A T-shirt model of savings, debt, and private spending: lessons for the euro area

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Notwithstanding the modified ECB practice that saved the day, the euro area is failing to restore economic prosperity. The problem is visibly political, yet an effective solution must be economically viable. This essay articulates the reason behind the prolonged deflationary bias of euro area policies by means of a simple ('T-shirt') model, where private spending depends on desired savings and sustainable indebtedness. This savings–debt constraint means that any policy that inhibits debt also inhibits financial savings, spending, and jobs. After providing a solution to the conundrum of the consequence of savings in a monetary economy, this essay makes a case for reclaiming the fiscal instrument. The EU Commission's belief that it is possible to create jobs without creating new debt underscores a serious conceptual fault and a delusion that the savings–debt constraint to spending can be ignored. As long as policy-makers defy the savings–debt constraint, the euro area will continue to live dangerously.

1 INTRODUCTION: THE TWO PHASES OF THE CRISIS

In the year 2010, 'eurozone crisis' became the catchphrase to describe the condition of Europe's Economic and Monetary Union (EMU) living through its first existential crisis as the risk of an operational break-up materialized. In that same year, the US economy was on its way to recovering, albeit weakly, from the Great Recession. By contrast, recession in the euro area (EA) had laid bare some fundamental vulnerabilities, questioning the very survival of the single currency. One of the intended pillars of monetary union was posing a vital threat to the operational sustainability of the single currency. This was the practice that the Eurosystem (that is, the European Central Bank (ECB) and the national central banks of those countries that had adopted the euro) would not be an outright buyer of national governments' debt, a practice that was understood to be consistent with the monetary financing prohibition stated in the EU Treaty.[1]

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1. The prohibition on monetary financing is laid out in Article 123 of the Treaty on the Functioning of the European Union (TFEU).

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That this would sooner or later pose an existential threat to the euro had been little under-stood before the crisis burst upon the scene.[2] In 2010, with the first casualty (Greece) in the emergency room and the first economic adjustment programme (with financial package) approved, the Eurosystem eventually became an occasional buyer of government debt.[3] Two years later, with three more casualties (Ireland, Portugal, and Spain) and a systemic collapse in sight, the ECB added the newly crafted Outright Monetary Transactions (OMTs) to its toolbox. This meant that the ECB had formally become ready to be an unlimited, albeit conditional, outright buyer in the secondary market for EA government debts.[4] The introduction of OMTs was the way to restore systemic liquidity buffers in a monetary system that had become unsustainable,[5] while remaining consistent with the monetary financing prohibition laid down in the Treaty.[6]

As events during the crisis unfolded, and depending on the narrative about its causes, several different meanings have been attached to the notion of the eurozone crisis. This has been seen, alternatively, as the unwinding of intra-euro lending and borrowing, the con-sequence of private credit bubbles, the product of unsustainable public debt, the failure of inadequately supervised banking and financial institutions, and, most notably, as a double-dip recession followed by an unusually weak expansion combined with a visibly inadequate policy (and political) response. Today, 6 years after the crisis erupted, and notwithstanding the modified ECB practice that saved the day, the eurozone is still visibly failing to enact sustainable policies that can effectively restore economic prosperity.

Accordingly, the eurozone crisis has been characterized by two distinct phases. Between 2010 and 2012 the monetary union was in jeopardy of undergoing an operational breakdown up until the change in the operational practice in the market for public sector securities, complemented by the banking union reform.[7] Since 2012, the problems have been the continuing sluggishness of the real economy, the acute lack of demand, vulner-ability to internal and external shocks, and, ultimately, the risk of political implosion. While the ECB has successfully reclaimed one indispensable tool to operationally manage the euro, the deflationary bias of the euro area has not gone away.

Effectively, Europe's economic performance has been vastly disappointing ever since the launch of the euro. The EA (now comprising 19 countries) has been growing at an annual average of 1.1 percent since 1999, compared to 1.8 percent in all OECD countries, and 3.7 percent in the world economy.[8] Today, unemployment remains 3.8 percentage points above the OECD average. Considering the impact of the global crisis, annual average growth in the EA between 2008 and 2014 was a negative 0.25 percent, compared to a posi-tive 1 percent in the entire OECD. This portrays the failure of an economy that, nearly one

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2.   Prior to the EMU, the most common concern was whether or not the monetary union would be, or would soon become, an optimal currency area. There were notable exceptions among econ-omists (such as Goodhart 1997), as well as market analysts (such as Mosler 2001), who warned that the break between money and governments would make public finances credit-sensitive and ulti-mately destabilize the system.

3.   Through the securities markets programme.

4.   The creation of OMTs was the operational completion of Draghi's well-known 'whatever it takes' statement (26 July 2012).

5.   As Bindseil/Winkler (2012: 4) explained soon after, 'a central bank that operates under a paper standard with a flexible exchange rate and without a monetary financing prohibition and other limits of borrowings placed on the banking sector is most flexible in containing a dual liquidity crisis.'

6.   In June 2015, the EU Court of Justice ruled that the OMT programme is compatible with EU law.

7.   Albeit incomplete, the banking union reform initiated a process of centralization of banking policy and supervision.

8.   Sources: OECD and World Bank.

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generation after its historic monetary reform, has failed to live up to its affirmed goals.[9] Painfully low incomes and high regional unemployment, especially among youth, have created a fertile breeding ground for resentment towards national governments and for skepticism about the euro and European integration at large.

A group of European economists who undersigned a Rebooting Consensus Authors document[10] have expressed a true concern that growth and unemployment in the eurozone 'are miserable and expected to remain miserable for years,' that 'Europe's youth have been or will be jobless during the critical, formative years of their working lives,' and that 'economic malaise is feeding extremist views and nationalistic tendencies just when Europe needs to pull together.' In their analysis of the eurozone crisis, however, they do not differentiate between its first and second phases. Their consensus narrative focuses primarily on the first phase and upon the policy failures that 'allowed the cross-border imbalances to get so large with such little notice.' In their view, the fact that the ECB was 'explicitly forbidden' from lending to eurozone governments has been one of the 'amplifiers' of the crisis. The crisis, in their view, was ultimately caused by the unwinding of unsustainable imbalances in public and private debt, as well as in cross-border financial flows driven by national savings–investment gaps. Accordingly, they underscore the important issue of containing inter-regional differences in economic performance, trade flows, and jobs,[11] but lack a satisfactory analysis of the prolonged deflationary bias that has become apparent in the second phase of the crisis.

While it is a widely held view that the eurozone crisis is far from over and more needs to be done to fix it, an agreement on priorities is far off. The Rebooting Consensus Authors have argued that it is 'impossible to agree upon the steps to be taken without agreement on what went wrong.' While such an appeal is reasonable, a constructive narrative should make a sharp distinction between the causes that led the eurozone to the brink of operational implosion and the long-time issue of slow growth. Missing in their narrative is an explicit account of the reasons why spending remains subdued in the second phase of the eurozone crisis, as well as an account of how current fiscal constraints add to the vulnerability of the euro area. In the United States, where such constraints do not exist, overall spending returned to growth more quickly.[12] By contrast, fiscal relief has proved impracticable in Europe, where fiscal balances have been austerely constricted.[13]

Also, the 'Five Presidents' Report' on Completing Europe's Economic and Monetary Union[14] does not substantially modify the fiscal 'discipline' approach. Its emphasis is upon the notion that '[e]uro area members depend on each other for their growth' and

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9.   The goals of the EMU, as stated in Article 3 (TFEU), include balanced economic growth, full employment, social progress, and technological advance.
10.   Baldwin et al. (2015: 1–2).
11.   This is again the question of the EA not being an optimal currency area where fiscal transfers, or specific coordination policies, would help to balance growth and job creation in different regions. Contrary to early hopes, the launch of the EMU did not accelerate convergence and has instead exacerbated the differences.
12.   At least until the automatic spending cuts to US federal spending (known as budget sequestration) started to kick in.
13.   The concern for a fiscal policy deflationary bias in the monetary union had been raised well before the launch of the euro. Godley (1997), for example, had argued that the fiscal stance of Europe would 'impart a disinflationary bias that locks Europe as a whole into a depression it is powerless to lift.'
14.   Juncker et al. (2015).

upon formalizing the process of convergence as a condition for boosting growth and jobs. While the Macroeconomic Imbalance Procedure would detect deviations from the common standards and provide guidance to reform implementation, an as-yet-undefined shock absorption mechanism of fiscal stabilization would be available to EA member states only conditionally 'to avoid moral hazard and ensure joint fiscal discipline.'

While convergence is a desirable, longer-term process, the most urgent challenge that Europe is facing today is that of strengthening domestic demand in the context of weak recovery, a high output gap, and high unemployment. Countercyclical fiscal policies are barred by the fact that government debt in the countries that would need them most is too high for European rules, and the EU ('austerity') recommendation that those countries restore fiscal space by increasing savings in the public sector exacerbates the slowdown. Without fiscal stimulus, the strategy to strengthen domestic demand primarily rests upon boosting consumer and business confidence, credit supply, and inflation expectations, as well as upon structural reforms aimed at boosting competitiveness. This strategy is consistent with a well-established, orthodox view of policy effectiveness, according to which the boosting of confidence and of inflation expectations will close the savings–investment gap and fuel more spending, the boosting of credit supply will channel savings into investment expenditure, and the boosting of competitiveness will increase national savings.

In economics, however, orthodox beliefs are not always the 'the best-known answers' of our time, and in this essay I will cast a different interpretation aimed at capturing what we know about the link between saving, spending, and growth, as well as by combining two 'best answers' from two classic masters of economics, Adam Smith and John Maynard Keynes.[15] One key lesson from Adam Smith is that the wealth of a nation is measured by its power to acquire real, not monetary, values. Correspondingly, one key lesson from John Maynard Keynes is that real economic outcomes are shaped by decisions that agents make on the basis of financial stocks and expected monetary flows. These two views are highly complementary. Smith warns us that policies should aim at the goal of raising the growth of real output and employment and consider financial conditions as wholly functional to achieving real prosperity. Keynes warns us that pursuing Smith's goals needs effective monetary management to avoid financial mishaps that ultimately affect real prosperity. The combined lesson of Smith and Keynes is that effective monetary management is a condition for achieving the purpose of policy – to wit, real prosperity.

This essay continues in two sections. Section 2 elaborates on a simple ('T-shirt') model of private spending in a monetary economy, where this is a function of the actual and the intended stock of 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 source of savings is debt, then any policy that inhibits the formation of debt also inhibits the formation of financial savings, spending, and jobs.

Section 3 delineates lessons for the euro area. If debt (private and public) is the final fuel for spending, then European rules produce one chief inconsistency that precludes durable policy success, irrespective of any genuine and well-intentioned efforts to muddle through the crisis by enforcing such rules. The self-imposed cap on public debt seriously inhibits the ultimate source of private savings and cripples policy effectiveness in sustaining an adequate rate of private spending and saving, leaving the euro area with two equally

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15.   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.

risky alternatives: building up more private debt or counting on a permanently high flow of net exports. As long as a cap on public debt remains, the euro area will continue to live dangerously and remain vulnerable to shocks.

Section 4 provides concluding remarks.

2 A T-SHIRT MODEL OF SAVINGS, DEBT, AND PRIVATE SPENDING

2.1 The difference between real and financial savings

Discussing spending and its opposite, saving, is a tricky exercise in macroeconomics. The notion of savings, in particular, is one that economists often handle with a good degree of confusion. To the question, 'Are savings good or bad for the economy?', most textbooks offer two contrasting answers, often presented in two different chapters. When they explain the neoclassical growth model, savings are the source of funds for investment and thus a driver of growth. When they discuss the Keynesian model of aggregate demand and supply, a higher propensity to save becomes a drain on demand and thus a drag on growth. Freshmen 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.

The same ambiguity applies, correspondingly, to savings policy. On the one hand, 'excessive' savings are considered a cause of sluggishness, and policies should thus encourage less saving and more spending. Changes in the tax structure may redistribute income from the low-spending-propensity population (the rich) to the high-spending-propensity population (the poor). Other policy practices include attempts to boost confidence to lower thrifty attitudes driven by excessive precaution, or raise inflation expectations.[16] On the other hand, a 'shortage' of savings is believed to be a cause of low investment and thus stagnant potential output, and policies should offer incentives to save. And because raising potential output (via higher savings) appears to be a goal with a longer-lasting benefit than simply ending a recession (via lower savings), most countries choose to support higher savings via tax advantages for not spending personal incomes and postponing consumption.[17] In this same long-run context, increasing 'national' savings has long been considered a desirable policy goal. Yet, the solution to the conundrum about the consequence of savings and the appropriate savings policy must be sought elsewhere, and a good place to start is by investigating the way in which savings are defined and measured.

It is commonly agreed that what a single entity saves every year is the amount of after-tax income that has not been spent on output. This flow, however, can be measured in two different ways, depending on whether or not one differentiates between spending for 'consumption' and spending for 'investment.' If one does differentiate, the amount of after-tax income not spent on consumption in a year is regarded as a source of funds for both the acquisition of real assets (that is, output that is not for consumption, such as business equipment, inventory, or residential property) and the net acquisition of financial assets (claims denominated in units of the currency of account or in foreign currency, such as a deposit balance, a Treasury security, or a corporate bond). Thus, for a single entity,

16.   This is viewed as the problem of driving real interest rates below zero to eliminate 'excess' savings by lowering interest rates to the lower bound and targeting a higher-than-current rate of inflation.

17.   Savings policies have supported the growth of the wealth management industry.

the flow of savings consists of two components: real savings, or the net addition to the entity's stock of real assets; and financial savings, or the net addition to the entity's stock of financial assets. On the other hand, if one does not differentiate between spending for consumption and spending for investment, the annual amount of after-tax income (when both current and capital expenditures are deducted) equals the latter component only, namely the net acquisition of financial assets, or the entity's flow of financial savings.

2.2 Savings in national accounts

When we investigate savings in the overall economy, one common measure offered by national accounts statistics is personal saving (S_P). This is defined as follows:

$$S_P = National\ income - Taxes - Consumption. \tag{1}$$

This definition visibly depends on the classification of output for consumption as opposed to output for investment. Personal saving in (1) is obtained by subtracting the value added in the production of output for consumption from after-tax national income, where 'national income' is the value added in the production of all output, that is, it is being earned by producing all output. Recalling the components of national income,

$$National\ income = Consumption + Investment + Government\ spending \\ + Current\text{-}account\ balance, \tag{2}$$

the definition of S_P may be rewritten as follows:

$$S_P = Investment + Net\ government\ spending + Net\ non\text{-}residents'\ spending. \tag{3}$$

Notice that net government spending is the difference between government spending and taxes, and net non-residents' spending is the nation's current-account balance.[18] Identity (3) measures personal saving as the sum of the value added in the production of new real assets (investment) plus the newly accumulated financial claims on the public sector and the newly accumulated financial claims on the foreign sector.

Contrary to one ordinary interpretation of identity (3), personal saving (S_P) does not measure what aggregate private (resident) economic units have added to their stock of financial savings – which is what we would normally identify as 'savings available for investment,' or 'loanable funds.' Instead, S_P is a measure embracing two components: the value added in the production of new investment goods and the net flow of financial savings. Because personal saving as defined in identity (3) includes the investment component of output, its size depends on accounting definition. Consider, for example, when a country implementing ESA 2010 guidelines revises national accounts by changing 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 a revision entails the definition of investment output being bigger, and personal saving being correspondingly revised upwards. Personal saving is revised upwards as a result of a modified accounting definition, with no change in monetary and financial flows and, notably, no change in private financial savings.

Because S_P concerns the consolidated private resident sector, any financial assets held by individual private entities against other private entities' liabilities is netted out. Thus,

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18.   This is the difference between the export and the import of goods, final services, and productive services.

net private financial assets must be claims against the other two economic sectors: the public and the foreign sector.

The claims on the public sector equal net government spending, namely public sector spending on the private sector's output less taxes paid. This is the difference between the financial assets that the private sector has earned from government spending and the financial assets it has lost from taxes, to wit, government deficit. Should the government run a surplus instead, the stock of private financial savings would be diminished by the amount of the surplus.

On the other hand, the claims on the foreign sector equal net non-residents' spending, namely non-residents' spending on the private sector's output less their revenue. This is the difference between the financial assets that the private sector has earned from exports and the financial assets it has lost from imports, to wit, the current-account surplus. Should the nation run a deficit instead, the stock of private financial savings would be diminished by the amount of the deficit, as financial assets are transferred to the ownership of foreigners, or the stock of debt owed to foreigners is augmented.

Net private financial savings thus equal the net accumulation of the financial claims of the consolidated private sector against the public and the foreign sector:

$$\textit{Net private financial savings} = \textit{Net government spending} \\ + \textit{Net non-residents' spending}. \tag{4}$$

Thus, (3) may be further written as follows:

$$S_P = \textit{Investment} + \textit{Net private financial savings}. \tag{5}$$

Identity (5) illustrates that personal saving includes the two components of real and financial assets.

We must be careful to handle this accounting relationship correctly. An example of not doing so is when a deficit of the government sector is said to absorb private savings, thus subtracting funds from other uses. If the reader has carefully followed the logic so far, such a claim should immediately appear as careless, as the private sector must accumulate more financial assets the larger the public deficit is. Every time the private sector earns more income from the government than it pays back in taxes, its financial savings are augmented, except if the private sector chooses to use those financial assets for net imports from abroad, in which case the financial assets acquired from government deficit spending are transferred to foreign ownership.

Another popular definition of overall savings derived from national accounts is national saving (S_N). In national accounts, this is defined as the sum of personal saving (S_P) and government saving, where government saving is the opposite of net government spending.[19] Accordingly, national saving is defined as:

$$S_N = S_P - \textit{Net government spending} = \textit{Investment} + \textit{Net non-residents' spending}. \tag{6}$$

National saving thus includes the value added in the production of output for investment and the financial claims of residents on non-residents. The difference from personal saving is that, here, not only are the financial assets and liabilities within the private sector netted out, but the financial assets of the private sector as a whole against government liabilities are also netted out. Unsurprisingly, the net national financial savings of the consolidated

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19.   The government saves when its net spending is negative, namely when running a surplus.

nation as a whole must equal the net accumulation of financial claims on non-residents. This equals net non-residents' spending, to wit, the nation's current-account surplus:

$$Net\ national\ financial\ savings = S_N - Investment = Net\ non\text{-}residents'\ spending. \quad (7)$$

We must be equally careful in handling this second accounting relationship correctly. An example of not doing so is when a country running a positive current-account balance (surplus) is said to be a country that is using savings that have not been invested domestically to make loans to foreigners who buy the output of the nation. Again, if the reader has carefully followed the logic so far, such a claim should immediately appear as careless, since the nation as a whole will accumulate net financial assets (that is, be a 'net saver') only by selling more output or productive services abroad than it imports. Just like personal saving, national saving measures the acquisition of both real and net financial assets and does not measure funds available for investment or lending. Net exports are not the consequence of pre-existing available funds that the nation is lending. In fact, the opposite is true: by selling abroad more than it imports, the nation acquires new savings that would not have been otherwise available![20]

2.3   Private financial savings require (rather than provide) funding

The point that matters here is that both personal saving and national saving are hybrid measures combining real and financial assets. Real assets are that portion of output that we define as not being consumed (by some definition) in the current period of observation. Financial assets are claims on other economic entities that holders regard as their current stock of financial savings. They are the other side of debt.

Thus, on closer scrutiny, the widespread narrative about saving being a source of funds for investment suits only a non-monetary, or real-exchange, economy where saving can only be a real asset. Indeed, when people save in the form of a real commodity, like corn, the decision to save is a fully volitional 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. Saving in the form of a real asset reflects the individual decision not to consume 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.

By contrast, financial savings in a monetary economy are not real quantities that anyone can independently own, like corn or gold or a collection of rare stamps. Financial saving is an act that reflects on others in the form of a financial claim. Unlike the ownership of a real asset, financial saving always appears as a financial relationship, a claim (that is, an asset) of one economic unit upon another, and any change in savings must entail a change in the relationship between the 'saving' unit and the entity supplying the corresponding liabilities.

To sum up the results so far, financial savings consist of financial assets that must be the counterpart of private, public, or foreign (that is, non-resident) liabilities. They may be bank notes, bank deposits, or other financial assets issued by the private, the public, or the foreign sector. Because financial assets can exist only against some other entity's

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20.   Equivalently, a country running a current-account deficit is often said to be a country that is saving less than what it spends on investment and borrows the difference from abroad. Yet, accounting logic states that a nation running a current-account deficit is using financial assets to net import from abroad.

liabilities, they can be made possible only as long as some entities issue liabilities. A bank note and a bank's balance at the central bank is a central bank's liability; a bank deposit is a bank's liability; a government security is a government's liability; a corporate bond is a private company's liability; and so on. Every saved claim is someone else's liability. This means that financial savings can exist only as the other side of debt, and when we discuss financial savings we are also discussing debt.

Accordingly, the notion and the measure of personal saving are of no use when analysing the financial dimension of savings, and a serious analysis of financial savings should be formulated at a less aggregated level, one that considers the financial interaction among different sectors, where the net financial assets accumulated by one sector are the net liabilities of another sector.

To do this, identity (4) is rewritten as:

$$\textit{Net private financial balance} + \textit{Net government financial balance} \\ + \textit{Net non-residents' financial balance} = 0, \tag{8}$$

where

$$\textit{Net private financial balance} = \textit{Net private financial savings} \tag{9}$$

$$\textit{Net government financial balance} = (-1)\,\textit{Net government spending} \tag{10}$$

$$\textit{Net non-residents' financial balance} = (-1)\,\textit{Net non-residents' spending}. \tag{11}$$

The three terms in (8) define the net financial (flow) balances of the three sectors of the economy (private, government, and non-resident) in a given period. The net financial balance of the private sector is its net financial savings (9); the net financial balance of the government sector is the accounting opposite of the deficit, or government saving (10); the net financial balance of the non-residents' sector is the accounting opposite of the current account (11).[21]

For each of the three sectors, the 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 financial assets as claims on another sector and/or a reduction of liabilities. An excess of expenditures over receipts entails either a reduction of financial assets and/or an increase in liabilities. Because the sum of all receipts in the economy (including non-residents) during a given time-period must equal the sum of all expenditures, net financial balances must add up to zero. Noticeably, and unsurprisingly, financial savings add up to zero for the world economy.[22]

Any addition to the overall financial savings held by the private sector entails that another entity of the private sector, of the government sector, or of the foreign sector have issued the corresponding liabilities. Financial savings can be stored only in the form of claims on others, and every private financial claim only comes into existence as the counterpart of another private liability, or government liability, or foreign liability. This means that an act of financial saving by one economic unit requires funding and must be associated with and validated by an act of another unit issuing debt.

This conclusion applies to stocks as well as to flows. When we reconsider identity (8) in the form of stocks, any financial assets owned by a private entity must be the counterpart

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21.   In flow-of-funds statistics, these three terms are the 'net lending' of each sector.
22.   By contrast, real saving (when defined as the flow of new real assets) is typically positive for the world economy.

of an outstanding liability of some other entity. Thus, the sum of all financial savings of the (resident) private sector can be seen as the total private stock of financial savings that is being matched by the net outstanding liabilities of private residents, the government, and non-residents:

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\begin{aligned}
Total\ private\ stock\ of\ financial\ savings = \ &Total\ private\ liabilities \\
&+ Net\ government\ liabilities \\
&+ Net\ non\text{-}residents'\ liabilities.
\end{aligned} \tag{12}
$$

This breaks the narrative of financial savings as a source of funds available for investment. In a real-exchange economy, a stored amount of output for consumption can fund the production of a real asset. In a monetary economy, financial savings do not fund production: they need to be validated by debt. A portion of the stock of private financial savings is typically stored in pension funds or private portfolios. Another portion is effectively 'in circulation,' that is, it is frequently transferred as producers (that is, workers and firms) compete for financial assets by selling their labor and their output, and as economic agents swap different financial assets when modifying their portfolio composition. The total existing stock of financial assets is validated by the willingness of other private entities, or the government, or non-resident entities to stay in debt with the domestic private sector. The stock is augmented when new liabilities are issued and diminishes when liabilities are paid off and not renewed.

2.4 Private and public debt as drivers of spending in a T-shirt model

Let me sum up again the results so far. The relationship between saving and investment, typically named the market for 'loanable funds,' is not particularly meaningful when describing the macro-dynamics of an economy. Investment is a portion of the annual output that we define as not being consumed. On the other hand, saving can mean two things: real savings are a portion of the output that we define as not being consumed; and financial savings are financial assets, that is, claims on others, that we store until we trade them against output or other financial assets. Thus, studying the conditions under which saving and investment are equal seems inconsequential: real savings are always identical to investment, and the overall size of the flow of financial savings equals the overall flow of new debt, not investment.

Accordingly, the analysis that follows centers on the relationship between the desire to accumulate financial savings and the ability and willingness to go into debt. It builds on the notion that the willingness of the government to increase public debt and the ability and the willingness of the private sector to increase private debt do function as drivers of spending decisions and, consequently, of growth, employment, and inflation.

To study private spending decisions, I will assume there is no change in government spending on output and thus no creation of government jobs in the period of reference. Any variation of government deficit must therefore come from a discretionary change in taxes or from the cyclical effects on tax revenue. This confines the analysis to the spending decisions of the private sector, in consideration of their impact on growth, employment, and inflation. Physicists say that a theory of the universe is not credible if its fundamental building blocks cannot be condensed onto a T-shirt. In a similar fashion, I will use three equations to illustrate what we know about the causes of private spending in a monetary economy.

Any spending decision lowers the stock of financial assets of the buyer and concurrently increases the stock of financial assets of the seller. It is reasonable to assume that each unit's spending is influenced by its desire to accumulate, or diminish, over the period of reference, its stock of financial assets. Thus, a change in private expenditures can be said

to depend on the difference between the actual (FA) and the desired total stock (FA^d) of financial assets owned by the private sector:

$$\Delta E = \alpha(FA - FA^d). \tag{13}$$

This illustrates that a change in the flow of private expenditures (ΔE) is a function (α) of the excess stock of private savings (that is, financial assets). To this effect, private savings above target are fuel for spending, and private savings below target reduce spending.

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

$$FA^d = \overline{FA^d}, \tag{14}$$

then a change in private spending will only vary in response to a change in the stock of financial savings held by the private sector (FA). In turn, as illustrated in identity (12), S must equal the sum of the outstanding private (D_P), government (D_G), and non-residents' (or foreigners') (D_F) liabilities:[23]

$$FA = D_P + D_G + D_F. \tag{15}$$

Thus, changes in private spending are explained as depending on the stock of debt that validates savings. In other words, when the stock of financial assets (FA) that has been made possible by entities willing to go into debt is greater than the desired stock of savings, the private sector will boost its spending. When the savings made possible by units willing to go into debt are short of the desired level of savings, all private entities that deem their actual savings too low will cut their spending.

The savings–debt identity (15) describes one key financial constraint: any increase of FA must be validated by an equivalent amount of new liabilities coming into existence. One powerful mechanism through which the private sector can expand the stock of financial assets by simultaneously increasing its indebtedness is bank credit. As long as private entities are willing and able to borrow from banks, FA will increase and be validated by rising D_P. Alternatively, FA will increase with public net spending. Another mechanism is by net selling output abroad, corresponding to a higher D_F.

To adequately validate the demand for savings, however, debt must be sustainable, and this is where the difference between private and public debt matters. Private debt is only as good as the borrower's ability to make contractual payments when they come due, and this ultimately depends on the borrower's income. So private debt may become unsustainable when incomes fall enough to threaten debtors' capacity to pay off liabilities.

When private debt becomes unsustainable, private entities begin deleveraging – that is, not spending the financial assets they earn through income so they can pay off debt. When this occurs, it is because some economic entities become unable or unwilling to issue liabilities and instead of being suppliers of assets that others can store as savings, they begin to compete for financial assets as their desired stock of savings goes up. The impact on spending can be violent: with deleveraging, an increasing number of entities compete for existing financial assets and, at the same time, fewer entities are willing to go into debt. A steep rise in the desired target for savings and a simultaneous fall in the issue of new debt may create a significant disparity between actual and desired savings, with a potentially disruptive impact on spending.

23.   Notice that the difference between FA and D_P is the stock of *net* financial assets held by the private sector. Thus, net private savings must be validated by the government running a deficit or by the foreign sector running a current-account deficit (that is, a domestic current-account surplus).

A negative impact on spending may also be the consequence of private entities approaching or having reached their target level of indebtedness. It may also be the consequence of risk perceptions ratcheting higher, raising debt service and making it increasingly difficult for borrowers to service their debts.[24] As private debt stops increasing, this dries up one source of funds for desired savings, and unless there is an alternative source of additional financial claims (government debt or non-residents' debt), spending will fall and jobs will be lost.

By contrast, public debt only becomes unsustainable under specific institutional arrangements. Public debt is always sustainable provided it is denominated in domestic units and the central bank is authorized to use its floating currency to purchase Treasury securities in unlimited amounts, unconditionally. Monetary financing prohibitions, on the other hand, can threaten public debt sustainability and the real economy.[25]

The first lesson of the T-shirt model is that financial savings can only exist as long as they are validated by debt. The second lesson is that if spending responds to the difference between desired savings and sustainable indebtedness, then expenditures increase (and jobs are created) when the willingness to be in debt exceeds the desire to hold savings, and expenditures fall (and jobs are destroyed) when the desire to hold savings exceeds the willingness to be in debt. This means that an increase in spending can only be obtained with greater private borrowing, greater government debt, or greater net exports. The third lesson is that a higher government debt component can add to overall debt sustainability.

In the T-shirt model, savings are neither good nor bad for growth and job creation, and there need be no contradiction between the consequence of saving in the short and in the long run. The conundrum about the consequence of savings can be solved as follows: savings always reduce spending, but when they are funded by entities that are willing and able to stay in debt, then the saving-driven reduction in spending is offset by the equivalent debt-driven increase in spending.

2.5 Savings and debt – not monetary aggregates – matter!

An explanation of private spending as being affected by the relationship between desired savings and sustainable indebtedness has been developed by authors like Joseph Steindl and Winne Godley, and used as a business cycle forecast by market analysts like Warren Mosler. It connects two theoretical frameworks that are very dissimilar to each other. The notion that the desire to save in the form of financial assets is a leakage from spending flows, and not an injection into the investment process, is a tenet of Keynesian models. The notion that private spending depends on an excess of financial holdings is a tenet of Monetarist models.[26]

One problem with monetarist models, however, is that the driver of private spending is viewed in the difference between the actual and the desired stock of a 'monetary aggregate': when economic entities find that they hold more (real) money balances than desired, they will increase spending. 'Money balances' only include currency in circulation and bank deposits, and thus provide a very partial measure of the forms in which financial

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24.   This is described by Steindl (1982) as the process by which an increase in household saving lowers business profits and may send business debt above an acceptable threshold. It is also consistent with Minsky's (1982: 42) notion that the fall in profits will increase 'the weight of speculative and Ponzi finance in the financial structure.'
25.   Bindseil/Winkler (2012) notice that such prohibitions (and their consequent draconian austerity measures) intensified the German crisis of 1931, as well as the eurozone crisis in 2010–2012.
26.   Cf. Friedman (1987).

assets can be owned by the private sector, as shown by identity (15) where public debt includes government securities as well as banks' balances at the central bank, in addition to currency in circulation. This also means that the stock of monetary aggregates can change even when the (broader) stock of private financial savings hasn't changed, and vice versa.

The other related problem with monetarist models is that a change in excess money balances is viewed as being engineered by monetary policy. Yet central bank (monetary) policy operations entail the lending, or the sale, of reserves against financial assets and do not directly affect the net financial wealth of the private sector. Even large-scale purchases of Treasury securities (such as those put into effect with 'Quantitative Easing') have no effect on the overall level of the private sector's financial savings and only modify their composition. In the monetarist transmission mechanism, only a monetary impulse given by the central bank can spur private spending, while fiscal policy cannot be expansionary unless a deficit is financed with monetary expansion, or 'monetization,' engineered by the central bank.

The alleged ineffectiveness of fiscal policy, however, depends on two glitches with the monetarist model. One is that it misses how financial savings are directly affected by government deficits, as discussed above. The other is that it misses how spending decisions respond to an overall assessment of private balance sheets, not simply to an assessment of the most liquid component. Thus, public debt should not be excluded from the 'aggregate' that matters for spending decisions.

Monitoring monetary aggregates (that is, currency in circulation and demand deposits) thus misses the broader picture. Currency in circulation is a component of private financial assets (FA) and one form of public debt (D_G), notably, of the central bank. It is a rather inconsequential factor in private spending, one that depends on the cash-payment needs of the private sector, and may change dramatically only in a serious crisis of confidence in the banks' payment systems. Bank deposits can be generated by three sources. In the case of bank loans, the new private financial assets are offset by private domestic debt. In the case of net government spending, deposits are the other side of newly issued public debt acquired by banks. In the case of exports, they are the other side of a claim on a foreign bank. Notice that when the private sector sells deposits for newly issued treasury securities, the monetary aggregate falls, and yet the stock of financial savings is unchanged.

In contrast to the monetarist model, the argument developed within the frame of the T-shirt model explains spending as depending on the private sector's demand for financial savings, not on the demand for money balances. In its attempt to meet the demand for savings, the private sector must adequately fund it. This can be done if some private entities are willing and able to go into debt. Should the private sector be in short supply of debt, then savings can still be funded by the government running a sufficiently large deficit. Finally, savings can be funded by the foreign sector willing to go into debt with us. This is the case of a net current-account surplus providing a source of financial assets, albeit subject to exchange-rate risk. Conversely, monetary policy is almost powerless here, as its operations change the composition, not the level, of savings.

Differently from standard Keynesian models, the argument developed above does not assume a stable propensity to consume (or to save) and views the existing stock of debt and its sustainability as the driver of private spending. This also entails that differences in economic units' financial balances are the ordinary condition of a monetary economy, and a policy aimed at keeping spending as high as needed to close the output gap and maximize employment should focus on watching that such differences work towards policy goals, and not on forcing a reduction of such differences by treating all differences as 'imbalances.'

3 LESSONS FOR THE EURO AREA

3.1 Policy effectiveness

As discussed in the opening section of this essay, the eurozone crisis is best described as a two-phase crisis. The first phase ended when the Eurosystem took the necessary actions to prevent an operational failure of the monetary union. Fatefully, the design of the solution to the operational issue actually took the crisis to a new level. The second, ongoing, phase is an acute structural lack of demand and a failure of policies to restore conditions for prosperity.

Virtually all models (with the notable exception of real business cycle models) explain an economic downturn as a decline in spending,[27] and professional forecasters typically base outlooks on projections of how each component of domestic and foreign demand is expected to move. Correspondingly, EA policy-makers have long aimed at restoring demand. Yet one lesson they may learn from the simple model developed above is that their actions are inadequate, if not utterly counterproductive.

Policy actions in the EA include union-wide policies as well as member countries' policies. While union-wide policies include monetary policy and the fiscal policy stance of countries,[28] member countries decide on structural reforms, including changes in the composition of government expenditures and taxes, albeit consistently with the priorities set in the Annual Growth Survey of the EU Commission and the economic policy recommendations by the Council of the EU.[29] In addition, EU-wide structural reforms, including the capital markets union,[30] are outlined in the Five Presidents' Report.

How this gamut of EU policies effectively improves demand conditions can be scrutinized on the basis of the T-shirt model. In such a framework, structural, monetary, and fiscal policies sustain private spending if they lower the saving intentions of the private sector, if they prompt an increased willingness and ability of the private sector to finance net spending with new debt, if they boost net exports outside the EA,[31] or if the public sector is formally permitted to let the difference between spending and taxes get larger. This latter option, however, is completely blocked and made unavailable by EU rules.

It would seem that an EA-wide general tax cut, such as a proportional reduction of value-added taxes across the EA, would instantly boost private financial savings. Nevertheless, most member countries' debt levels are higher than the current threshold set by EU rules, and thus a tax cut becomes unfeasible. Hence, by arbitrarily defining the boundary of sustainability of public debt,[32] EU rules pose a severe constraint on fiscal policy. The alleged motivation is that fiscal policy is only workable when there is enough 'fiscal space' to respond to cyclical conditions.

Since 2012, however, the Eurosystem has been formally committed to being an unlimited buyer of government debt issued by countries that comply with EU guidelines.

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27.   Different models, however, advocate different (demand-side and supply-side) therapies to fuel spending.
28.   This is set by EU rules. That the fiscal stance of all regions of a monetary union should comply with a common standard is, in principle, a sound stability condition.
29.   Guidelines are stricter for countries that are under an economic adjustment programme.
30.   Cf. European Commission (2009).
31.   Notice that an increase in net exports from one member country to another within the EA leaves overall EA spending and jobs unchanged.
32.   Before the euro was born, Pasinetti (1998) had challenged the EU logic in defining sustainability.

In other words, a country retains fiscal space (and its debt is 'sustainable' and not credit-sensitive) when it is in compliance with public debt rules. This logically implies that fiscal space is defined by any threshold that the EU chooses and that the Eurosystem endorses (as a condition for OMTs), and a change of rules is a purely political matter.

Regarding structural policies, their advocates consider them crucial to enhancing output potential more than to enhancing private spending. Effects on spending are limited. The ECB (2015), for example, recognizes a possible effect on aggregate demand from net exports, enhanced confidence, and an increase in real wages following product market deregulation. It remains ambiguous, however, how such alleged effects would actually impact on the savings–debt constraint. Indeed, there is no evidence that the structural reform approach has a meaningful impact on savings and debt.

One may thus be tempted to see as 'fortunate' the fact that in the context of economic stagnation and subdued commodity prices the rate of inflation fell below the ECB target, so as to justify ECB action. Within its price stability mandate, the ECB has slashed interest rates and has engaged in outright purchase programmes (of asset-backed securities, covered bonds, and public sector debt), allegedly to encourage bank credit (and thus private debt) expansion. Unfortunately, substituting one kind of debt with another on banks' balance sheets and lowering interest rates have only a limited, if any, effect on savings and debt. While this policy may encourage borrowing and spending, it unequivocally lowers the stock of public debt (by lowering debt service payments) and has ambiguous effects on desired financial savings.[33] Only the weak euro has provided unambiguous support to private savings (and jobs) through the increase in net exports and the appreciation of foreign currency holdings.

3.2 Inconsistency of fiscal rules with the savings–debt constraint

Within the frame of the T-shirt model, the direction of change of private spending depends on the relationship between desired savings and sustainable indebtedness. Policies that aim at fostering private spending can either try to pull private saving desires lower or support the creation of financial assets - that is, financial savings – so that this stock exceeds the desired saving target of the private sector:

$$FA^d < D_P + D_G + D_F. \tag{16}$$

By the same token, deflationary pressure occurs when desired savings exceed the stock of outstanding debt:

$$FA^d > D_P + D_G + D_F. \tag{17}$$

The political cap on public debts (D_G) limits the options to validate the desired savings of the private sector. As the fiscal adjustments needed to bring most government debts down continues, no union-wide compensating policy is being enacted.[34] One should consider that the aggregate fiscal balance of the EA is the net sum of the fiscal balance of all member countries' public sectors, of the EU budget, and of any other EA-shared initiative to fund tax reliefs or net spending, funded by debt issued by the EU or other agencies. Unfortunately, the cap on D_G prevails at all levels.

33.   The distribution of financial savings from lenders to borrowers may lower intended savings only if borrowers have a lower saving target than lenders.
34.   The long-announced Juncker plan is funded by private, not public, debt.

In this respect, the T-shirt model seems to have good predictive power when comparing the performance of the EA with that of the US economy after 2008. The US economy recovered faster as the US general government deficit reached 12.6 percent and remained above 8 percent for 5 straight years, while the overall fiscal deficit in the EA exceeded the 3-percent political threshold only in 4 years and never exceeded 6.3 percent. And since the fiscal deficit in the US has narrowed to below 3 percent under the 'sequester,' the US economy has slowed down.

Once D_G is capped, EU policies can attempt to raise private debt (D_P) and/or non-residents' net spending (D_F) to move from a contractionary condition (17) to an expansionary condition (16). Increasing private debt, however, is facing the unsurprising hurdle of ongoing deleveraging, as the private sector is still engaged in balance-sheet restructuring in an effort to lighten debt loads, as not all the existing D_P is considered sustainable and desirable by those who owe such debt. Only the rising current-account surplus (that is, a higher D_F) has offered a temporary remedy and a source of debt to validate higher savings.

Conversely, the current-account surplus solution marks a dramatic shortfall to the promise of a single market in Europe that lessens dependence on foreign buyers. It also comes at the cost of increasing risk to residents who accumulate claims on foreigners, of lowering real output per capita[35] and of making the EA economy dependent on the strength of foreign demand and the external value of the euro. It makes the EA economy vulnerable to the dynamics of savings and debt in the rest of the world[36] and cannot be a structural solution.[37]

This should make a powerful case for reclaiming the fiscal instrument in the EA. Common rules that limit member countries' government debt are reasonable. What is not reasonable is the absence of an alternative plan that is consistent with the savings–debt constraint discussed above. The problem is visibly political, but an effective solution can be found on the condition that it is economically viable. On its webpage, the EU Commission describes its priority with the following words: 'Creating jobs and boosting growth – without creating new debt.'[38] When viewed within the frame of the model developed in this essay, this statement underscores a serious conceptual fault. Limiting debt means limiting the ability of Europeans to fund their savings, and trusting that growth is not subject to the savings–debt constraint is illusory.[39]

35.   As more output is sold abroad than it is imported.
36.   EA net exports reflect a desire by non-residents to sell their financial assets in exchange for EA output.
37.   Kregel (2015) has described the implications of the net export solution as being consistent with the definition of a Ponzi scheme.
38.   This is the catchphrase on the 'Priorities' page of the European Commission website in January 2016.
39.   Fiscal integration is not a sufficient, nor a necessary, condition for releasing the savings–debt constraint. While a common fiscal authority would entail some redistribution of spending and jobs among member countries and would narrow divergences, only a reform that is consistent with the savings–debt constraint could bring sustainable prosperity in Europe. This includes a mechanism that creates fiscal space and generates the imbalance described in condition (16). In this vein, Bibow (2013) has advocated an EU Treasury where common fiscal space is created to fund public investment. Tonveronachi (2015) has proposed reformed ECB operations that would create a single financial market in the EA and create fiscal space under current EU debt discipline.

4 CONCLUDING REMARKS

The focus of this essay is the prolonged deflationary bias of euro-area policies and their failure to prompt sustainable strategies that can effectively restore growth. After providing a solution to the conundrum of the consequence of savings, I have explored the monetary conditions for real prosperity and developed a simple (T-shirt) model of private spending, where the driver of private spending is debt. The model seems a good predictor of policy effectiveness.

This model explains private spending as depending on the difference between actual and desired private financial savings. When private desired savings are taken as a given, then the key factor explaining private spending is the stock of financial assets available to meet saving desires. This stock, in its turn, must equal the outstanding stock of liabilities, including private liabilities, government liabilities, and foreign liabilities. This is the savings–debt constraint to spending: if spending depends on the saving target of the private sector, it also depends on the stock of debt that validates private saving.

Yet debt supports spending if it is sustainable, and private spending can thus be described as being affected by the relationship between desired savings and sustainable indebtedness. If public debt is made sustainable by the central bank under floating rate conditions, then the public debt component can effectively add to overall debt sustainability.

I have then derived some lessons for the euro area. The deflationary bias that had been feared when the euro was being designed is the bitter reality of the EA, and the reason why EA policies are failing can be clearly articulated within the T-shirt model. This points to one chief factor that cripples policy effectiveness in the EA: that is, the politically self-imposed fiscal cap that limits the size of one major source of savings in the EA. Shaped by political concerns, public debt constraints seriously hamper the capacity to absorb shocks. As public debt is removed as a source of private saving when it exceeds a politically defined threshold, private debt and net exports are the only available means to fuel private spending in the EA. Yet neither can offer a stable, long-term solution.

A more robust policy design would be to ensure that the stopcock of debt (and savings) lets enough fuel into the EA private sector and allows regions to compete for the financial claims in circulation. This could help to stop the widening differences in economic performance among member countries, while political reforms could work to further narrow the differences among member countries.

This is the true quantum leap that Europe needs today. As long as EU policies continue to defy the savings–debt constraint, the euro area will continue to live dangerously and remain vulnerable to political disintegration.

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