclical conditions, then one can perhaps call a government “profligate” if it has accumulated an excessively large public debt overhang that limits its fiscal space and impedes the functioning of automatic stabilizers. In this modified definition of “profligacy”, 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.

Here, however, the “fiscal profligacy” argument faces another challenge: lacking proof of what the debt/GDP ratio threshold is 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 fluctuate with the cycle.

For some time, it was left to financial markets to decide which Eurozone country’s debt was “too high”. With the post-2012 ECB policies, it is EU rules that classify which country’s debt is “too high”. Any country caught in such a definition loses even the automatic fiscal flexibility to counter a recession.

### IV. “CAPITAL FLOWS” AS A FINAL CAUSE

“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 the acquisition abroad of bank deposits, and other financial assets. These are all claims on non-residents. For the purpose of this presentation, I would prefer to use the terms “financial flows” or “cross-border financial claims”.

Secondly, as in every market transaction, every financial flow is the counterpart of another flow. The only difference with international transactions is the political border between the two participants. The other flow can be either a trade or income flow (with the financial flow being the payment for the settlement of the transaction) or another financial flow in the opposite direction (such as a purchase of a financial asset abroad), in which latter case the two opposite flows balance each other.

This means that only payments for trade or income create a mismatch of financial flows. And when a financial flow is countered by a real flow (of goods, services, or income) and is not matched with an equal and opposite financial flow, the resulting current account imbalance produces net positive (or net negative) financial flows. Net financial inflows (and net financial outflows) are the corollary of an imbalance in real flows.

In the case of a net importer country, because imports entail transferring a claim on a domestic unit to foreigners, the country's liabilities to non-residents increase, and the country is considered a "net borrower". Likewise, a net exporter country is considered a "net lender" as it acquires claims on non-residents. 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, the "net lenders" sell off those claims, and the value of those claims falls. When this happens between countries using different currencies, it means 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 will occur when banks of the "net lender" region perceive that credit risk is rising. Normally, banking supervision avoids regional concentration of risks, and should a regional credit-risk crisis erupt anyway, then national deposit insurance comes into play. In the Eurozone during the crisis neither of these two safety valves were (and still aren't fully) in place: Different bank supervisors and a non-credible deposit insurance caused "capital flight", or 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 in the mess. 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, not the largest fiscal deficits, of the Eurozone, 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 created export flows from Germany to the Eurozone periphery. Germany accumulated claims on the periphery that were just fine until the global crisis began to shake confidence in the euro and produce redenomination risk.

The other is a "financial-flows story" that begins with **Germany embarking on heavy financial investment in periphery financial assets** that offered a slightly higher return disconnected with 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 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. The 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.

Apart from 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 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

Discussing spending and its opposite, saving, is another tricky exercise in macroeconomics. The notion of savings, in particular, is one that most textbooks handle with a good degree of confusion. To the recurrent question, “Are savings good or bad for the economy?” textbooks offer two contrasting 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 recession, 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. Personal saving ( $S_P$ ) is defined as follows:

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

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.

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

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

Because National saving ( $S$ ) is typically defined as the sum of Personal saving ( $S_P$ ) and Government saving ( $S_G$ ), with the latter being the negative of the Government deficit,  $S$  is defined as follows:

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

While the above equations are accounting identities reflecting how different items are arranged in national accounts, they also lend themselves to a narrative that misguidedly supports the following causality statements:

- Personal saving can be used to finance business investment, new government debt, or 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 we think it does**. It 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 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 financial savings we are also discussing debt: Every penny saved is someone else’s liability. It also means that **in a monetary economy savings do not fund: They need to get funded.**

The relationship between financial savings and debt can be analyzed using a **financial (flow-of-funds) system of accounts** [7]. 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 must equal the sum of all expenditures, financial savings 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:

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

Or:

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

where 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 financial balance.

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 non-resident liability.

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:

$$\text{Gross private financial claims} = \text{Gross private debt} + \text{Net government debt} + \text{Net financial international position} \quad (6)$$

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

A portion of privately-owned financial claims is typically stored, for example in pension funds or private portfolios, while another portion is effectively in circulation, as producers (i.e., workers and firms) compete for financial claims in circulation by trading their labor or their output.

It is in the producers’ interest to increase financial assets via sales (of output or labor) rather than by having their clients or employers increase their savings. When producers need funds on top of what they get through sales, 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. Should their clients or employers save more, they would have a harder time getting financial claims, and this would force them to cut their stock of financial claims or increase their debt [7].

## VI. SAVINGS, DEBT, AND A T-SHIRT MODEL OF SPENDING AND JOB CREATION

In this section, I will elaborate on a simple model of job creation. Physicists say that a theory of the universe is not credible if it cannot be condensed on a T-shirt. In a similar fashion, this is a T-shirt model of private job creation in a monetary economy.

Assuming that government jobs are given by a political decision, and assuming no creation of government jobs in the period of reference, then a change in private jobs can be explained by overall spending. This T-shirt model aims to explain what fuels spending.

For a single economic unit, a decision to spend lowers its net stock of financial assets and concurrently increases the net stock of financial assets owned by another unit. We should reasonably

assume that each unit's spending is influenced by that unit's desire to accumulate, or diminish, over the period of reference, its stock of financial claims [6]. Spending will increase when the unit's financial savings exceed its intended savings and fall when the unit's financial savings are short of intended savings.

By aggregating all private economic units, overall spending can be said to depend on the difference between the stock of actual gross savings (GS) and the intended (desired) stock of gross savings (GS<sup>d</sup>). Thus, a change in private jobs ( $\Delta J$ ) is said to be a function ( $\alpha$ ) of the excess saving (or saving shortage, when negative) of private spenders:

$$\Delta J = \alpha (GS - GS^d) \quad (7)$$

This states that in a monetary economy an increase of private savings above target provides fuel for spending and private job creation.

If we take the intended level of gross private savings (GS<sup>d</sup>) as given,

$$GS^d = \overline{GS^d} \quad (8)$$

then job creation is a function of the actual stock of gross savings: When gross savings are in excess of the intended amount, private spenders will create more jobs, and when gross savings are short of the intended amount, private spenders will destroy jobs.

The next and final question this model will address is how does the current stock of savings change. As discussed in the previous section, private gross saving reflects private, government, or foreign debt:

$$GS = D_P + D_G + D_F \quad (9)$$

where  $D_P$  is gross private debt,  $D_G$  is net government debt, and  $D_F$  is net non-residents (foreign) debt. If the actual stock of savings provides fuel for spending and jobs, and if the actual stock of savings can increase only when either of its counterparts changes, then **the ultimate source of funding savings and jobs is debt**. Assuming the savings target as given, the actual amount of savings will only be higher if debt is higher. Any increase in debt (private, public, or foreign) creates more spending and jobs as long as the savings created by the additional debt are perceived as being in excess of target.

This model can be further extended to include three additional factors:

a) The effect of private leverage on intended savings: When private debtors find it increasingly difficult to service their debts, the desired target of financial claims increases (with deleveraging) and, unless there is another source of financial claims (government debt or foreign debt), jobs will be lost

b) The countercyclical feedback effect of a change in output and jobs on 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.

c) The effect of income distribution, government spending reallocation, and tax burden distribution: Because economic units have different savings targets, as financial claims are redistributed, private jobs may be affected even with no change in debt.

## 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:

- Overall private spending changes in response to whether the private sector deems its savings short of or in excess of its target.
- To achieve its desired savings target the private sector must adequately fund it.
- The stock of financial claims always matches the stock of liabilities of the private sector, the government sector, and the non-residents sector.
- 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 private sector to keep unspent claims on the non-residents sector.

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 such differences as "imbalances". 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 [4].

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, such as changing 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.

This has 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. No Eurozone policy exists, however, to foster an increase in either private credit or net exports when growth is sluggish, except under conditions of deflation. 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 last year. This justified the action of the ECB according to its mandate. Then, the ECB slashed interest rates, allegedly to encourage bank credit expansion and thus an expansion of private debt.

The consequences of low interest rates on real output and jobs should be judged by their effects on debt (i.e., actual gross 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.

In a deflationary context, the ECB has also engaged in outright purchase programs (of asset-backed securities, covered bonds, and public sector debt), also known as Quantitative Easing (QE). Markets have reacted to QE and steered the external value of the euro down. Although a weak euro may offer the greatest fuel contribution to savings and job creation under current Eurozone policy constraints that have turned the stopcock of debt in a clockwise direction and shut off the savings supply, its consequences for the Eurozone current account remain uncertain in so much as it comes at the cost of increasing risk to residents who accumulate claims abroad and also makes the Eurozone economy dependent on the strength of demand from abroad.

The continued emphasis on slashing government debts, and thus private savings, leaves savers with no alternative to searching for ways to fund their desired savings through net exports. Yet, being forced to rely on external demand (i.e., on the creation of private and government debt abroad) marks a dramatic shortfall to the promise of a powerful single market in Europe that would be the target of foreign producers, rather than trying to target foreign consumers.

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. Deep aversion to public debt 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” [8].

As the model above illustrates, pleasant or unpleasant as it may be, there is no saving without debt, and there is no net private saving without some combination of government and foreign 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.

The challenge that Europe is facing is political, and it is the question of how to design a mechanism that creates sufficient debt (and savings) to support sustainable full employment. A centralized mechanism is preferable to a decentralized one such as raising the cap on EU’s countries’ government deficits/GDP ratios. 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.

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