Debt and growth: from the Great Divergence to secular stagnation?

by Dr. Fadi Hassan, Economist – Consultant (UniCredit Bank London)

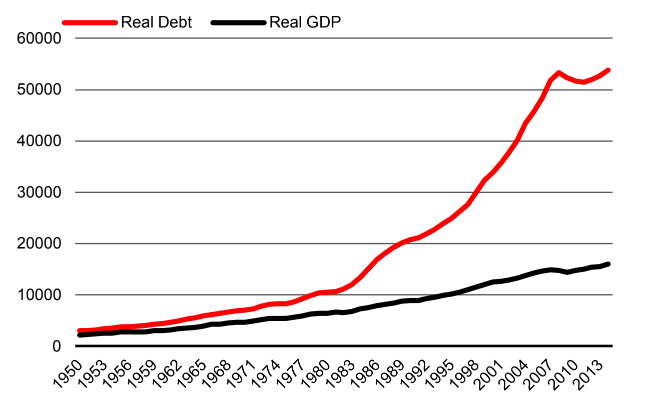
- Despite the unprecedented amount of monetary easing, advanced economies are struggling to generate decent GDP growth. This is generating a lot of attention around the secular stagnation hypothesis and the prospects of future growth.
- We show that the current economic phase follows a generalized pattern across countries where the trend of debt and that of GDP diverged significantly since the early 1980s. We call this pattern the Great Divergence.
- We discuss the link between the Great Divergence and the hypothesis of a secular stagnation trilemma; namely that we cannot achieve, at the same time, financial stability, sustained economic growth and full employment.
- We conclude that even if the experience of some country might look consistent with secular stagnation, there is not necessarily a binding trilemma. Economic policies focused on investments that enhance future productivity growth can generate growth and full employment without undermining financial stability.

The Great Divergence

If we look at the pattern of real GDP and real debt in the US, we observe a great divergence of their trends since the early '80s[1]. Chart 1 shows that real GDP and real debt tracked each other closely for more than three decades after World War II. However, from 1982, real debt started to accelerate and its trend diverged significantly from that of real GDP. It is only after the 2008 financial crisis that the increase in debt stops and becomes more stable.

CHART 1: DEBT AND GDP: TWO DIVERGING TRENDS

Real debt and real GDP (USD bn; 2010 prices)



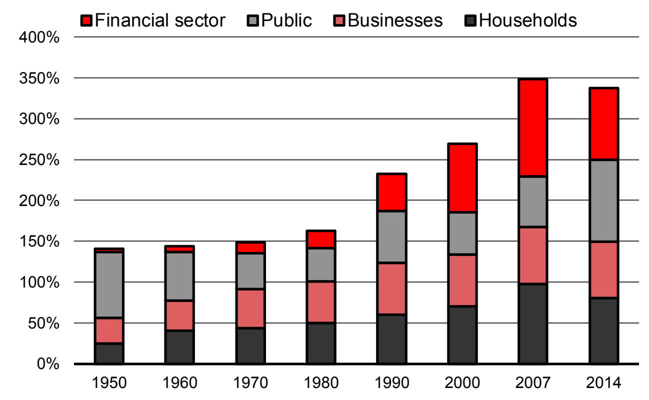
Source: Federal Reserve; UniCredit Research

[1] Debt is defined as the level of outstanding gross debt securities and loans.

This divergence, which reflects the leverage process of the economy, is remarkable in terms of size and speed. Chart 2 shows the sectoral composition of debt accumulation. The most striking feature relates to the role of the financial sector. Its debt rose from 20% of GDP in 1980 to 120% of GDP at the pre-crisis peak in 2007. This partly reflects the role of the US as a global financial center. In fact, in 2007, about 21% of US-based banks' debt was owed to the rest of the world (BIS data). Nevertheless, foreign debt financing, although increasing, played a secondary role as it accounts for only 12% of the overall increase in debt since the mid-1980s and is concentrated mainly in public debt.

CHART 2:
THE RISE OF DEBT: FINANCE AND HOUSEHOLDS ARE KEY

Real debt by sector, share of real GDP



Source: Federal Reserve; UniCredit Research

The household sector played a key role in driving the Great Divergence in the 2000s. Household debt went from 70% to 100% of real GDP in seven years, between 2000 and 2007. Virtually all of this increase was due to mortgages. Nevertheless, as chart 3 shows, the increase in mortgages had a marginal effect on homeownership, which started to rise in 1994. This implies that the increase in mortgages affected mostly the value of houses and the climbing of the property ladder by existing homeowners.[2] Ironically, the homeownership rate is now back at the 1993 level, which Borio et al. (2012) identify as the trough year of the last US financial cycle.[3]

[2] Interestingly, the homeowners' rate peaked in 2004 and most of the rise in sub-prime mortgages happened between 2004 and 2006, as the search for the marginal homebuyers increased.

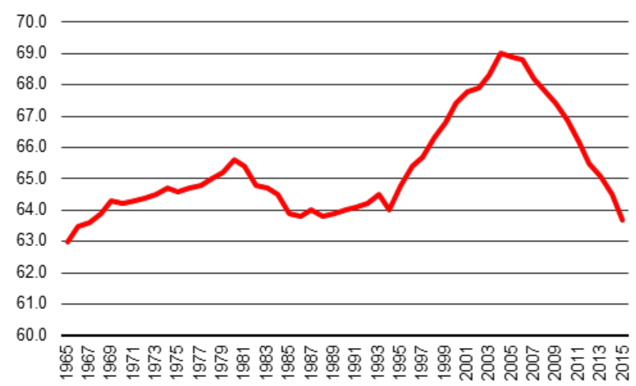
[3] See, Borio, C., Drehmann, M., and K. Tsatsaronis, "*Characterising the financial cycle: don't lose sight of the medium term!*", BIS Working Paper n. 380.

Public debt showed a very marginal increase in absolute real value between 1950 and 1982. Combined with GDP growth, this led to a deleveraging of the public sector, whose debt-to-GDP ratio went from 80% to 40% (Chart 2). Public debt then increased during the '80s and peaked at 71% of real GDP in 1993. It decreased again during the Clinton administration to 51% in 2001, but returned to 61% of GDP just before the global financial crisis. After the financial crisis, we see a sharp increase of public debt, which reflects the public absorption of financial firms and households' debt.

Interestingly, the debt of non-financial businesses has remained fairly stable. It did rise from 52% to 64% of real GDP in the 1980s (chart 2), but then tracked real GDP growth for 25 years. This might suggest that the leverage process that characterized the US economy had a marginal impact on credit growth for real businesses and that it was mostly functional to the growth of the housing market and to the financial sector itself in a sort of self-referential circle of funding.

CHART 3:
THE SPIKE IN MORTGAGES IN THE 2000S DID NOT AFFECT HOMEOWNERSHIP MUCH, WHICH HAD CLIMBED EARLIER

US homeownership rate, in percent



Source: Federal Reserve; UniCredit Research

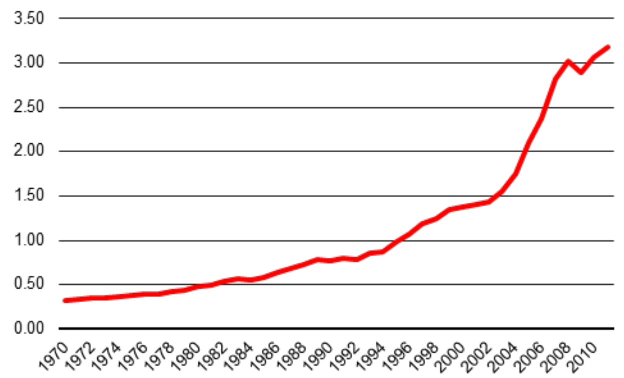
Possible drivers of the Great Divergence

The initial year of the Great Divergence is very suggestive and coincides with the start of Reaganomics. The financial industry went through a series of deregulations during the 1980s, with the initial step being the introduction of the *Garn-St. Germain Depository Institutions Act* of 1982, which deregulated thrifts and enabled them to compete with money market mutual funds. Other reforms that allowed an expansion of the financial industry were approved in the 1980s[4]. These are likely to be the main drivers behind the debt expansion the financial sector has experienced since 1982.

An alternative explanation could be related to the rise of globalization and to a post-Bretton Woods international monetary system characterized by free capital flows and flexible exchange rates. However, chart 4 shows that the international financial integration of the US economy did not experience a change in trend in the 1980s. It first accelerated in the mid-90s and then rose more strongly since the early 2000s. Therefore, the post-Bretton Woods system itself is unlikely to be a key driver of the Great Divergence.

CHART 4: INTERNATIONAL FINANCIAL INTEGRATION ACCELERATED AFTER THE GREAT DIVERGENCE

Foreign assets plus foreign liabilities as a share of GDP



Source: Lane and Milesi-Ferretti (2007), UniCredit Research

Not only a US story, but there is a "Tolstoy effect": each country diverged in its own way

The Great Divergence is not a phenomenon that characterizes only the US economy. We see a divergence between the trend in debt and that of GDP for other OECD countries. However, as Lev Tolstoy taught us "*all happy families are alike; each unhappy family is unhappy in its own way*". Similarly, each indebted economy got indebted in its own way.

We discuss the case of Italy, where public debt was the initial main driver of the Great Divergence; the case of Finland, which had two diverging phases, one driven by the financial sector and households, and a second one driven by foreign debt that targeted mainly non-financial corporates; and finally Sweden, which in 10 years experienced a rise of debt similar to what the US had experienced over 25 years, and then underwent a decade-long deleveraging process.

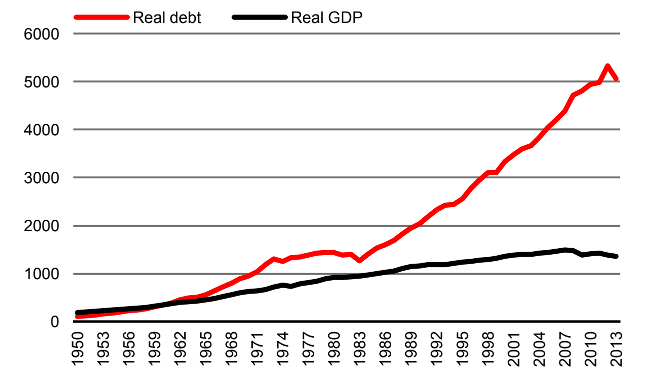
Chart 5 shows that also Italy experienced an increase in real debt in the mid-1980s. However, this was driven mostly by the rise of public debt while the financial and business sector had experienced stable/decreasing debt since the 1970s, which lasted for about 30 years (chart 6). Nevertheless, this pattern changed after the mid-90s, when public debt started to decrease, but the financial sector's debt climbed after the privatization and liberalization of the banking industry. During this period, also households' and business' debt increases, signaling a more widespread pattern in the economy. [5]

[4] See Sherman M., 2009, "A Short History of Financial Deregulation in the United States", CEPR.

[5] Note that in Italy there was also an initial rise in debt in the 1960s driven by a generalized debt expansion across sectors. However, this has flattened out since the early 1970s as the financial and business sectors halted its rise.

**CHART 5:
THE GREAT DIVERGENCE ALSO HIT ITALY…**

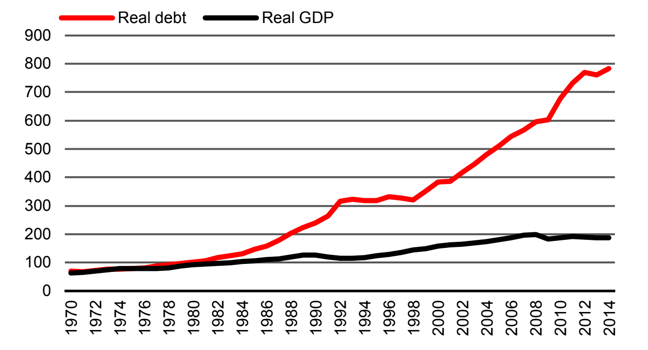
Italy, real debt and real GDP (EUR bn; 2005 prices)



Source: Bank of Italy, UniCredit Research

**CHART 7: THE GREAT DIVERGENCE IN FINLAND:
DELEVERAGING HAD A TEMPORARY EFFECT…**

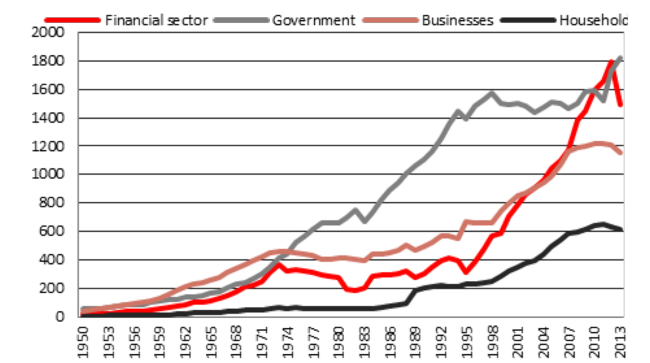
Finland, real debt and real GDP (EUR bn; 2010 prices)



Source: Bank of Finland, UniCredit Research

**CHART 6:
…DRIVEN MOSTLY BY PUBLIC DEBT, BUT THE FINANCIAL SECTOR TURNED OUT TO BE A KEY DRIVER AFTER THE MID-90S**

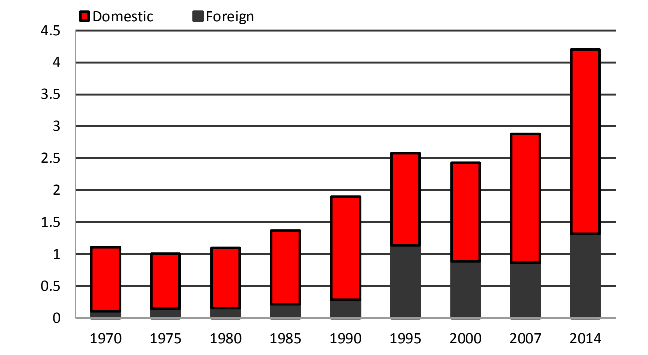
Italy, real debt by sector (EUR bn; 2005 prices)



Source: Bank of Italy, UniCredit Research

**CHART 8:
… THEN FOREIGN CREDIT TURNED INTO A SIGNIFICANT DRIVER**

Finland, real debt by nationality of creditor, share of real GDP



Source: Bank of Finland, UniCredit Research

Finland represents another interesting case of the Great Divergence. Real debt started to increase in the early 1980s up until 1991 (chart 7). Similar to the US, the rise was driven mainly by an expansion of the financial sector and by households. Then Finland's domestic sector went through a deleveraging phase for a few years.[6] However, since the mid-'90s, the trend of real debt has started to increase again, but this is driven mainly by credit coming from abroad (chart 8). Foreign debt, which targeted mainly the Finnish non-financial corporate sector, increased significantly and represented a large share of the overall debt until the global financial crisis.

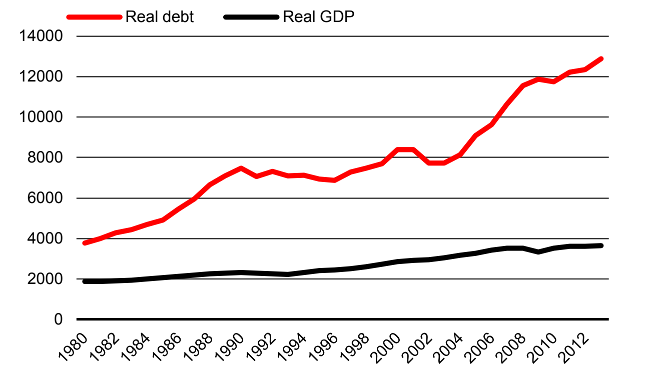
Finally, we look at the case of Sweden. Chart 9 shows that Sweden started the 1980s with an already high debt level (about 200% of GDP). This increased throughout the 1980s due to the expansion of the financial sector and reached 323% of GDP in 1990 before the banking crisis (chart 10). This level is similar to that of the US before the global financial crisis of 2007/08. Sweden then underwent a decade-long deleveraging process.[7] This process ended in the early 2000s when debt, driven by the financial sector, started to rise again.

[6] For a discussion on this point see "Deleveraging in Europe and the US: not a break on growth" UniCredit Economist Harm Bandholz, *UniCredit Global Themes Series*, n.24, 2014.

[7] UniCredit Economists Chiara Silvestre and Marco Valli analyze this process in detail in "Generating growth after a crisis – the Swedish case of a comprehensive solution", *Economics Thinking*, n.2, 2016.

CHART 9: SWEDEN STARTED THE 1980S WITH AN ALREADY HIGH LEVEL OF DEBT AND DELEVERAGED IN THE 1990S…

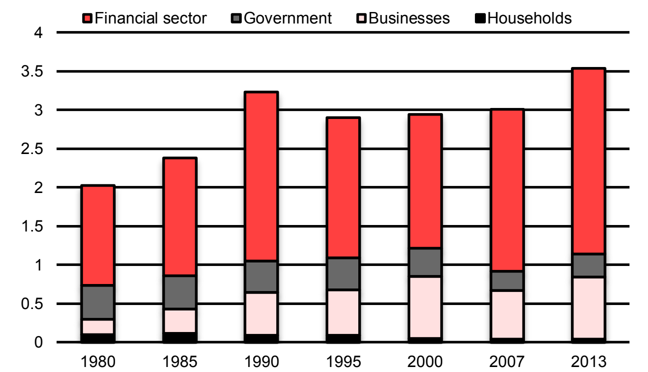
Sweden, real debt and real GDP (SEK bn; 2010 prices)



Source: Statistics Sweden, UniCredit Research

CHART 10: …BUT THE FINANCIAL SECTOR HAS BEEN EXPANDING SINCE THE EARLY 2000S

Sweden, real debt by sector (share of real GDP)



Source: Statistics Sweden, UniCredit Research

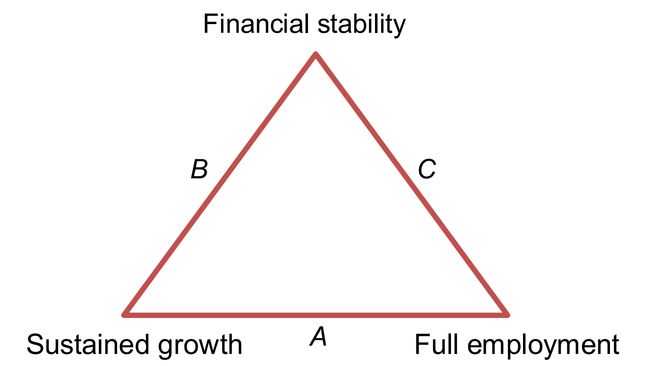
Why does the Great Divergence matter? The link with the secular stagnation trilemma

The relevance of the Great Divergence can be linked to the secular stagnation debate. Secular stagnation refers to the fact that the real interest rate of equilibrium, the one that equates savings and investment at full employment, is not reached because it is too low. This disequilibrium turns out to be particularly challenging when nominal interest rates are at a lower bound, as the effectiveness of monetary policy is reduced.

The implication of not reaching the real interest rate of equilibrium is that there are excess savings, which remain unutilized. This leads to a reduction of potential output and to sluggish growth; as a consequence full employment cannot be reached. All this can be due to an abundance of savings or a lack of investments. There are different potential drivers behind secular stagnation that can affect either savings or investments: demographic patterns such as aging population, rising inequality, deleveraging, and the reduced price of capital goods.[8]

Larry Summers argues that the real interest rate of equilibrium has been declining in the US for the last several decades, and the way through which the US economy managed to avoid the secular stagnation trap and sustain high growth and full employment was through the rise of debt, which ultimately made the financial system vulnerable and unstable. Therefore, he puts forward the argument that there might be a secular stagnation trilemma according to which, given a declining real interest rate of equilibrium, we cannot have, at the same time, financial stability, full, employment and sustained growth, but we can choose only two of these (Figure 1).

FIGURE 1: THE SECULAR STAGNATION TRILEMMA



Source: Summers (2014), UniCredit Research

We have seen in Chart 1 that US debt raised significantly since 1980s; the result was an increasing level of leverage in the economy. A higher level of leverage can make the financial system less resilient to shocks and recoveries after a crisis harder to achieve (Jordá et al., 2013).[9] However, this is not necessarily always the case; as Gorton and Ordoñez (2016) show, if higher credit is targeted to the most productive investments, leverage is supported by current or expected productivity growth and it is not associated with financial instability.[10] Nevertheless, the leverage experience of the US, with its focus on the financial sector and mortgages, has been conducive to higher financial instability (Taylor, 2012).[11]

8 See Lawrence H. Summers, 2014. “U.S. Economic Prospects: Secular Stagnation, Hysteresis, and the Zero Lower Bound”, *Business Economics,* vol. 49, n.2.

9 See Jordá, O., M. Schlarick, and A.M. Taylor, 2013. “When Credit Bites Back: Leverage, Business Cycles, and Crises.” *Journal of Money, Credit, and Banking,* v.45,. pp. 3-28.

10 See Gorton, G., and G. Ordoñez, 2016. “Good booms, bad booms”, NBER Working Paper n. 22008.

11 Taylor, A. M., 2012. “The Great Leveraging”, NBER Working Paper, n. 18920.

Table 1 shows that in this period (1982-2007) the US has managed to maintain a level of economic growth and unemployment similar to the one that characterized the post-war decades. Summers (2014) argues that such economic performance has been reached at the cost of financial stability as higher debt was functional to sustain GDP growth. However, for this hypothesis to be possible, debt needs to grow at an increasingly faster rate respect to GDP growth. Chart 11, which looks at the difference between the growth rate of debt and that of GDP, show that this was the case in the first half of the 1980s and then again from the early 1990s until the global crisis.

These macro numbers are consistent with Summers' hypothesis and with the segment "*A*" of the trilemma where growth and full employment are sustained at the cost of higher financial stability: but they do not prove it as they require a more thorough quantitative assessment.

TABLE 1: UNITED STATES, GROWTH AND FULL EMPLOYMENT, BUT FINANCIAL INSTABILITY

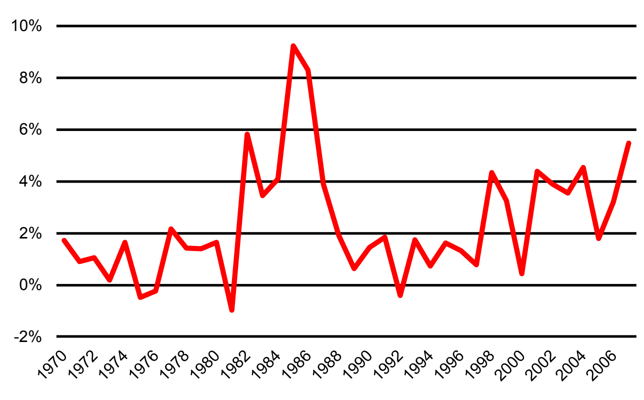
Real debt and real GDP growth rate (annual average); unemployment rate (average)

	1950-1981	1982-2007	2009-2015
Real debt, average growth rate per year	4.1%	6.3%	0.5%
Real GDP, average growth rate per year	3.6%	3.2%	1.8%
Unemployment rate	5.4%	5.8%	7.5%

Source: BEA, Federal Reserve, UniCredit Research

CHART 11: DEBT GROWTH WAS ACCELERATING RESPECT TO GDP GROWTH IN THE EARLY 1980S AND SINCE THE 1990S

US, Growth rate difference between real debt and real GDP



Source: Statistics Sweden, UniCredit Research

If we look at the post-crisis experience of the US (Table 1, 2009-2015), it shows a sharp decline in the growth rate of debt. During this period the unemployment rate, despite an average of 7.5%, has been declining and it reached 4.9%, which is below the historical average (although lower participation rates bias this number). In this period the average annual growth of real GDP has been 1.8%, which is well below the historical average. Therefore, the post-crisis phase of the US would be consistent with the segment "*C*" of the secular stagnation trilemma.

We now look at the case of Sweden, which – by the early 1990s – was at a level of debt-to-GDP ratio similar to that one US experienced before the global financial crisis. Then, a severe banking and financial crisis hit Sweden in the early 1990s and the country went through a long period of deleveraging. Table 2 shows that, in this phase (1991-2004), the growth rate of real debt plummeted compared to the previous period and this helped to stabilize the financial sector. During this period, thanks to high total factor productivity (TFP) growth, Sweden managed to sustain a level of economic growth that was similar to the previous decade. However, this came at the expense of a higher unemployment rate: unemployment declined after the crisis peak, but unlike the US, it did not go back to the pre-crisis level, suggesting an increase in structural unemployment. Thus, after the crisis Sweden had better financial stability and high growth, but higher unemployment. This would be consistent with the segment "*B*" of the trilemma.

TABLE 2: SWEDEN, FINANCIAL STABILITY, GROWTH, BUT UNEMPLOYMENT ROSE

Real debt and real GDP growth rates (average per year); unemployment rate, average per period

	1980-1990	1991-2004	2005-2007
Real debt, average growth rate per year	7.1%	1.1%	8.3%
Real GDP, average growth rate per year	2.2%	2.3%	2.7%
Unemployment rate	2.5%	7.5%	6.9%

Source: Sweden Statistics, WDI, UniCredit Research

The experiences of Finland and Italy offer additional insights into the discussion. Finland, after the standard phase of divergence in the 1980s, which culminated in a crisis in the early 1990s, experienced a period of deleveraging at the cost of a much higher unemployment rate and lower growth (Table 3). However, this phase was relatively short thanks to foreign credit that led to a rise of the growth rate of debt. This rise in debt was much lower than in the 1980s and it focused on corporates rather than the financial sector. This turned to be associated with a phase of higher economic growth and lower unemployment. This experience suggests that the source of credit (foreign vs. domestic) and the sector to which the credit is targeted (corporates vs. financial) can matter. It might be possible to raise debt without destabilizing the financial system, because debt can be targeted towards more productive investments and can come from abroad. In this case the secular stagnation trap would not take place.

TABLE 3: FINLAND, SIMILAR TO SWEDEN, BUT THEN FOREIGN FINANCE KICKS IN

Real debt and real GDP growth rates (average per year); unemployment rate, average per period

	1982-1991	1992-1998	1998-2007
Real debt, average growth rate per year	9.6%	3.0%	6.4%
Real GDP growth rate per year	3.3%	2.7%	3.5%
Unemployment rate	4.2%	14.6%	9.7%

Source: Finland Statistics, WDI, UniCredit Research

Finally, Italy's experience suggests that the rise in debt might not guarantee higher growth and full employment if government debt is its main driver. Table 4 shows that, during 1984-1995, when the Great Divergence was driven by public debt, the country experienced lower growth and higher unemployment than before. We believe this is not necessarily a general case; the composition of the public expenditure associated with the rise of debt can matter, with public investment potentially having a stronger effect on growth than current spending. After 1995, debt was driven mainly by the financial sector and growth turned out to be even lower. However, we need to take into account that during that period Italy experienced an unprecedented slowdown of TFP, which significantly dragged down economic growth.

TABLE 4: ITALY: IS LEVERAGING THROUGH PUBLIC DEBT INEFFECTIVE?

Real debt and real GDP growth rates (average per year); unemployment rate, average per period

	1960-1972	1973-1983	1984-1995	1996-2007
Real debt, average growth rate per year	10.8%	0.7%	6.0%	4.8%
Real GDP, average growth rate per year	5.8%	3.2%	2.3%	1.3%
Unemployment rate	5.3%	8.4%	9.9%	9.2%

Source: Bank of Italy, WDI, UniCredit Research

We conclude that, even if the experience of some country might look consistent with a secular stagnation trilemma, this is not an inevitable fact of life and a necessarily binding phenomenon. In fact economic policies that focus on investments that lead to higher TFP growth like education, research and development, or green energy can sustain growth and full employment without necessarily undermining financial stability. This is particularly relevant in presence of cheap credit, as the cost of funding of such projects is likely to be lower than the real return they can generate. These types of policies are highly warranted in the current economic phase.

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