

Why are Keynesian Multipliers Bigger in Hard Times?

A Palley-Aftalion-Pasinetti explanation

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Abstract:

The Great Recession has led to renewed interests in Keynesian economics. In a first time, Keynesian remedies, consisting in increased public spending during the slump so as to avoid depression, have been applied. But, in a second time, especially in the eurozone, international organizations (IMF, OECD, European Commission) have advocated fiscal austerity in order to deal with the so-called sovereign debt crisis. Confronted with the brutal economic slowdown following the fiscal tightening, these international organizations suddenly realized that the value of Keynesian multipliers was bigger than expected, and so that austerity policies led to recession harder than expected. Then, numerous studies tried to explain why Keynesian multipliers are bigger in recession.

This paper weighs in this debate while suggesting a plausible explanation, based on simple Keynesian macroeconomics. To put it in a nutshell, it seems to us that the main cause of increased multipliers in recession refers to a drop in import propensities.

In a first part, we provide historical data showing how import propensities have declined during recessions. Then, in a second part, we build our explanation for this reduction in import propensities, while using the works of Thomas Palley, Albert Aftalion and Luigi Pasinetti. From Thomas Palley, we use his decomposition of the multiplier according to imports' utilizations in aggregate demand. From Albert Aftalion, we use his accelerator model for investment. From Pasinetti, we use his saving equation with different propensities to consume out of incomes according to social groups. Thanks to the combination of these three authors, we are able to explain why the propensity to import is lesser during a recession, and so why the multipliers are bigger in hard times.

Keywords:

Fiscal Multipliers; Recession; Globalization; Import Content; Investment Accelerator;

JEL classification:

E12; E62; F62; B50; N10

Introduction

The multiplier is a macroeconomic causality, running from investment to the level of employment, first analyzed by Kahn (1931) and extended by John Maynard Keynes in his path breaking work, the *General Theory*. In this latter, he links positively the amount of private (or public) spending to the level of national income. Then, Keynes explains that, during a recession with a high level of unemployment, Governments should raise public spending in order to sustain effective demand and profits 'so that entrepreneurs will hire all domestic workers willing and able to work' (see Davidson, 2010). More generally, Keynesian economists consider that, as long as the recession is ongoing, it is really counterproductive to diminish Government deficits because that could magnify the negative impact of the crisis.

The previous vision is theoretically contested by Neo-Classical economists, through the well-known Ricardian equivalence theorem. They claim that public spending is inefficient because households increase their saving in order to pay higher expected taxes. In the end, such expectations, by depressing private consumption, also reduce global demand. Regarding another component of aggregate demand, the crowding-out effect on private investment also tends to annihilate the positive effects of public spending: due to the Loanable Funds Market Theory, the financing of public spending diverts funds from the financing of private investment, thus raising interest rates and discouraging private enterprise. Consequently, Neo-Classical economists' prescriptions, regarding economic policy, roughly consist in maintaining a balanced Government budget because the value of the Keynesian multiplier would be very low.

Obviously, such theoretical oppositions lead to numerous statistical studies about the real value of the multiplier with the purpose of showing the uselessness of countercyclical fiscal policies. Some more radical empirical works go further in this logic by finding negative fiscal multipliers and advocating the concept of expansionist austerity along the lines of Giavazzi

and Pagano (1990). Recently, the controversy regarding multipliers increases when, in 2012, the IMF officially recognized to have underestimated them during the period of recession.

Nevertheless, despite the recent debates on the value of multipliers and the utilization of more complex econometric techniques, we think that a detailed explanation of why those multipliers vary over the business cycle is still missing. Our purpose here is to offer such an explanation of an evolving multiplier during recessions but also to assess long-run tendencies due, for example, to the expansion of globalization and financialisation.

First, we review the econometric literature on the value of the fiscal multiplier, showing that several recent studies conclude to the existence of an endogenous multiplier. Second, we present a simple methodology to compute, in the long-run, a proxy of the multiplier for a set of developed countries. Third, we proceed to a careful analysis of our database by dealing with recessions and showing a systematic rise in the value of multipliers. Fourth, we develop some explanations indicating why the Keynesian multiplier increases during recessions and, also, why it decreases on the long-run. Finally, we draw some conclusions in a fifth part.

1. Reviewing the literature on Keynesian multipliers

Trying to classify statistical studies on the size of fiscal multipliers is not an obvious task, especially if we think about the recent controversies raised by the IMF (see World Economic Outlook, 2012, pp. 41-43) and, among others, the director of its research department, Olivier Blanchard (see Blanchard and Leigh, 2013). Fortunately, for our purposes a convenient classification may still be proposed. In consequence, there exist four sorts of studies according to which: *i*) the multiplier is greater than unity, *ii*) the multiplier is smaller than unity or, in some cases, negative, *iii*) the multiplier depends on particular conditions (the chosen sample, the difference between transitory and permanent fiscal shocks...) and *iv*) the multiplier value depends on the economic context.

In the first group the Keynesian multiplier is found to be greater than one. This is the case of the first macroeconomic models developed after World War II by Klein and Goldberger (1955) for the US economy. Following this well-established Keynesian tradition, Ball (1963), and Evans (1966, 1969) show that fiscal policy is efficient to fight recessions for large countries like the US and the United Kingdom. More recently, Bagnai and Carlucci (2003) find for the European Union a multiplier value of 1.62 after five years assuming an increase in Government consumption. With French data on the period 1978-2003, Biau and Girard (2005) claim that an increase in public spending of 1€ quickly leads to an increase in GDP of 1.4€. Romer and Bernstein (2009), in a contested report for the Obama administration, find a fiscal multiplier of 1.44 for the first year. Focusing on the US economy, Fisher and Peters (2010) estimate a long-run spending multiplier, though based on military spending, equals to 1.5. Turning our attention to small European countries, Pereira and Roca-Sagalés (2011) explain that a 1€ reduction in aggregate public spending reduces output in the long run by 1.21€. Finally, Pusch (2012) finds rather important multipliers for Germany and France and for a series of other European economies, based on the fact that some imports are used in the production of exported goods and others are just domestically absorbed, following the logic initiated by Palley (2009). Previous results are encompassed in Table 1 below.

Table 1: Keynesian multipliers higher than unity

| | Country | Value* | Type of spending | Sample |
|------------------------------|----------|--------|------------------|-----------|
| Klein, Goldberger (1955) | US | 2.26 | Total spending | 1929-1952 |
| Ball (1963) | UK | 1.44 | Total spending | - |
| Evans (1966, 1969) | US | 3.92 | Total spending | 1948-1962 |
| Bagnai, Carlucci (2003) | Europe | 1.62 | Consumption | 1960-1997 |
| Biau, Girard (2005) | France | 1.40 | Total spending | 1978-2003 |
| Romer, Bernstein (2009) | US | 1.55 | Total spending | - |
| Fisher, Peters (2010) | US | 1.50 | Military | 1959-2007 |
| Pereira <i>et al.</i> (2011) | Portugal | 1.21 | Total spending | 1980-2005 |
| Pusch (2012) | France | 1.72 | Consumption | 2000-2006 |
| | Germany | 1.76 | Consumption | 2000-2006 |

*Higher values of the multiplier

The second group of econometric works (see Table 2) contains Keynesian multipliers smaller than unity as in Barro (1981) for the US from 1942 to 1978 when he evaluates the efficiency of military spending. In the same vein, Mountford and Uhlig (2009) and Cogan *et al.* (2010) for the US economy find similar results for total public spending. The study of Burriel *et al.* (2010) also compares the Euro area and the US over the period 1981-2007, obtaining relatively small multipliers in the short-run. However, after five years they become close to zero, implying that fiscal policy is useless in the long-run. More radical studies, based on the principles of the Ricardian equivalence, are to be found in the studies of Perotti (2005) who shows anti-Keynesian results with negative multipliers for Canada and the United Kingdom in the short-run. Cerda *et al.* (2006) follow the same logic for Chile by calculating a short-run multiplier (*i.e.* one year) of -0.2 . For a sample of European countries, Marcellino (2006) obtains negative multipliers in Germany, Italy and Spain in the short-run and multipliers equal to zero in the long-run.

Table 2: Fiscal multipliers smaller than one and anti-Keynesian results

| | Country | Value or sign* | Type of spending | Sample |
|-------------------------|-----------|----------------|------------------|-----------|
| Barro (1981) | US | < 1.00 | Military | 1942-1978 |
| Mountford, Uhlig (2009) | US | < 1.00 | Total spending | 1955-2000 |
| Cogan et al. (2010) | US | 0.65 | Total spending | 1966-2004 |
| Burriel et al. (2010) | Euro area | 0.87 | Total spending | 1981-2007 |
| | US | 0.91 | | |
| Perotti (2005) | Australia | 0.21 | Total spending | 1960-2001 |
| | Canada | -0.28 | | 1961-2001 |
| | UK | -0.22 | | 1963-2001 |
| | US | 0.31 | | 1960-2001 |
| | Germany | 0.40 | | 1960-2001 |
| Cerda et al. (2006) | Chile | -0.20 | Total spending | 1833-2000 |
| Marcellino (2006) | France | > 0 | Total spending | 1981-2001 |
| | Germany | < 0 | | |
| | Italy | < 0 | | |
| | Spain | < 0 | | |

*Higher values of the multiplier

The third group contains studies in which fiscal policies depend on particular conditions; results are summarized in Table 3. Baxter and King (1993) evaluate different multipliers in the scope of a dynamic general equilibrium model based on US data. Their results strongly depend on the kind of fiscal shock (temporary or permanent) and on the financing of public spending (immediate new taxes or deficit). Blanchard and Perotti (2002) find, for the US, multipliers between 0.9 and 1.29 (at peak), depending on assumptions about trends during the period 1947-1997. Next, Freedman et al. (2009) show how important is the cumulative World multiplier depending on the monetary policy adopted and on the level of interest rates. On a theoretical basis, Eggertson (2006) underlines the need for coordination between monetary and fiscal policies so as to increase the size of the multiplier. Finally, Ramey (2011) obtains fiscal multipliers between 0.6 and 1.2 also depending on the selected subsample.

Table 3: Multipliers depending on special conditions

| | Country | Value or sign | Type of spending | Sample |
|---------------------------|---------|---------------|------------------|-----------|
| Baxter, King (1993) | US | -2.50 / 1.20 | Total spending | - |
| Blanchard, Perotti (2002) | US | 0.90 / 1.29 | Total spending | 1947-1997 |
| Freedman et al. (2009) | World | 1.60 / 3.90 | Investment | - |
| Ramey (2011) | US | 0.60 / 1.20 | Total spending | 1939-2008 |

A last influential group, dealing with Keynesian multipliers according to the state of the economy, brought new results. The basic idea consists in evaluating fiscal multipliers at different levels of capacity utilisation or in a recession (see Parker, 2011) and to show that they strongly increase during turbulent times. Some serious advances have been made by Auerbach and Gorodnichenko (2012), Gordon and Krenn (2010) and Fazzari et al. (2012) for the US or the OECD for total (or military) expenditures. Here, it is to note that fiscal multipliers are always bigger for defense spending with respect to consumption or total expenditures. Candelon and Lieb (2013) confirms the previous studies for the US economy by finding fiscal multipliers of 2.4 in bad times and around 0.5 in expansion. Besides, studies for single European countries also exist and indicate similar results for France and Spain (see Creel et al., 2011; Hernandez de Cos and Moral-Benito, 2013). For example, in the case of Spain, the authors obtain short-run multipliers between 0.6 and 1.4 depending on the state of the economy.

Table 4: State-dependent multipliers

| | Country | Value or sign* | Type of spending | Sample |
|---|---------|----------------------------|----------------------------|-----------|
| Auerbach, Gorodnichenko (2012) | US | 0.57 / 2.48 0.80 / 3.56 | Total spending Military | 1947-2008 |
| Creel et al. (2011) | France | 0.50 / 1.10 | Total spending | 1980-2008 |
| Gordon, Krenn (2010) | US | 0.90 / 1.80 | Total spending | 1913-1941 |
| Fazzari et al. (2012) | US | 0.60 / 1.60 | Total spending | 1967-2011 |
| Hernandez de Cos and Moral-Benito (2013) | Spain | 0.60 / 1.40 | Total spending | 1986-2012 |
| Candelon, Lieb (2013) | US | 0.50 / 2.40 | Total spending | 1968-2010 |

**Right column for recessions, left column for expansions

From this last point of view, cutting public spending during a recession or a period of slow growth, with a fiscal multiplier largely above unity, is a very dangerous economic policy. Indeed, austerity policies adopted in countries like Greece, Spain, Portugal and Italy literally extended the negative impact of the 2008 financial crisis by ruining the economic recovery and ultimately deteriorating public finances.

2. Methodology and data

2.1 Simple is better than complex

Compared with the above literature, we choose to deal with very simple Keynesian multipliers in our methodology. For us, simple is better than complex. In a way, we agree with Krugman (2000, pp. 40-1) on the necessity to use simple models when dealing with the economic policy issues of the world in which we live:

« The point is not that these models are accurate or complete, or that they should be the only models used. Clearly they are incomplete, quite inadequate to examining some questions, and remain as full of hoc as ever. But they are easy to use, particularly on real-world policy questions, and often seem to give more or less the right answer. [...] What we know pretty well, from decades of trying to give micro-foundations to macro, is that logical completeness and intellectual

satisfaction are not necessarily indications that a model will actually do a better job of tracking what really happens. For many purposes the small, ad-hoc models are as good as or better than the carefully specified, maximizing intertemporal model. »

We may have chosen a different path, which integrates more assumptions and more supposedly realistic microeconomic behaviors. But, we would have thus lost in simplicity, with no significant increase in the explanative power of the model. Moreover, our methodology is nearly free of any theoretical preconceptions, and our results may be used in different theoretical paradigms without having to retreat the database from supposedly biased assumptions.

In this paper, we rely on simple Keynesian multipliers. Indeed, our calculation of fiscal multipliers is based on macroeconomics textbooks. We only have to use data for real output, real consumption and real imports. Our methodology allows us for a calculation of fiscal multipliers for every country every year. Consequently, we are able to review the evolution of fiscal multipliers both in time and in space on a very large scale.

We start from the traditional decomposition of aggregate output/income:

$$Y = C + I + G + X - M \quad (1)$$

with Y the level of real output, C the level of real consumption, I the level of real investment, G the level of real public spending, X the level of real exports and M the level of real imports.

Then, we only assume that consumption and imports depend on output, according to two very simplistic macroeconomic functions:

$$C = C(Y) = cY \quad (2)$$

$$M = M(Y) = mY \quad (3)$$

with c the marginal (and average) propensity to consume out of income and m the marginal (and average) propensity to import out of income.

These two equations only tell us that the more the economy grows, the more it consumes and the more it imports. We can thus rewrite the decomposition of output as:

$$Y = cY + I + G + X - mY \quad (4)$$

At this stage, we take investment, public spending and exports as « autonomous » components of aggregate output. We do not assess that these three sources of demand are independent of output in reality, but we assume it for the purpose of the question at hands. From this set of assumptions, it follows that aggregate output can be written as:

$$Y = \left(\frac{1}{1-c+m} \right) (I + G + X) \quad (5)$$

In this paper, the fiscal multipliers, k , is then given by:

$$k = \frac{\partial Y}{\partial G} = \frac{1}{1-c+m} \quad (6)$$

While dividing first consumption and then imports by output, we are able to calculate the two *average* propensities, whereas we need *marginal* propensities in equation 6. What we call propensities are rather shares of consumption and imports in GDP, and it is only because we assume very basic behavioral equations in (2) and (3) that we have equality between marginal and average propensities. Since we use average propensities to account for marginal propensities (in the long run, the marginal propensities tend to become the average propensities), our multipliers' calculations may be viewed as a proxy for the theoretical multiplier.¹ Another remark has to be done regarding our methodology: traditionally, the propensity to consume is based on gross disposable income, instead of gross domestic product. This special understanding has to be reminded in the remaining of the paper. Especially, our propensity to consume does not include properly tax and redistribution. So to close our model, one has to precise that the complement to one to this propensity includes both saving and net redistribution (through taxes and current transfers received and paid by households). Even though tax and redistribution are not explicitly present in our framework

¹ Another reason to justify the choice of average rather than marginal propensities relies on the instability of raw marginal propensities. For example, if you take the marginal propensity to consume as defined by the ratio between the annual variation in consumption and the annual variation in output, you resort with an infinite marginal propensity to consume every time there is no (or very little) variation in output. You may then arrive at a meaningless result: an infinite value for the multipliers whenever there is output stagnation!

(they are hidden in the complement to one to the propensity to consume), it does not mean that we calculate tax free multipliers.

Beyond the precautionary caveats regarding our methodology, the traditional textbook comments apply for the multipliers in equation (6): the higher the propensity to consume, the higher the multiplier; the higher the propensity to import, the lesser the multiplier. The willingness to save and the openness of the economy are the two leakages that impair the efficiency of an increase in public spending. Depending on whether households consume an important share of the added income they receive following the increase in public spending, and whether households spend this increased income mainly on nationally produced goods and services, the second round effect of the initial public spending will not be as high as if households use their increased incomes to save and/or buy foreign goods and services. The value of fiscal multipliers is determined by only two parameters, and the differences in multipliers' values are thus to be found in different propensities to consume and/or import according to different countries or different periods.

2.2 A long, slow and unavoidable decline

Using AMECO database,² we build multipliers' calculations for 23 countries along the 1960-2013 period. While espousing this historical perspective, we can draw some interesting conclusions on these simple multipliers' values, and their evolution. Some preliminary results are gathered in table 5:

² We use the following series to build our multipliers: Gross domestic product at 2005 market prices (OVGD) for real output (Y), Private final consumption expenditure at 2005 prices (OCPH) for real consumption (C), and Imports of goods and services at 2005 prices (OMGS) for real imports (M).

Table 5: Multipliers' values in historical trends

| Country | 1960 | 1970 | 1980 | 1990 | 2000 | 2010 | Variation (1960- 2010) |
|----------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------------|
| Germany | 1.75 | 1.68 | 1.65 | 1.53 | 1.41 | 1.16 | -33.4% |
| France | 2.08 | 1.86 | 1.75 | 1.67 | 1.44 | 1.43 | -31.1% |
| Italy | 1.86 | 1.82 | 1.80 | 1.70 | 1.55 | 1.48 | -20.4% |
| Spain | 2.35 | 2.14 | 2.12 | 1.78 | 1.44 | 1.37 | -41.9% |
| Austria | 1.81 | 1.55 | 1.43 | 1.34 | 1.15 | 1.06 | -41.8% |
| Denmark | 1.74 | 1.60 | 1.45 | 1.30 | 1.11 | 1.01 | -41.8% |
| Netherlands | 1.43 | 1.34 | 1.31 | 1.15 | 0.94 | 0.81 | -43.2% |
| Ireland | 2.35 | 1.69 | 1.46 | 1.20 | 0.82 | 0.81 | -65.7% |
| Greece | 2.30 | 1.86 | 1.84 | 1.91 | 1.47 | 1.70 | -25.9% |
| Portugal | 2.17 | 1.88 | 1.83 | 1.62 | 1.39 | 1.35 | -37.7% |
| Belgium | 1.43 | 1.15 | 1.11 | 1.00 | 0.84 | 0.80 | -44.3% |
| Switzerland | 1.86 | 1.69 | 1.62 | 1.42 | 1.29 | 1.19 | -36.0% |
| Norway | 1.45 | 1.27 | 1.27 | 1.22 | 1.17 | 1.19 | -17.5% |
| Sweden | 1.75 | 1.49 | 1.42 | 1.30 | 1.10 | 1.05 | -40.0% |
| Finland | 1.59 | 1.51 | 1.42 | 1.44 | 1.20 | 1.17 | -26.2% |
| Iceland | 1.38 | 1.38 | 1.35 | 1.38 | 1.29 | 1.24 | -10.0% |
| Japan | 2.53 | 2.07 | 2.10 | 1.91 | 1.86 | 1.85 | -27.0% |
| Korea | -- | 3.81 | 1.97 | 1.63 | 1.32 | 1.10 | -- |
| United States | 2.31 | 2.28 | 2.28 | 2.24 | 2.05 | 2.12 | -8.3% |
| United Kingdom | 1.87 | 1.74 | 1.71 | 1.71 | 1.59 | 1.53 | -18.5% |
| Canada | 1.89 | 1.65 | 1.63 | 1.50 | 1.26 | 1.33 | -29.5% |
| Australia | 1.91 | 1.81 | 1.85 | 1.79 | 1.64 | 1.45 | -24.0% |
| New Zealand | 2.00 | 1.92 | 1.81 | 1.66 | 1.50 | 1.46 | -27.0% |
| Average | 1.90 | 1.79 | 1.66 | 1.54 | 1.34 | 1.29 | -31.4% |

Note: The Table gives the annual values (in 1960, 1970 and so on) obtained from the AMECO database

There are two striking remarks to be made thanks to this table, one which is against conventional wisdom for neoclassical economists, and another one which is more widely held among economists of different paradigms: *i*) multipliers are nearly always above unity; *ii*) multipliers has undergone a generalized decline along the period.

It may appear as a surprise for neoclassical economists that our multipliers are above unity. Here, while using a simple, accounting methodology, we find multipliers bigger than one for nearly every country on every period. The only countries where multipliers are lesser than unity (Netherlands, Belgium, Ireland) are small, very open economies. This result is consistent with standard textbook where multipliers are bigger in large, relatively more closed

economies. We find that the highest value for multiplier stands for the biggest economy of the sample, the United States.

The second statement posits a generalized decline of multipliers' values, since it has lost on average approximately one third of its value along the period. The drop is even bigger for many countries, and once again, the United States contrast with this sample, as the decline in multiplier's value is far more modest than elsewhere (8.3%). This generalized decline for multipliers' values was expected because of the increased openness of most of the world economies since the end of World War II, and more specifically since the end of the Bretton Woods system. This increased openness is the most commonly used argument to avoid the implementation of Keynesian demand policies, because stimulus policies would end in increased leakages through imports instead of domestic productions.

Thanks to a subset of our database, we are able to represent this globalization through the evolution of import propensities for different types of countries:

Figure 1: Import propensities in historical trends

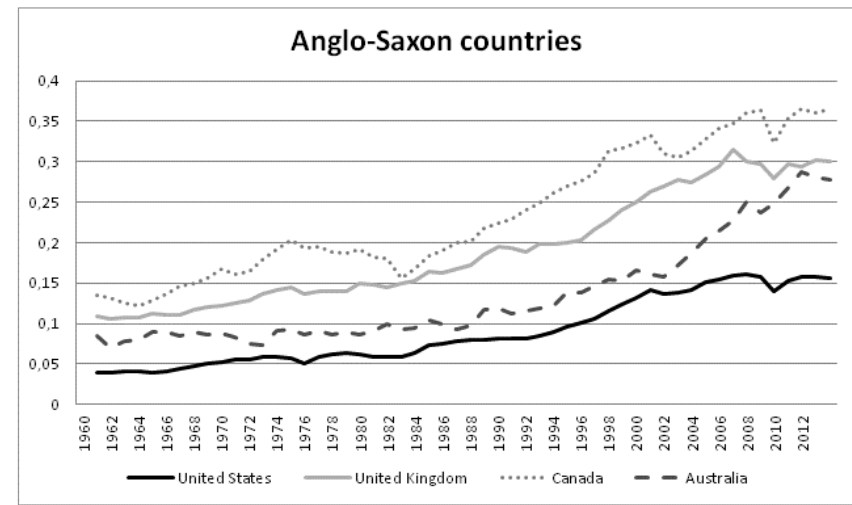
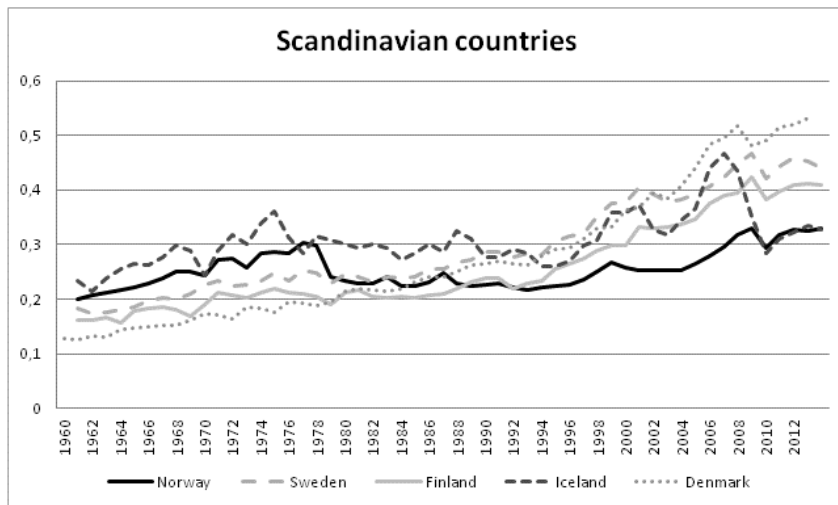
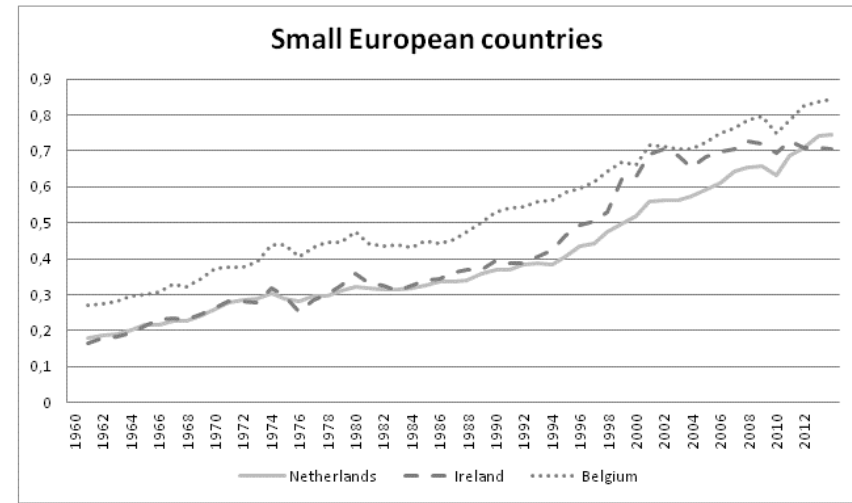
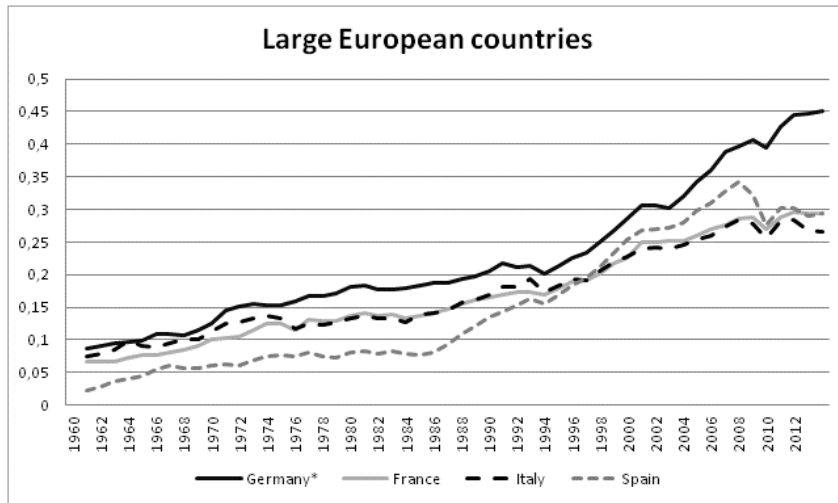
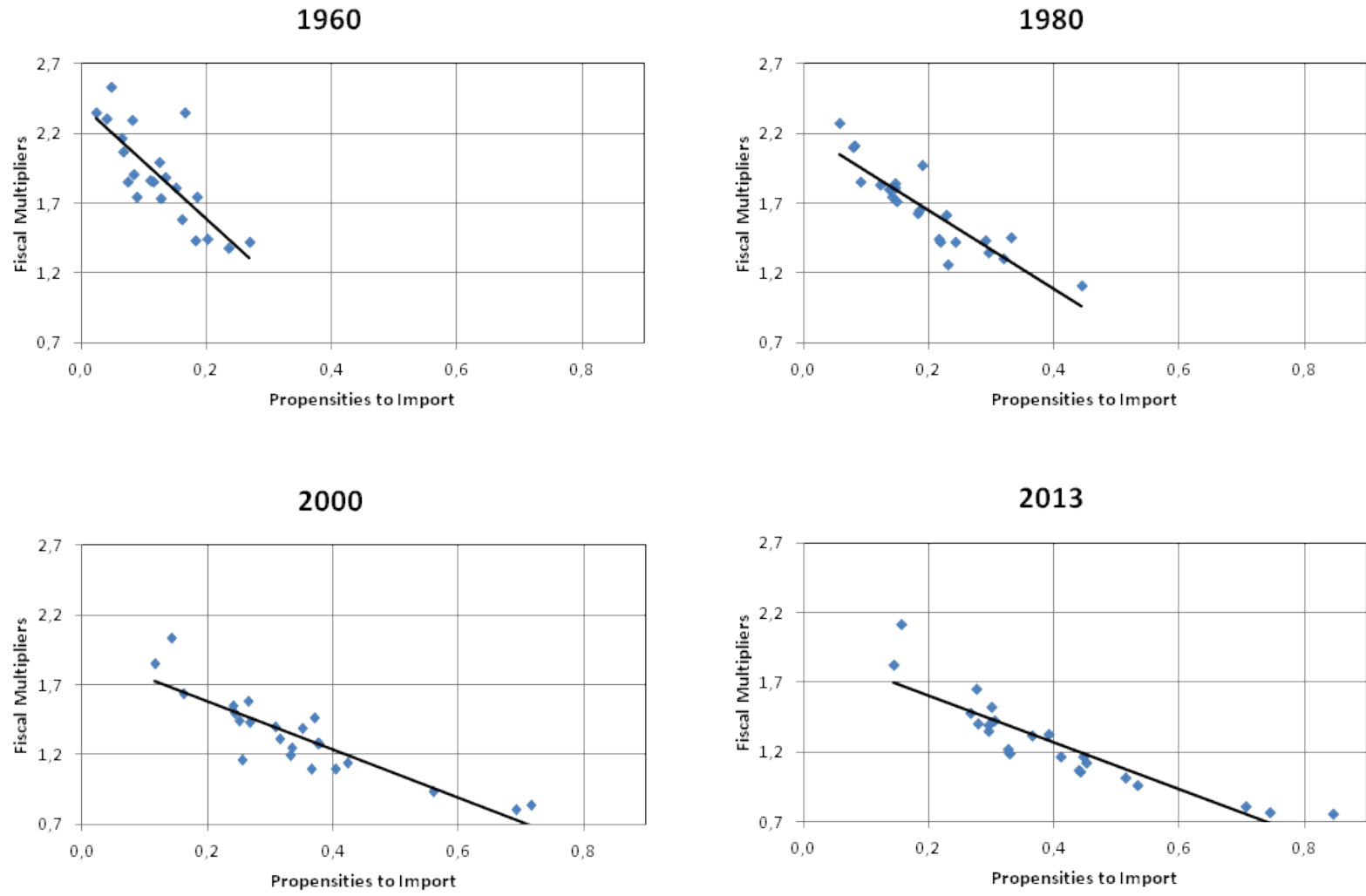


Figure 2: Import propensities and fiscal multipliers



There is a clear evidence in support of a strong increase in import propensities, with a notable acceleration since the beginning of the 1990s.³ In Figure 2, we draw a plot for every country in a plan “import propensities / fiscal multipliers” for four years along the period 1960-2013. Obviously, for each year, the four plans show a negative relationship between import propensities and fiscal multipliers. But along the time, we also clearly see a general move to the south-east of the four clouds, which means that fiscal multipliers decline while the propensities to import go up. As shown in Figure 2 above, globalization is responsible for the decline in multipliers' values.

The diminished efficiency of demand policies in open economies placed in a world of free trade is an undisputed fact for economists of various paradigms, since even Keynesian economists agree with the necessity to coordinate demand policies. But, for Keynesian economists, there are other causes that need to be investigated so as to weigh their influence in the evolution of multipliers' values. Especially, regarding our simple multipliers, a taste for symmetry leads us to look at the evolution of the second propensity present in our multiplier's equation. The propensity to consume is subject to various determinants from a Keynesian point of view. First, if one takes seriously the consequences of globalization and financialization, one is obliged to consider the evolution of income distribution between wage and profit on the one hand, and among wages, between low wages and high wages on the other hand. There is a huge literature on growing inequalities (Piketty et Saez, 2006) and on the declining labor share in income (Onaran, Stockhammer and Grafl, 2011; Stockhammer, Onaran and Ederer, 2009). To put it in a nutshell, these changes in both personal and functional income distribution has to lead to a fall in the propensity to consume. The point is

³ For European countries, it can be associated to the building of the European Union with the creation of a common market since the adoption of the Single European Act (1987). The economic integration was reinforced with the adoption of the Maastricht Treaty (1993). Outside Europe, other regional constructions have also contributed to this tendency (NAFTA, ASEAN, ...). International agreement on tariffs (GATT and WTO) and transnational corporations' localization strategies have also played a significant part in this increased propensities to import.

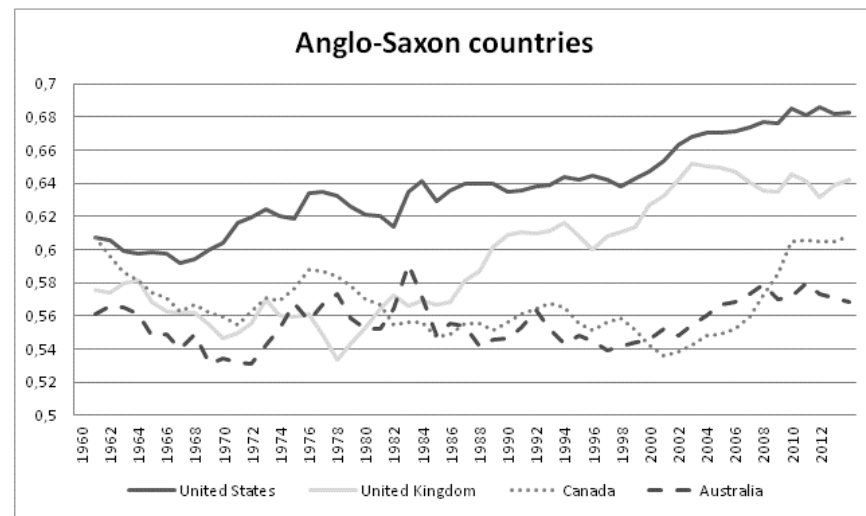
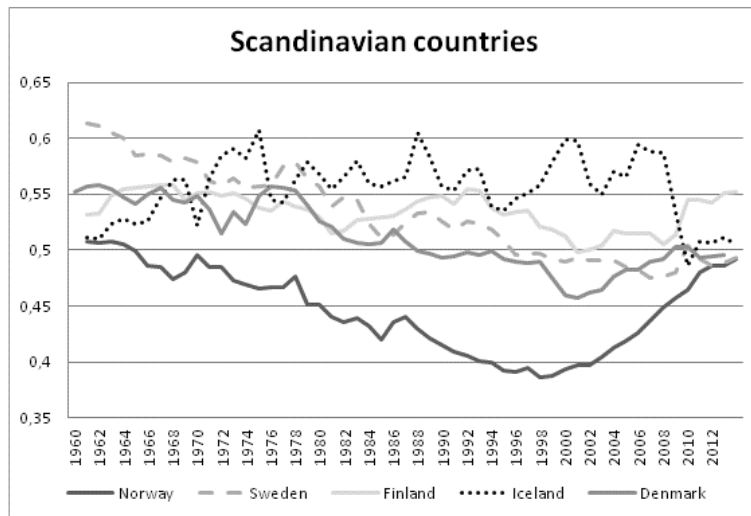
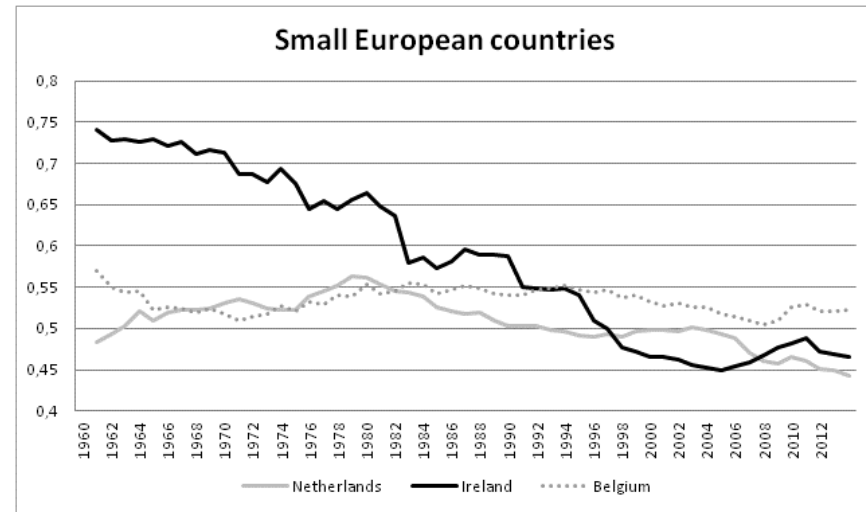
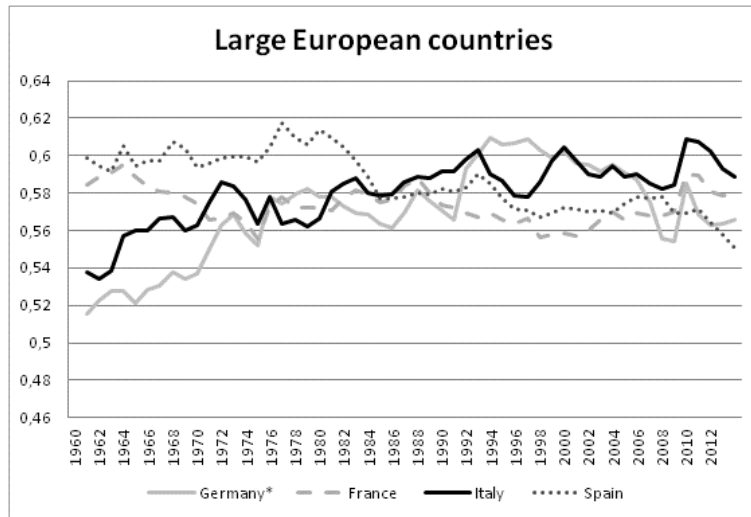
that the poor spend a larger part of their income as compared to the rich, and that wages are more spent than (distributed) profits. Another typically Keynesian argument stands in favor of a declining propensity to consume in historical trend. According to the paradox of poverty amidst plenty, Keynes (1936) pretends that the richer the community grows, the lesser the part of its income dedicated to consumption.⁴ The economy in our sample has known a surge in their Gross Domestic Product since the 1960s, so we are expected to observe a declining propensity to consume. Nevertheless, the data does not show such a tendency for every country of the sample (see Figure 3 for an overview). For some countries, the propensity to consume is actually decreasing (Spain, Denmark, Ireland, Austria, Netherlands, Sweden, Japan, Korea), whereas for some countries, there is no clear tendency to a drop in this propensity to consume (France, Germany, Belgium, Switzerland, Finland, Iceland, Australia, New Zealand). There are even countries where the propensity to consume is oriented upward (Greece, Portugal, Italy, Norway, United Kingdom, United States, Canada). These three groups gather countries that do not seem to share obvious characteristics, so that, at this stage, we will not put forward definitive conclusions on these differentiated evolutions in the propensity to consume.⁵

Beyond these national cases that should be disentangled concerning the propensities to consume, what is clear is that the increasing import propensities due to globalization is the force that drives down multipliers' values on the all sample. After this survey of the long run determinants of multipliers' values, we deal in the fourth section with a shorter time horizon, since we try to figure out the determinants of multipliers' values during recessions. But, the next section first discusses our identification and categorization of recessions in the sample.

⁴ This desire to save more will end in a depressed economy with increased unemployment if investment does not improve. And the dire fate of capitalism is precisely that there is no reason why firms will invest more at the very moment where the economy spends less.

⁵ Only can we allude to one of its mains determinants: the propensity to consume may be oriented upward (or be prevented to fall) thanks to households' indebtedness and/or wealth effects in consumption behaviors.

Figure 3: Propensity to consume in historical trends

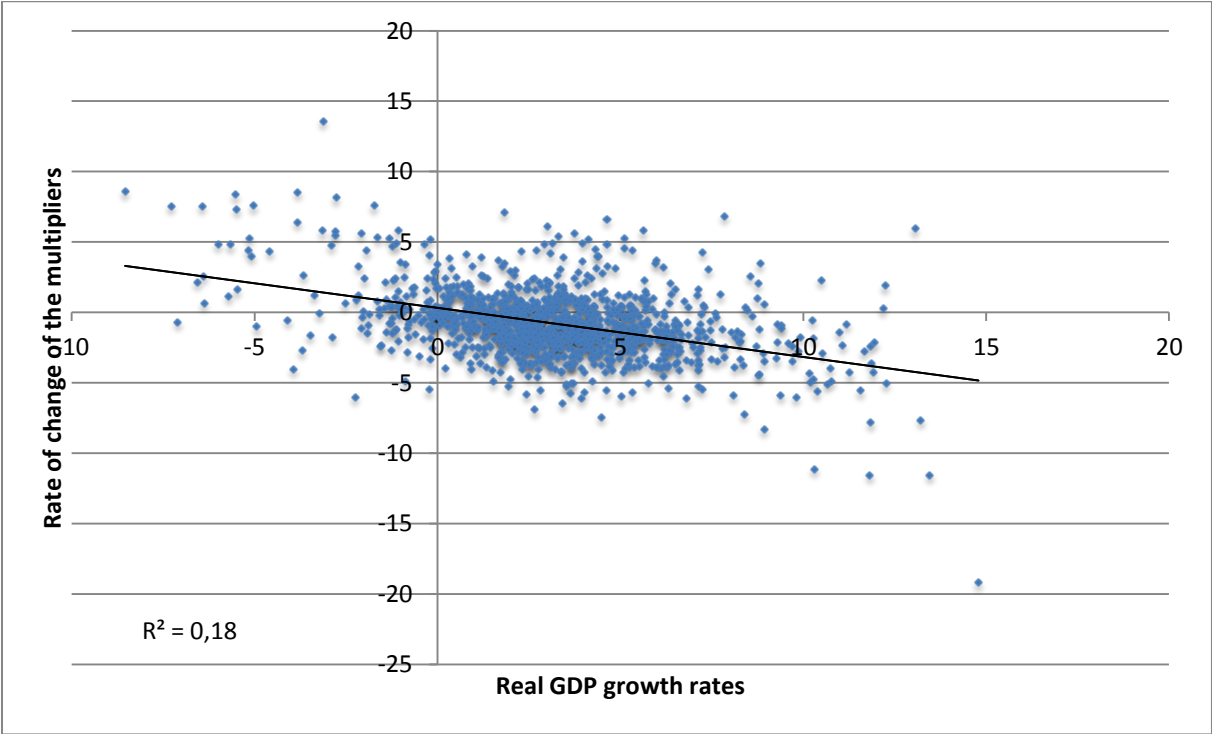


3. Dealing with recessions

In this section, we deal with the short term and with interactions between fiscal multipliers and macroeconomic variables.

In the following Figure 4, from our sample, we put in relation in the graph the registered rate of change in the fiscal multiplier and the growth rate of real GDP in the same year. We then remark a negative relationship between GDP growth rates and rates of change of our multipliers observed the same year. From now on in this article, we focus on the evolution of multipliers during recessions.

Figure 4: Annual GDP growth rates and rates of change of the multipliers

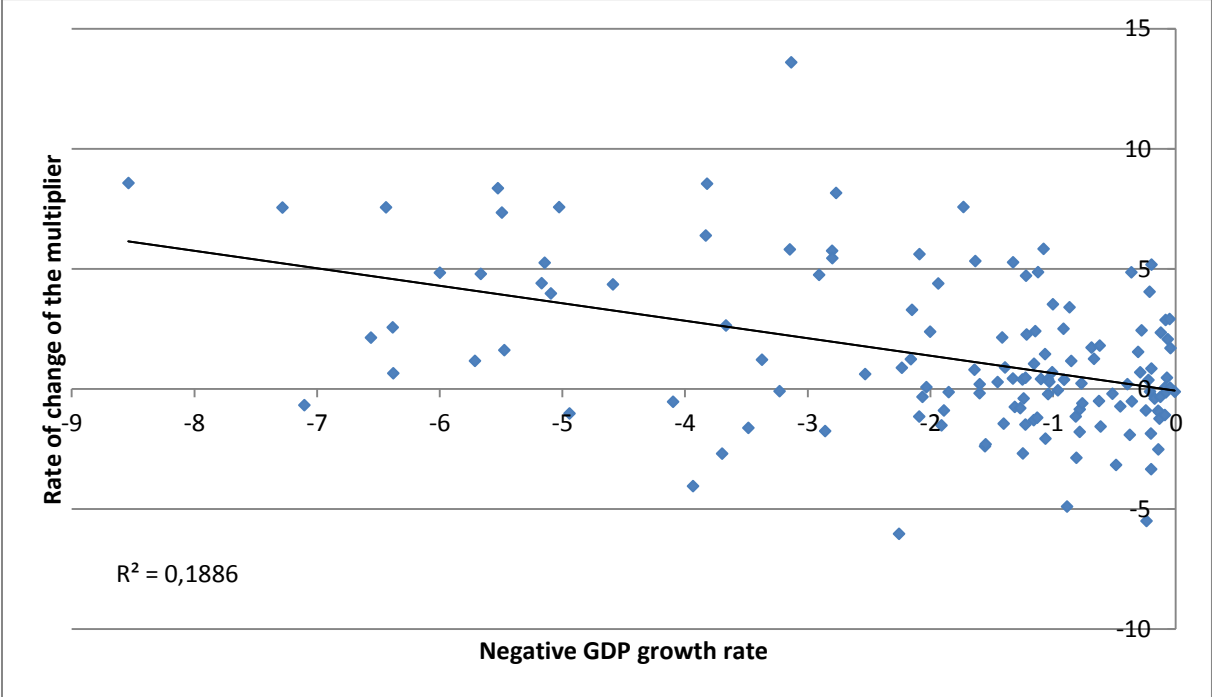


3.1 What happens with multipliers when we observe recessions?

Hereafter, we simply define a recession as a negative GDP growth rate mentioned in the database. In this way, we obtain 138 national recessions from our sample on the period 1961-2013. Most of them are observed during four specific periods of international macroeconomic

instability, namely: the 1st oil crisis (during 1974 and 1975, 16 recessions are observed), the international monetary tightening of the early 1980's following the strategy led by the Fed from august 1979 to raise strongly the federal funds rate (19 observations of recession from 1980 to 1982) and during the "Great Recession" launched by the international financial crisis of 2008 (35 recessions observed from 2008 to 2010). The early 1990's is the fourth period during which we observe different recessions (23 recessions from 1991 to 1993); several congruent factors can be mobilized to explain this cluster: financial disturbances in the USA, geopolitical uncertainties, the European Monetary System crisis in 1992 and the Scandinavian debt crisis which affected Finland, Sweden, Norway and Denmark, four countries present in our sample. Figure 5 gives the rates of change of the multipliers when recessions are registered.

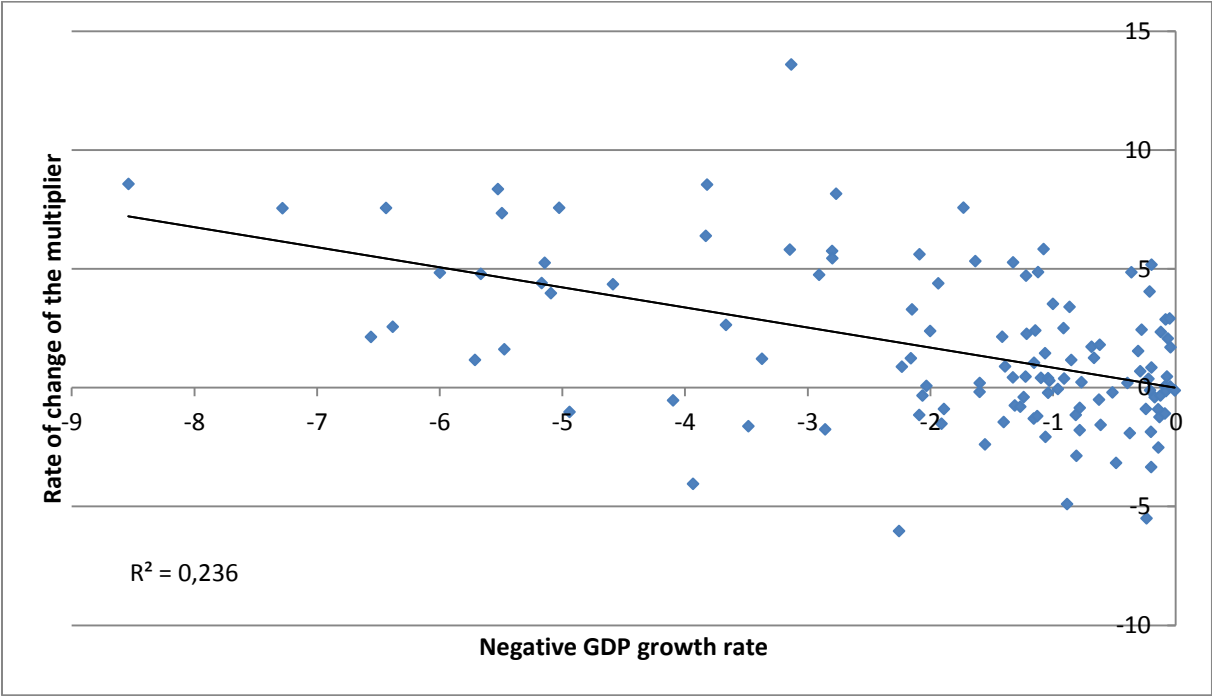
Figure 5: Rates of changes of multipliers when recessions are observed, 1961-2013



The Figure 5 confirms the negative statistical relationship between negative GDP growth rates and changes in the values of multipliers. In other words, in hard times, multipliers tend to be bigger than before the recession. Moreover, we also notice that: the worse the time, the bigger positive change of the multiplier.

The relationship is even more significant if we exclude from the sample the 17 recessions registered from 2010 onward (Figure 6). The recessions observed since then are characterized by small decreases in the multiplier, weakening our statistical relationship.

Figure 6: Rates of change of the multipliers when recessions are observed, 1961-2010



To understand this paradox, let us concentrate on these recessions that are presented in our sample since 2010. 21 cases occurred, mentioned in the following table. First column gives the real GDP growth rate year by year; second column the estimated rate of change of the multiplier; third and fourth columns the related rates of change of marginal propensity to consume and to import and lastly; the fifth column indicates if during the year the real total

government expenditure increased (+) or decreased (-). To obtain this result, we use the AMECO Database, specifically the OUTG serie (extraction of the 04/15/2014).

In this sub-sample, we observe only one recession from outside Europe (Japan, 2011). Among the 20 remaining cases, 2 occurred outside the Eurozone (Iceland, 2010; Denmark, 2012). Then, 18 cases on 21 are inside the Eurozone.

On these 18 cases, the multiplier evolved as expected in 5 cases (Portugal, 2011; Italy, Spain, Greece and Finland, 2012): it increased with the recession. But let us notice that those increases are induced by stronger decreases in the average propensity to import than the related decreases in the average propensity to consume or by a stronger increase in the propensity to consume than the propensity to import (Finland, 2012). It remains 12 very unpleasant cases for which the multiplier is positively related to the GDP growth rate. We have 4 cases for which the changes in the multipliers are close to 0 (Portugal, 2012; Italy, Netherland, Finland, 2013). It remains 8 observations for which, in spite of the recession, the multiplier decreases. For Ireland and Spain (2010), increases in the average propensity to consume are frustrated by stronger increases in the average import propensity. Lastly, for the 6 remaining cases (Greece, 2010; Belgium and Netherlands, 2012; Portugal, Spain and Greece, 2013), the decreases in the average propensity to consume are not thwarted by stronger decreases in the average import propensity.

Table 6: Paradox of the 2010s

| | | Growth rate of GDP | Rate of change of the multiplier | Rates of change of the average propensity to consume | Rates of change of the average import propensity | Changes in public spending | |
|-------------|-------------|-----------------------|-------------------------------------|--|---|----------------------------------|---|
| 2010 | Spain | -0.20 | -3.34 | 0.36 | 9.56 | + | |
| | Ireland | -1.06 | -2.07 | 1.53 | 4.75 | + | |
| | Greece | -4.94 | -1.02 | -1.37 | -1.29 | - | |
| | Iceland | -4.10 | -0.53 | 4.37 | 8.94 | + | |
| 2011 | Greece | -7.10 | -0.67 | -0.66 | -0.26 | - | |
| | Portugal | -1.25 | 0.40 | -2.06 | -4.10 | - | |
| | Japan | -0.45 | -0.72 | 0.72 | 6.39 | + | |
| 2012 | Italy | -2.53 | 0.62 | -1.65 | -5 | - | |
| | Spain | -1.64 | 0.80 | -1.17 | -4.12 | + | |
| | Denmark | -0.36 | -0.51 | 0.25 | 1.26 | + | |
| | Netherlands | -1.25 | -2.68 | -0.4 | 4.64 | - | |
| | Greece | -6.38 | 0.65 | -2.87 | -7.89 | - | |
| | Portugal | -3.23 | -0.13 | -2.19 | -3.50 | - | |
| | Belgium | -0.14 | -1.48 | -0.12 | 1.46 | + | |
| | Finland | -1.01 | 0.70 | 1.34 | 0.32 | + | |
| | 2013 | Italy | -1.85 | -0.13 | -0.62 | -1.04 | - |
| | | Spain | -1.23 | -1.48 | -1.23 | 1.42 | - |
| Netherlands | | -0.76 | -0.60 | -1.33 | 0.24 | - | |
| Greece | | -3.70 | -2.69 | -3.64 | -3.19 | + | |
| Portugal | | -1.55 | -2,30 | -0.22 | 4.25 | + | |
| Finland | | -1.45 | 0.29 | 0.42 | 0 | + | |

The decreases in the average propensity to consume during recessions could seem very surprising. In a recession (a decline in the GDP), we usually observe a smaller decline in the disposable income, due to the existence of automatic stabilizers. Then, the consumption should decrease, but in proportion, such a decline should be smaller than the reduction of the GDP. So, the average propensity to consume, calculated as the total consumption out of GDP, should rise.

When the opposite result is observed (*i.e.* a decline in the average propensity to consume out of GDP), it means *i)* that agents have changed their behavior (private agents decrease their

average propensity to consume out of gross disposable income) and/or *ii*) that austerity policy measures are adopted (aiming at increasing the fiscal resources and/or at diminishing the public expenditure). In the second case, this policy necessarily induces a decrease in gross disposable income, which may be bigger than the decrease in GDP. Then, the automatic stabilizer effects are thwarted, and consumption spending does not soften the scale of recession.⁶ For the first case, agents seem to anticipate a further degradation of the macroeconomic situation, so that they *try*⁷ to bring out precautionary saving. These dire prospects could be accentuated by government communication in support of austerity. We are here dealing with an important issue, with major incidences for economic policy in the Eurozone: austerity, be it real or even simply feared, provokes a severe decline of aggregate demand because of sluggish gross disposable income and households' attempts to save. In such situations, we jointly observe a reduction in the multiplier and a degradation of the state of confidence. 10 observations from the table are fully consistent with this reasoning (Greece, 2012, 2011, 2012; Portugal, 2011, 2012; Italy, 2012, 2013; Netherlands, 2012, 2013; Spain, 2013). In such cases, we believe that the degradation of the state of confidence is fed at the same time by the recession and by the decrease in public spending (*cf.* Table 6)⁸.

⁶ For a given propensity to consume out of gross disposable income, the drop in gross disposable income is contractionary for aggregate demand. But, despite this drop in gross disposable income, consumption spending may be sustained through a fall in the propensity to save, and especially through indebtedness. For poor households, the maintaining of consumption standards despite lower income refers to incompressible consumption for survival: at the difference of what is to be developed in the section 4.2 below, the decrease in the propensity to save may not be due here to a *desire* for consumption, but to a *need* for consumption.

⁷ This attempt to bring out a bigger propensity to save may fail to become an effective bigger propensity to save, due to the paradox of thrift.

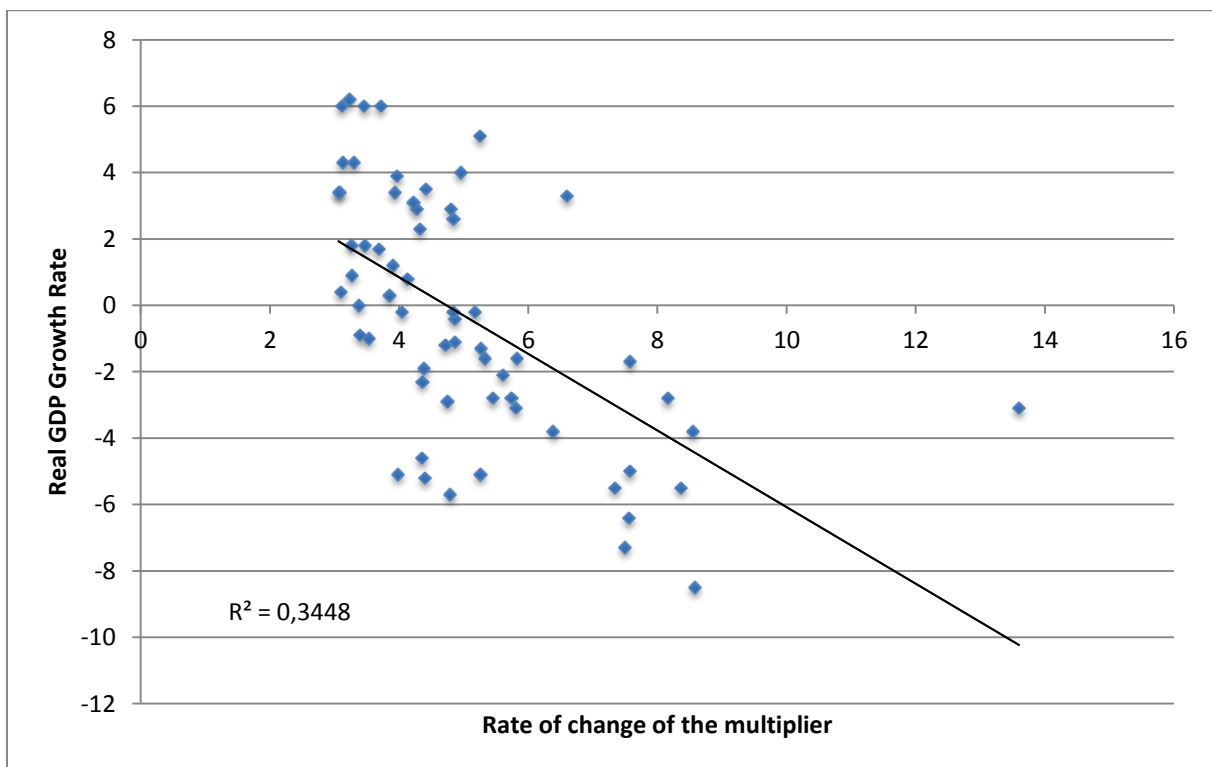
⁸ We leave for further researches the specific analysis of our « Euro paradox ». The specific effects of the austerity measures on the multiplier and of a possible change of behavior from the private agents should be precisely analyzed, so as to be clearly distinguished. Such an analysis would require lots of space, and it is thus beyond the scope of this paper.

3.2. What happens when fiscal multipliers increase?

As previously, we intend to represent relationships between annual changes in the fiscal multipliers and GDP growth rates.

But from now on, we extract from our full sample only the important and positive variations of the multipliers. Arbitrarily, we decide to consider a variation of the multiplier as important if its growth rate is at least of 3%. 63 observations can be found in the sample. Then, we simply put the corresponding values of the growth rates of the GDP to draw our cloud of points: it gives the Figure 7.

Figure 7: Real GDP growth rate when multipliers increase, 1961-2013



Consistently with the previous figures, we notice a statistical negative relationship between positive changes in the multiplier and the real GDP growth rate. Moreover, this last relationship seems to be more statistically significant. Our reasoning is reinforced.

4. Multipliers in recessions always bigger when it is harder

Since our multiplier is based on very simple accounting relationships, its value only depends, on a first step, on two parameters (see equation 6 above), i.e. the propensity to import and the propensity to consume. If the multiplier increases in recession, it is necessarily due to either changes in the propensity to import, or changes in the propensity to consume, or a combination of both propensities. In the first paragraph, we detail the origins of import propensities' changes, and in the second paragraph, we present what could be the sources of changes in the propensity to consume.

4.1 Changes in import propensities

So as to deal with the changes in import propensities, we rely on the methodology contained in Palley (2009). In this inspiring paper, Thomas Palley reinterprets the traditional presentation of the GDP, while attributing to each component of aggregate demand its content in imports. Thus, Palley is able to rewrite GDP as:

$$Y = (1 - \alpha)C + (1 - \beta)I + (1 - \gamma)G + (1 - \delta)X \quad (7)$$

Here, we keep the traditional import function, but we disaggregate the average propensity to import (m) in four propensities to import that apply to consumption (α), investment (β), public expenditures (γ), and exports (δ):

$$Y = cY + I + G + X - mY \quad (4)$$

$$\text{with } m = \alpha \frac{C}{Y} + \beta \frac{I}{Y} + \gamma \frac{G}{Y} + \delta \frac{X}{Y}$$

$$\text{and } \alpha = \frac{C_m}{C}, \beta = \frac{I_m}{I}, \gamma = \frac{G_m}{G}, \delta = \frac{X_m}{X}$$

where C_m , I_m , G_m and X_m are respectively the import contents of consumption, investment, public expenditures, and exports.

Bussière et al. (2013) propose an empirical investigation through OECD data that allow them to establish values for these parameters for 1995, 2000 and 2005.⁹

Table 7: Import contents of each component of aggregate demand for 2005

| Country | Import content of private consumption | Import content of government consumption | Import content of total investment | Import content of exports |
|----------------|---------------------------------------|--|------------------------------------|---------------------------|
| Germany | 22.6 | 8.6 | 31.1 | 27.2 |
| France | 22.7 | 8.7 | 25.4 | 27 |
| Italy | 21.3 | 7.2 | 27.3 | 29 |
| Spain | 24 | 11.3 | 28.3 | 34.2 |
| Austria | 28.7 | 11.5 | 42.7 | 34.7 |
| Denmark | 31.8 | 10.4 | 39.1 | 34.9 |
| Netherlands | 30.3 | 11.3 | 39.3 | 34.9 |
| Ireland | 37.1 | 14.4 | 41.5 | 50.7 |
| Greece | 24.1 | 9.9 | 35.5 | 25.9 |
| Portugal | 29 | 9.5 | 36.1 | 38.9 |
| Belgium | 33.6 | 12.4 | 49.7 | 43.2 |
| Switzerland | 24.4 | 9.3 | 33.9 | 25.3 |
| Norway | 32 | 10.9 | 36.4 | 16.2 |
| Sweden | 28.1 | 11.2 | 43 | 33.2 |
| Finland | 26.8 | 12 | 32.4 | 38 |
| Iceland | 14.8 | 5.5 | 24.4 | 27.1 |
| Japan | 11.7 | 6 | 15.3 | 15.4 |
| Korea | 24.2 | 10.5 | 28.9 | 38.6 |
| United States | 11.9 | 6.2 | 17.3 | 12.3 |
| United Kingdom | 27.2 | 12.5 | 25.4 | 18.6 |
| Canada | 25.8 | 9.8 | 34.8 | 27.4 |
| Australia | 18.4 | 9.9 | 26 | 14 |
| New Zealand | 21.4 | 9.8 | 39.3 | 17.5 |

Beyond the precise value of each disaggregated import propensity for every specific country on one year, we keep the hierarchy between the import propensities on different components. Indeed, what is striking in Bussière et al. (2013) studies is the superiority of exports' and investment's import contents compared to both private and government consumption

⁹ They use OECD data, but they transform it to make import contents appear for each aggregate demand component. This difference of data source and their calculation make their disaggregated import propensities more difficult to compare to our global import propensities.

expenditures' import contents.¹⁰ For the countries of our sample, investment and exports tend to incorporate more imports than consumption and public expenditures. To explain these differences, we have to mobilize actors' strategies: households' consumption is in a large part dedicated to services that are difficult to delocalize (for example, residential economics and personal services, care), whereas transnational corporations are engaged in strategies of optimizing their supply chains in different countries with intra-corporations imports and exports and with selection of investment providers according to the international specialization.

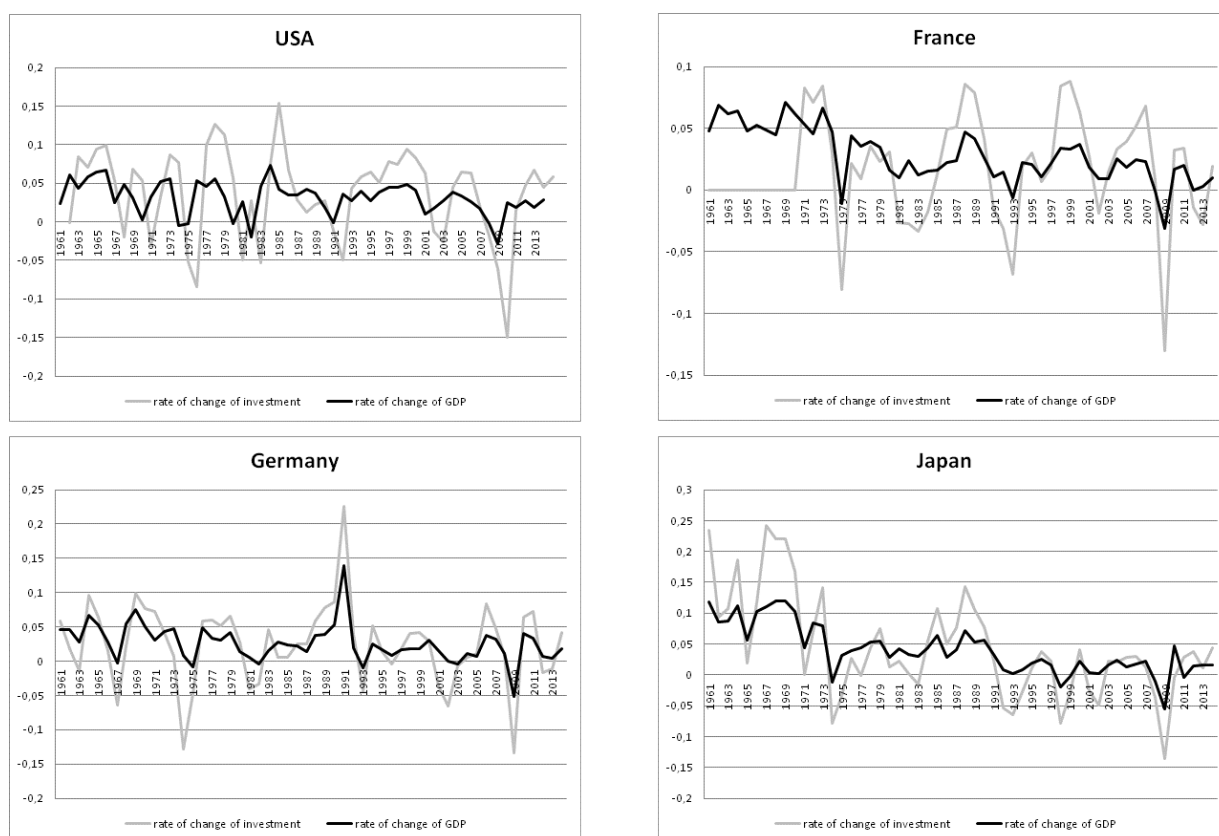
This difference of import contents may be used to explain the fall in the average import propensity during recession. But, to be completed, the argument needs to include a reference to a standard concept of old economic theory: the accelerator principle developed by Aftalion (1908) and Clark (1917). At the origin, the accelerator principle simply assesses that investment reacts strongly to changes in economic activity, so that the rate of change of investment is bigger than the rate of change of GDP:

$$I_t = A(Y_t - Y_{t-1}) \text{ with } A = \frac{K}{Y} > 1 \leftrightarrow \frac{\Delta I}{I} > \frac{\Delta Y}{Y} \quad (8)$$

Investment volatility may be observed at the macroeconomic level:

¹⁰ Except for Norway, United Kingdom, Australia and New Zealand, where the imports' content of exports is less than the imports' content of private consumption.

Figure 7: Investment accelerator



During a recession, investment drops more sharply than GDP, so that the share of investment in GDP falls. As investment expenditures leak more strongly in imports than other expenditures, the average import propensity declines and the multiplier is strengthened:

$$\frac{\Delta Y}{Y} < 0 \leftrightarrow \frac{\Delta I}{I} \ll 0 \leftrightarrow \frac{I}{Y} \text{ drops} \leftrightarrow \left(\beta \frac{I}{Y}\right) \text{ drops} \leftrightarrow m \text{ drops} \leftrightarrow k \text{ increases}$$

A similar reasoning may be led towards exports' volatility. Even though the rate of change of domestic exports is not directly linked to domestic growth, one can see that the rate of change of exports is bigger than the rate of change of GDP.

Figure 8: Exports amplifier



This “exports amplifier” relies on the harmonization of economic stance around the world, with each domestic growth being more and more aligned on world growth because of globalization and increased international exchanges. For our concern, these over-reactions of exports to GDP lead to changes in the average propensities to import, since the imports’ contents of exports are bigger than the imports’ contents of consumption and public expenditures. Consequently, a recession may lead to a shrinkage in exports, and thus to a reduced propensity to import which supports the value of multipliers.

To put it in a nutshell, recessions, while making investment and exports collapse, allow for a recovery in multipliers because of important imports’ contents of investment and exports.

4.2 Changes in the propensity to consume

Whereas the changes in import propensities are crucial to understand why fiscal multipliers are bigger in hard times, another determinant is often understated when it comes to evaluate changes in multipliers values. Indeed, the propensity to consume is not constant during recessions. For example, during the 2008-9 recession, the average propensity to consume underwent various dynamics, as shown in Figure 3 above: for some countries, the recession first induces a strong, one-year increase in the propensity to consume (France, Italy, Germany), and then a decline for the following years; while for some other countries, the propensity to consume falls more or less sharply (Spain, Denmark, Iceland) or stay roughly constant (United States, United Kingdom,...) all along the recession. These movements in the propensity to consume have implications for multipliers' value, and we consider the plausible explanations for these dynamics through the lens of Pasinetti's works on social classes (Pasinetti, 1962).

The typically Keynesian argument (already present in Keynes, 1936) for consumption behavior is that workers and rentiers do not have the same propensity to consume.¹¹ Whereas (poor) workers tend to spend roughly all their incomes in consumption due to budgetary constraints, (rich) rentiers are able to save a significant share of their incomes. For the community as a whole, the average propensity to consume then depends on income distribution. In a situation of unemployment, there is room for public policies aiming at redistributing income from (rich) rentiers to (poor) workers so as to increase the propensity to consume of the community, and consequently to rise aggregate spending and employment. But, other things being equal, recessions may have ambiguous effects on the propensity to

¹¹ The original argument of Pasinetti (1962) concerning the opposition between workers and rentiers may be extended to an opposition between poor and rich households. The propensity to consume may be different not only because of the difference in types of revenue (wages versus profits), but it may also be different because of the gap in the level of revenue (low wages versus high wages), all the more that the recipients of high wages tend to be the same recipients that receive profits' incomes through dividend payments.

consume of the community. On the one hand, if the recession hits more strongly (low-paid) workers through unemployment than (rich) rentiers through the drops in profit incomes, it may be expected that the resulting increase in inequality make the propensity to consume drop. On the other hand, if the recession strikes violently the financial incomes of (rich) rentiers, the propensity to consume may move upward.

Beyond the changes in income distribution, other factors may influence the propensity to consume during a recession, but once again, these factors may have divergent effects. The first factor that has to be noticed is a simple matter of accounting. If investment and exports accelerators operate, the shares of investment and exports decrease in output, and as a consequence, the shares of public expenditure and consumption have to increase. The second factor refers to the institutional environment where the recession takes place. Due to Welfare-State institutions, the fall of the GDP may exceed the drop of households' disposable income, so that consumption expenditures may be partly harbored by the importance of current transfers, such as unemployment insurances. For example, in the United States, the 2008-9 recession led to a contraction of 2.8% in GDP, while households' gross disposable income only underwent a 0.5% drop, especially because of a 13.6% increase in current transfer received by households.¹² Even in the United States where the Welfare State is not as developed as in Scandinavian countries, automatic stabilizers are sufficiently effective to support the propensity to consume in recession.¹³ Thanks to these automatic stabilizers, the share of consumption in GDP is pulled upward, even in the absence of any behavioral modification at the propensity to consume from a theoretical point of view. Indeed, if GDP falls more sharply than gross disposable income, the share of consumption in GDP increases, with no increase in the share of consumption in gross disposable income.

¹² The share of current transfers received by households in gross disposable income moved from 16.79% in 2008 to 19.15% in 2009. It can be added that the share of current taxes on incomes and wealth fell from 12.77% in 2008 to 10.24% in 2009.

¹³ This « normal » case is to be opposed to the Euro paradox developed in the section 3.1. above.

But we have now to move to behavioral factors that can affect the propensity to consume in recessions. According to some behavioral modifications, one can expect an increase in the propensity to consume due to recessions. In the American institutionalist tradition, Frank, Levine and Dijk (2014) underline the social norms overwhelming consumption expenditures. Like Veblen (1899) or Duesenberry (1949), they posit that households are committed in status' competition that goes through consumption expenditures. Trapped in this rat race, lower-class households, who lack the necessary incomes to "sufficiently" consume, engage themselves in debt to pursue the consumption competition and keep up with the Joneses. Facing recession, one can expect that poor households, despite depressed incomes, try to maintain their level of consumption, thus leading to an increase in the propensity to consume. For Cynamon and Fazzari (2008), the process is similar but concerns upper-class households. This time, if recession still makes incomes fall, these households manage to preserve their level of consumption despite their falling incomes, without going more into debt, but thanks to a drop in their saving propensity. Be it for lower- or upper-class households, van Treeck (2008) assesses that consumption behaviors are asymmetric with increasing consumption when income is increasing, but not falling consumption when income is decreasing.

But, there are also some behavioral arguments pointing at a decrease in the propensity to consume due to recession. The perspective of a prolonged recession depresses households' optimism. By fear of future or simply by caution, households can decide to save more to prepare to tough times. It can also be a compulsory move towards saving in the case of debt crisis. Banks may become reluctant to lend to already over-indebted households, so that households are forced to save more in the form of less indebtedness.

Finally, in Table 8 we provide a synthetic view of what happened during the last great recession by computing the contributions of import and consumption propensities to

multipliers' increases.¹⁴ A great heterogeneity of results subsists depending on a variety of parameters (size of the country, absence of recession, sovereign default, initial level of saving rate...). Nevertheless, on the average, we unambiguously note the predominance of international trade. Indeed, the propensity to import explains 85.4% of the multiplier's growth rate between 2008 and 2009, while the propensity to spend only accounts for 14.6% of this growth.

Table 8: Contributions of import and consumption propensities to multipliers' changes in recession (2009)

| Country | g GDP growth rate (2008-2009) | k_{2008} Multiplier's value in 2008 | k_{2009} Multiplier's value in 2009 | g_k Multiplier's growth rate (2008-2009) | Contribution of import propensity to the change in k | Contribution of the propensity to consume to the change in k |
|----------------|------------------------------------|--|--|---|--|--|
| Germany | -0,051 | 1,173 | 1,234 | 0,052 | 0,266 | 0,734 |
| France | -0,031 | 1,392 | 1,473 | 0,058 | 0,490 | 0,510 |
| Italy | -0,055 | 1,440 | 1,546 | 0,073 | 0,488 | 0,512 |
| Spain | -0,038 | 1,329 | 1,414 | 0,063 | 0,987 | 0,013 |
| Austria | -0,038 | 1,006 | 1,092 | 0,085 | 0,670 | 0,330 |
| Denmark | -0,057 | 0,975 | 1,022 | 0,047 | 0,772 | 0,228 |
| Netherlands | -0,037 | 0,833 | 0,856 | 0,026 | 0,753 | 0,247 |
| Ireland | -0,064 | 0,804 | 0,825 | 0,025 | 0,834 | 0,166 |
| Greece | -0,031 | 1,512 | 1,718 | 0,136 | 0,852 | 0,148 |
| Portugal | -0,029 | 1,326 | 1,389 | 0,047 | 0,884 | 0,116 |
| Belgium | -0,028 | 0,776 | 0,818 | 0,054 | 0,736 | 0,264 |
| Switzerland | -0,019 | 1,178 | 1,229 | 0,043 | 0,396 | 0,604 |
| Norway | -0,016 | 1,144 | 1,205 | 0,053 | 0,824 | 0,176 |
| Sweden | -0,050 | 1,013 | 1,090 | 0,075 | 0,653 | 0,347 |
| Finland | -0,085 | 1,098 | 1,193 | 0,085 | 0,559 | 0,441 |
| Iceland | -0,066 | 1,225 | 1,251 | 0,021 | 3,820 | -2,820 |
| Japan | -0,055 | 1,764 | 1,912 | 0,083 | 0,332 | 0,668 |
| Korea | 0,003 | 1,124 | 1,167 | 0,038 | 1,053 | -0,053 |
| United States | -0,028 | 2,079 | 2,199 | 0,057 | 0,670 | 0,330 |
| United Kingdom | -0,052 | 1,510 | 1,576 | 0,044 | 0,623 | 0,377 |
| Canada | -0,028 | 1,286 | 1,391 | 0,081 | 0,677 | 0,323 |
| Australia | 0,020 | 1,496 | 1,477 | -0,012 | 1,214 | -0,214 |
| New Zealand | 0,008 | 1,436 | 1,496 | 0,041 | 1,079 | -0,079 |
| Average | -0,036 | 1,258 | 1,330 | 0,056 | 0,854 | 0,146 |

¹⁴ The impact of each propensity is found by taking the logarithm of $k = 1/(1 - c + m)$ and deriving with respect to time which gives: $\dot{k}/k = (\dot{c}/c)ck - (\dot{m}/m)mk$. For 2009, we then find:

$$(k_{2009} - k_{2008})/k_{2008} = (c_{2009}/c_{2008} - 1)c_{2008}k_{2008} - (m_{2009}/m_{2008} - 1)m_{2008}k_{2008}$$

Conclusion

Following the bursting of housing markets and the financial turmoil in 2007-8, the world economy endured a generalized recession in 2009. Facing this Great Recession, policymakers then rediscovered the Keynesian recipes to avoid the complete economic crash, and the implementation of modest expansionary fiscal policies helped containing the downturn. But the fiscal stance has been inverted to early, and as soon as 2010, policymakers have changed sides to return to the fold and implement fiscal tightening. Austerity policies have been all the more harsh, that policymakers put faith in economists urging them to reduce public debt to avoid recession (Reinhart and Rogoff, 2010), and even stating that austerity may be expansionary (Giavazzi and Pagano, 1990; Alesina and Perotti, 1995; Perotti, 2013). Especially in Europe, austerity policies have been widely implemented (*i.e.*, not only in the deficit countries), because the Troïka (European Commission, European Central Bank, International Monetary Fund) underestimated the effects of fiscal contraction on economic growth, and thus causing tremendous social damage. The valuation of multiplier has been brought back on the core of economic policies' debates (Blanchard and Leigh, 2013). What is at stake now is the overwhelming evidence that contractionary fiscal policies hurt growth, and may particularly provoke economic breakdown when implemented during economic slumps. The first outcome of our paper is that it brings new evidence on this increased value for multipliers during recessions. Even though our calculations are based on a very simplistic method that identifies more a proxy for multiplier rather than the true multiplier itself (see section 2.), we believe that our work may contribute to reassess the need for counter-cyclical policies. Policymakers should avoid fiscal consolidation during recession, because the fiscal stance would profoundly harm economic growth, and thus it would become partly self-defeating in reaching their budget target, and finally cause “pain without gain”. Despite its

long decline, the multiplier's value is still well above unity for many countries, and its increase during recessions pleads for making it operate upwards rather than downwards.

The second result of our paper is that it provides explanations for these increases in multipliers' value during recessions. Aftalion (1908)'s investment accelerator, combined with big import contents for investment (theoretical method of Palley, 2009; empirical measures of Bussière et al., 2013), explains the drop in import propensities during recession. Insights inspired by Pasinetti (1962)'s works on social groups' propensities to save are also needed to explain the increase in the propensities to consume. For the future, more work is still to be done, such as a more detailed investigation of the import content of aggregate demand (*i.e.*, isolate government investment expenditures; replicate the data for more recent years) or a complete treatment of what have been called here the Euro paradox.

The third result of our paper is maybe the one that bears the most relevance for economic policy: policymakers who want to maximize their stimulus package during economic slumps should not try to enhance household consumption or firms' investment through tax cuts or other incentives, but policymakers should favor government consumption spending, since it is the type of aggregate demand where the import content is the least (see Table 7). The most effective stimulus plan must rely on government consumption expenditures, such as health or education spending.

The need for change is boiling in Europe where social riots emerge from inadequate macroeconomic policies. The combination of fiscal contraction during recessions and the rigidity of the European Monetary Union may be prone to recall economists what they have forgotten. The need for counter-cyclical fiscal policies and the necessity for adjustments in monetary policies were once parts of the common knowledge for economists. History is now about to remind economists of what they should have never forgotten...

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