
# Are Estimates of Fiscal Multipliers Truly Reliable? Some Observations Starting from the Case of Japan

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# Are Estimates of Fiscal Multipliers Truly Reliable? Some Observations Starting from the Case of Japan

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**Abstract**

The aim of this paper is to discuss the reliability of the estimates of fiscal multipliers to be found in the empirical literature by studying the case of the Japanese lost decade. We start from the literature considering Japan as proof of the general ineffectiveness of public spending. We identify the critical aspects that the estimates of fiscal multipliers present due to the theoretical assumptions that lie behind the obtained values. We then highlight the importance of the institutional context in which fiscal policies are pursued and the relevance of the quality of expenditure. We conclude that the results of the estimates may be strongly influenced by the reference theoretical framework and that they neglect relevant aspects, such as the composition of expenditure and the multiplicative effect of each policy measure. They cannot therefore constitute the sole basis to appraise the effectiveness of fiscal policy.

**Keywords:** Japan's lost decade, fiscal multipliers, fiscal policy

**JEL Code:** E62

## 1 Introduction

The recent financial crisis and the measures of economic policy put forward and adopted to address it in the different countries have rekindled debate on the effectiveness of fiscal policy and the size of fiscal multipliers. In particular, doubts have been raised about the empirical estimates of multipliers developed over the years in the literature.[1]

[1]Unless differently specified we use the term *estimate* to indicate both the values obtained by means of econometric models estimation and those arising from (New–Keynesian) DSGE models simulation. The term *multiplier* indicates the impact in terms of changes in output of a change in either government expenditure or taxes.

Some authors (Blanchard and Leigh, 2013) have focused on the possibility of underestimation through failure to take certain aspects (such as the presence of the zero lower bound) into consideration and attempted new estimates. Some have emphasised the need to recognise the fact that multipliers cannot but reflect the peculiarities of the individual countries involved (Favero et al., 2011; Corsetti et al., 2012). Some have pointed out the potential heterogeneity of the results obtained by means of VAR modelling (Hernández de Cos and Moral-Benito, 2016). These developments are particularly interesting.

However, the literature seldom offers in–depth analysis of the problems connected with estimates. Problems are generally addressed with a view to putting forward new estimates capable of overcoming them. Estimates present, however, limitations that are hard to avoid. As a result, the findings of the literature may provide a basis for possibly misleading conclusions as to the effectiveness of fiscal policy. Our purpose here is to show on the basis of a particularly significant case, namely the fiscal measures adopted in Japan in the 1990s and 2000s, why we cannot rely on multipliers' estimates alone in assessing the effectiveness of fiscal policy.

Japan is often taken in the literature as an emblematic example of a country adopting a strongly expansionary fiscal policy over a long period. However, it is generally thought that this policy failed to produce significant results. After the speculative bubble of 1980s burst, Japan entered a long phase of stagnation and recession. While the term lost decade is used, strictly speaking, to indicate the period of economic weakness between 1991 and 2000–2001, stagnation actually continued at least until the latest financial crisis. During the lost decade Japan introduced a series of fiscal measures specifically designed to combat the slowdown. These stimulus packages involved both spending and tax cuts. The first ten, for a total of 136.3 trillion yen, were announced between 1992 and 2000 and the other five, for a total of 63.3 trillion, as from 2001. The packages have attracted a great deal of attention, due to Japan's failure to emerge completely from stagnation despite these measures and despite a constant increase in the debt to GDP ratio. This has prompted many authors to conclude that expansionary fiscal policies are ineffective and the case of Japan has been taken as proof of the general ineffectiveness of public spending. Expenditure of nearly 200 trillion yen in less than twenty years with seemingly no significant results would indeed appear to justify these very conclusions. In the attempt to prove the thesis of ineffectiveness, the debate on the Japanese case has often taken the form of estimates of fiscal multipliers.

The original contribution of this paper is to comprehensively discuss the reliability of these estimates. First, we identify general critical aspects that the estimates present due to the theoretical assumptions that lie more or less overtly behind the obtained values. Then, we exploit the specificities of the Japanese case to highlight two issues often neglected in

the literature on multipliers. We stress on the one hand the importance of the institutional context in which fiscal policies are pursued; on the other hand, the relevance of the specific multiplicative effect of each measure. In particular, the role of the composition of public spending should be carefully considered when the effectiveness of fiscal measures is to be evaluated. Our discussion requires an accurate reconstruction of the overall fiscal policy carried out in Japan during the lost decade. To our knowledge, the literature has never been totally precise on this issue; our purpose is to offer a truly comprehensive picture.

The paper is organised as follows. Section 2 considers the estimates of Japanese fiscal multipliers to be found in the literature and their limitations, mainly related to the theoretical assumptions behind them. Section 3 focuses on the complexity of the Japanese budgetary system and the implications this complexity has for multipliers' estimation. Section 4 puts forward a different perspective to assess the effectiveness of fiscal policy, stressing the importance of a qualitative approach beside the quantitative one. It then expands on this perspective, which is based on the analysis of the specific effectiveness of the specific adopted measures, and above all on the composition of expenditure. Section 5 draws a parallel between what happened during the lost decade and the recent developments of the Japanese fiscal policy. Section 6 concludes. Details on data are presented in the Appendix.

## 2 Japanese fiscal multipliers' estimates

### *2.1 Brief review of the literature*

Debate on the Japanese case has always been very heated and numerous attempts have been made at estimation of the Japanese fiscal multipliers. This literature constitutes the starting point of our analysis.

Most of the estimates regarding Japan are obtained by means of the VAR methodology. The estimates most frequently referred to in the literature are presented in Table 1. The authors choose not only different models but also different variables and different data. The temporal horizon considered, i.e. the number of months (or years) at the end of which the expansionary effect is estimated, often differs as well.[2] Therefore, the estimates tend to differ and, above all, to be hard to compare even when the same model is used.

Less frequently, the effectiveness of the Japanese policies is assessed by means of simulations based on (New–Keynesian) DSGE models. As is known, the construction and the hypotheses of these models can vary greatly. For example, Fueki et al. (2011) use two different DSGE models to estimate the effectiveness of Japanese public consumption. The

[2]For example, what is described as the investment multiplier is 0.65 after *two quarters* in Kalra (2003), whereas in Rafiq (2012) it assumes the value estimated by the author over a period of *two and a half years*.

Table 1: Econometric estimation of the Japanese fiscal multipliers (Source: own elaboration)

| | Data[1] | Model | Expenditure | Tax | Investment | Consumption |
|---|---|---|---|---|---|---|
| Bayoumi (2001) | CY 1981–1998 | VAR | 0.65 | 0.2 | / | / |
| Kuttner and Posen (2002) | FY 1976–1999 | VAR | 2 | 2.5 | / | / |
| Kalra (2003) | 1981–2000[2] | VAR | 0.4–0.5 | 0.65 | 0.45 | / |
| Alfonso and Aubyn (2008) | 1972–2004 | VAR | / | / | 0 | / |
| Brückner and Tuladhar (2010) | 1990–2000 | Panel data, SYS-GMM estimator[3] | / | / | 0.28 | 0.26 |
| Rafiq (2012) | 1980–2000[2] | TVP-FAVAR[4] | / | / | 0.5 in 1985<br>0.1 in 1993 | 0.4–0.5 |

[1] CY = calendar year, FY = fiscal year
[2] Quarterly data
[3] Generalized Method of Moments
[4] Time Varying Parameter Factor-Augmented VAR

multiplier of expenditure proves lower in one of these, where the rise in the interest rate has a more markedly negative effect on private investment. A rule of fiscal consolidation is then introduced into both models, whereupon the multiplier undergoes considerable reduction.

According to Iwata (2009), the effectiveness of expenditure is essentially linked to the taxation rule. Even if all the consumers are Ricardian, a crowding–in effect can be obtained on consumption depending on the rule of taxation chosen. Iwata pinpoints the lack of consensus in the literature as regards definition of the rule of fiscal policy and suggests, on the basis of his analysis, that the taxation rule can have a marked effect on the size of the multiplier. Generally speaking, the results obtained by means of DSGE models may differ considerably, as modification of just one of the assumptions is sufficient to alter the results.

Anyway, regardless of whether econometric or DSGE models are used, estimates and simulations are inevitably influenced by their theoretical context of reference. Even as regards empirical (VAR) estimates, whose major advantage appears to be precisely their non–theoretical nature, theoretical considerations cannot in actual fact be completely eliminated.

### *2.2 Critical aspects – econometric estimates*

In general, multipliers' estimation is tricky. It is difficult to isolate the direct effect of fiscal measures on GDP, because of the interrelationships between these variables. For example, public spending often reacts to the cycle thanks to the automatic stabilizers. Moreover, it responds to the cycle in a discretionary way; when the output gap increases,

a countercyclical policy may be pursued by reducing expenditure. In order to address the problem, the literature has tried to focus on the sole *exogenous fiscal shocks*, defined as random discretionary measures by no means induced by the macroeconomic environment.

When estimating a VAR, the key challenge is precisely to identify these exogenous fiscal shocks. The reduced form of a VAR model is:

$$X_t = \sum_{i=1}^{k} C_i X_{t-i} + e_t,$$

where $X_t$ is the vector of endogenous variables, $C_i$ the matrix of coefficients and $e_t$ the vector of stochastic disturbances. Residuals of the reduced form capture three components, i.e. automatic stabilizers, discretionary fiscal policy responses (which may include systematic even though not automatic interventions) and random discretionary fiscal policy responses. In order to capture the last component only, we need to move to the structural form:

$$A_0 X_t = \sum_{i=1}^{k} A_i X_{t-i} + B\epsilon_t,$$

where $X_t$ is the vector of endogenous variables, $A_0$ the matrix that describes the contemporary relations between the variables in $X$, and the $B$ matrix describes the relations between the residuals of the structural form and those of the reduced form:

$$\epsilon_t = B^{-1} A_0 e_t.$$

The dynamics of the variables following a one unit increase in the value of the *structural* residual is summarised by the impulse response functions of the model variables. In order to compute the impulse response functions, however, we must estimate the matrices $A_0$ and $B$ and the variance–covariance matrix of the structural residuals. The system, though, can be identified only if some of the coefficients of the $B^{-1}A_0$ matrix assume specific values.

There are different methods of identification and the choice is important. Those chosen for the estimates listed in Table 1 are the Cholesky decomposition and the Blanchard and Perotti (2002) approach. The former involves positing that the matrix $A_0$ is a lower triangular matrix with ones on the main diagonal (while matrix B is the identity matrix). This means that the variable of the system ordered first responds only to its own shocks and not to those of the other variables, the second variable responds only to its own shocks and those of the first, and so on. With this method, the order of the variables, and hence

of the causalities, plays a crucial role and the implications of a choice, whatever it may be, are non–negligible. In Afonso and Aubyn (2008), for example, public spending is ordered first. As a result, it does not contemporaneously react to shocks to the economy. Output is ordered second, so that it only responds to spending and to its own shocks.

In the approach devised by Blanchard and Perotti (2002), which is actually based on the previous one, the values of some elements of the matrix are set *in advance*. The elasticity of taxes with respect to income is calculated separately and then imposed in the VAR; the elasticity of expenditure with respect to income is instead taken as equal to zero. Clearly, it is recognised that expenditure usually reacts to what happens to output – as a result, for example, of the presence of automatic stabilisers or policy rules. However, it is assumed that in the short term spending does not depend on simultaneous changes of the macroeconomic situation, because of a lag between fiscal policy decisions and their implementation. That is, public expenditure does not react to changes in output at least for a certain period (usually a quarter). A crucial assumption.[3]

To sum up, the problem of a bidirectional causation between public expenditure and output and the proposed solutions are a central issue in VAR models. Moreover, the identifying assumptions require strong hypotheses not only on the relationship between public spending and output, but also on other fundamental interrelations. For instance, in the above–mentioned model of Afonso and Aubyn (2008) – where the fundamental causation goes from public spending to output – taxes follow income, which rules out ex–ante the possibility of a shock to taxes having an effect on any component of output, including private consumption.[4] More generally, empirical estimates present limits that have been repeatedly highlighted in the literature (e.g. Coenen et al., 2010). The amount of identifying information is far too small to allow us to evaluate, for example, the interaction between monetary and fiscal policies or the distinction between different types of fiscal instruments.

It is no coincidence that some of the estimates listed in Table 1 originate precisely in an attempt to overcome some of these limits. In the first place, problems related to the causality relation between public spending and output are dealt with. Other limits, however, are also considered. Brückner and Tuladhar choose a model completely different from VAR in order to «circumvent, *to a certain degree*, an endogeneity bias that is due to

[3]The structural identification method has often been the subject of further criticism (e.g. Batini et al., 2014). It may fail to capture purely exogenous fiscal shocks, because, for example, it does not filter out asset and commodity price movements. To address the problem, recent studies have developed the *narrative approach*, trying to use direct estimates of fiscal measures from government documents to identify exogenous fiscal shocks. On the tax side, for example, the method uses estimates of fiscal measures extracted from budget documents but it excludes the subset of tax measures implemented in response to short-term macroeconomic fluctuations, which are not exogenous.

[4]As noted by Kuckuck and Westerman (2013), the Blanchard–Perotti approach fails to take adequately into account the fact that fiscal policy instruments often react to each other.

fiscal policy responding to changes in the economic environment [emphasis added]» (2010, p. 10). Kuttner and Posen (2002) employ the Blanchard–Perotti method but endeavour to take the correlation between taxes and expenditure into account by examining the combined effect of spending and taxes over a period of four years (considering, in this way, any correlation between fiscal policy instruments). Rafiq (2012) employs a FAVAR model making it possible to take developments in monetary policy into account too.

In other words, the empirical literature on the Japanese case has not failed to detect the shortcomings of the estimates. It attempted to find possible solutions, in order to reconcile the constraints imposed by the estimation techniques with the reality of the Japanese economy. In fact, Kuttner and Posen suggest their analysis relies on hypotheses which are undoubtedly simplifying but plausible, as they reflect the institutional setup for fiscal policy in Japan (2002, p. 250). This attention to the institutional context deserves to be highlighted, as it signals that the authors are aware of the limits the estimates present in capturing the complexity of the institutions, as we shall see in section 3.

### *2.3 Critical aspects – model simulations*

On the other hand, model–based simulations are supposed to overcome the limits of the empirical approach, as DSGE models allow to take fully into account the structure of the economy. The assumptions underlying each single model are, however, fundamental.

Models can produce a very broad range of results, depending on their specifications in terms of structural characteristics and conjunctural factors (Hemming et al., 2002). In general model–based fiscal multipliers are not high, usually between zero and one, and estimates for the Japanese case do not represent an exception. The leading thread, the main explanation proposed for this result is the depressing effect of expansionary fiscal policy on some components of the private sector's expenditure, in particular on private consumption due to the so–called Ricardian equivalence (Barro, 1974). According to the latter, an increase in deficit spending does not induce consumers to change their consumption plans, and financing expenditure in deficit or through taxes are equivalent solutions. The permanent income of the individuals and the bond between generations are key concepts. Consumers, perfectly forward–looking, are aware that an increase in deficit spending today will inevitably be followed by an increase in taxation tomorrow, for the policy maker must always guarantee that the value of public expenditure flow in a given period of time is equal to that of the resources available during the same period (government's intertemporal budget constraint). The increase in taxes will burden future generations. (Ricardian) consumers therefore increase savings (i.e., reduce consumption) to transfer them resources. As a result, in response to an increase in deficit spending

output increases, but less than the increase in demand from the public sector.[5]

The Ricardian equivalence is a key concept with respect to which fiscal policies are evaluated. It is no coincidence that in DSGE models a proportion of non–Ricardian (liquidity–constrained) consumers is often introduced, for it represents a «powerful channel through which fiscal policies can have non–Ricardian effects» (Kumhof et al., 2010, p. 5). For example, differences between temporary and permanent policies are considered according to the intensity of the crowding out that they may have on private consumption.[6]

The values obtained for the Japanese multipliers, besides responding to the specific hypotheses introduced in each model, are actually affected by the Ricardian equivalence. In Fueki et al. (2011) the proportion of non–Ricardian consumers contributes to generate higher multipliers. In Iwata (2009) it is implicitly assumed that the Ricardian equivalence results in a crowding–out of consumption and it is argued that the crowding–in can be recovered – more than resorting to liquidity–constrained consumers – through an appropriate tax rule combination.

All these considerations are, however, closely linked to the neoclassical theoretical context. In this approach the output level is determined by the amount of available resources and not by the aggregate demand. Also private savings (and therefore private wealth) are set independently of the demand. In this perspective the Ricardian equivalence is relevant. As deficit spending increases, private agents subscribe new public debt. Since the savings amount is given, private investment must decrease while deficit increases. As a result, the real wealth bequeathed to future generations decreases. In order to avoid this effect, individuals reduce private consumption. Conversely, if it is assumed that income is determined by the aggregate demand, increasing deficit spending leads savings to increase accordingly. The issuance of bonds does not change the *composition* of private wealth but rather its *amount*.[7]

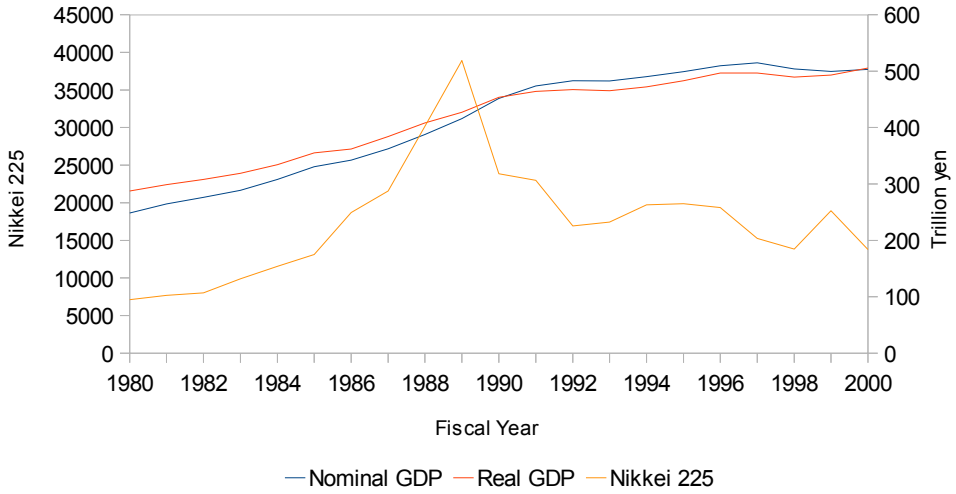
The theoretical context of reference is therefore very relevant. Simulations *cannot* be separated from aspects of a theoretical nature. This often rules out *a priori* any possibility of certain measures of expansionary fiscal policy proving effective, or in any case limits their effectiveness in advance. The fact that the analyses are not free of theoretical influence can therefore lead to distorted judgements of the effectiveness of fiscal policy.

[5] In NK–DSGE models the negative effect on consumption is partly offset by the increase in production, labour demand and nominal wages induced by nominal rigidities.

[6] Focus is often on fiscal expansions that are, and are perceived to be, temporary, for they do not result in long–run crowding out of private spending.

[7] Model–based simulations, which seem to support the Ricardian equivalence, clearly depend on the characteristics of the models themselves, built in accordance with the fundamental relations of the neoclassical theory. It is precisely on those relations that one should focus. It is not entirely accurate to state that in general equilibrium models the effectiveness of fiscal policy is limited because they are full–employment models. Indeed, the models through which multiplier estimates are obtained (including those considered here for the Japanese case) usually present real rigidities causing *involuntary* unemployment.

Figure 1: Nominal and real GDP and the Nikkei 225 – yearly averages of close prices (Source: Elaboration of data from the Statistics Bureau of Japan)




### *2.4 A further observation*

While discussing these critical aspects related to the reliability of fiscal multipliers, we can raise a further question. In general terms, any consideration of the effectiveness of fiscal policy is impaired by the fact that it is impossible to know what would really have happened to the system in the absence of any fiscal policy.

It is in fact reasonable to suggest that higher multipliers would be obtained if it were possible to take as our starting point the value that GDP would have attained in the absence of stimuli. Koo (2009) argues that the true multiplier of Japanese public expenditure would be obtained by starting from the difference between the effective state of the economy and the state in which the system would have been, after the enormous losses due to the collapse of the speculative bubble, had the public sector not intervened. The assumption that the economy's rate of growth would have remained close to zero even in the absence of fiscal stimuli, on the grounds that no significant departure from this value is registered when such stimuli are in fact present, leads instead to the conclusion that expenditure has proved substantially ineffective. However, the absence of a counterfactual in macro analysis prevents us from quantifying the *true* multiplicative effect of fiscal measures.

Note that, as Figure 1 shows, GDP appears to have stood up comparatively well to the impact of the severe collapse of the share index (Nikkei 225) and the loss of wealth that followed the bursting of the bubble. The growth rate of the real and nominal GDP has remained close to zero, but it cannot be assumed *a priori* that the same would have happened also in the absence of policies. The situation could have been much worse. As we do not have a counterfactual, though, we cannot account for this evidence in the

estimation of fiscal multipliers.

## 3 Overlooked aspects and trends of Japanese fiscal policy

There is a second reason not to trust empirical estimates alone, a very interesting example of which is provided by the Japanese experience. Estimates do not appear to take the complexity of institutional reality adequately into account. In the case of Japan, they seem to overlook fundamental aspects of the complex budgetary system and the overall course of fiscal policy. This point probably requires in–depth examination.

As stated above, Japan introduced a series of packages specifically designed to combat the slowdown of its economy. Debate on the Japanese case cannot, however, be confined to the stimulus packages. They are only the measures *specifically adopted* during the years of the lost decade and do not present a complete picture of the overall policies implemented in Japan in that period. In actual fact – and quite correctly – the estimates of Japanese multipliers we find in the literature do not confine themselves to assessing the impact of the packages. In other words, if the aim is to estimate the multiplier of investment, attention is not focused solely on the public investments envisaged in the packages. Use is instead made of data thought to reflect all the expenditure classifiable as public investments over a certain period.

Pitfalls lie precisely in the attempt to consider policy as a whole, however, because the peculiarities of the Japanese budgetary system might lead to oversimplification. In the case of Japan, any analysis of spending and tax cuts should indeed take two facts into account. First, the Japanese system provides for the existence of various budgets, potentially independent of one another and performing very different functions, at the central and local level. Second, not all of the expenditure *announced* is *actually carried out*.

### *3.1 Japan's complex budgetary system: An overview*

The most important document at the central level is the *General Account Budget*. At the beginning of the fiscal year, the initial General Account is approved by the Diet. During the year, so–called *Supplementary Budgets* are normally introduced to adjust the figures already approved in the General Account, for example in the event of larger expenditure or revenues being required. Supplementary Budgets are typically used as tools of countercyclical policies. A *revised* General Account, comprising the initial budget and any adjustments made, is thus obtained at the end of the fiscal year. Along with the General Account there are *Special Accounts* used to handle specific funds allocated for precise purposes. Local authorities also have more than one budget. Moreover, great

importance has always been attached to the *Fiscal Investment and Loan Programme* (*FILP*).[8]

As stated above, Japan is often taken in the literature as an example of country that has carried out a great deal of expenditure but to no avail.[9] However, some authors (Posen, 1998; Mühleisen, 2000) cast doubt on the genuinely expansionary nature of Japanese fiscal policy, precisely by enlarging the perspective beyond the packages. They compare the *overall* figures of the initial General Account, the Supplementary Budgets and the revised General Account. Comparison reveals that, while the stimulus packages announced in the 1990s are clearly indicative of an expansionary policy, the *initial* General Accounts of several of the years considered display a contractionary tendency. To be more precise, the *initial* budget of every year in the lost decade tends to be contractionary with respect to the *revised* budget of the previous year. It seems to be an attempt to offset the increase in expenditure envisaged through a package in a certain year with a contractionary policy at the beginning of the following year. For example, the revised budget of 1993 amounts to 77.4 trillion yen and the initial budget of the following year to 73.1 trillion. It similarly happens for nearly every year of the lost decade.

The same is true for single budget items.[10] The initial budgets do tend to be contractionary with respect to the revised budgets of the previous year *above all in certain items* (e.g., public works). Other components, in particular social security but also expenditure linked to the national debt, instead tend to increase from the revised budget of one year to the initial budget of the next. By combining data on the initial and final General Account, the Supplementary Budgets and the packages, it is apparent that in the initial budgets the central government tightened certain discretionary spending. It then reversed the policy during the year by means of the packages. In this way, it apparently determined a *stop–and–go* approach to fiscal policy.

In any case, these observations relate to the figures *announced* in the initial and revised budget of the *sole* central government. In order to better understand what has actually happened, let us combine the information obtained from the figures announced with the information obtained from the figures *effectively spent* by *all* government levels.[11]

Figure 2 shows that the ratio of General Account expenditure to GDP tends to remain constant between 1980 and 2000, which would suggest that the initial budgets do in fact

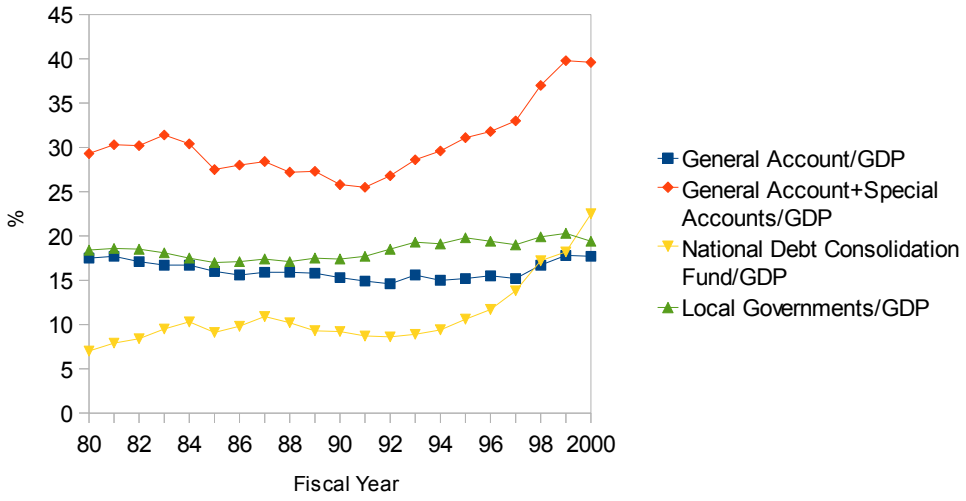
[8]The content of the packages is largely financed through the Supplementary Budgets but also through subnational governments and the FILP, as well as through the General Account.

[9]It is worth noting that in Japanese fiscal policy automatic stabilizers play a very limited role; fiscal policy is carried out mainly through discretionary measures.

[10]Reference must be made here to the OECD data (1992; 1993; 1994; 1995; 1996; 1997; 1998; 1999; 2000), as the Ministry of Finance provides budget figures only as from 1998 and the items are not presented in detail.

[11]These data are provided by the Statistics Bureau of Japan and sometimes significantly differ from the figures announced.

Figure 2: Actual expenditure of the General Account, Special Accounts and local governments with respect to GDP (Source: Elaboration of data from the Statistics Bureau of Japan)




seek to compensate for the greater expenditure envisaged by the packages. The data thus appear to bear out the claim that the expenses have not increased so significantly. However, this does not account for the whole of public spending.

First of all, it is necessary to take into consideration the Special Accounts, which are often overlooked in the literature (Scissors and Yokoe, 2012) despite they are frequently used to implement specific investment projects. Figure 2 shows in fact that the ratio of total net expenditure to GDP begins to increase constantly in the early 1990s. It is also true, however, that the most important of the Special Accounts in absolute terms is the National Debt Consolidation Fund, followed by the Allotment for Local Allocation Tax. This could suggest that a by no means negligible part of the increase in expenditure is connected with servicing the national debt. Indeed, the National Debt Consolidation Fund does account for over 20% of the total expenditure of the Special Accounts until 1995, after which there is a marked increase that reaches 37% in 2000. It remains true, however, that there are also Special Accounts through which specific investment projects are implemented.

Moreover, it is necessary to account for what happens at the local level. Local governments cannot be overlooked because they have always carried out a great deal of public spending. The sums allocated by the local authorities as a whole are higher than those of central government in relation to most of the items of expenditure. Approximately 90% of health expenditure is carried out by local governments, which are also responsible for education and public works. As Figure 2 shows, the gap between central and local government begins to widen in the early 1990s; expenditure at the local level does increase.

Finally, the FILP cannot be forgotten. The FILP was originally intended to obtain

investment funds for public bodies and private companies regarded as playing an important part in social and development policies. In actual fact, however, it played a far broader role. The resources of the FILP were to be allocated solely to projects from which a return was expected in terms of profit. The criterion of profitability has, however, often been disregarded over the years. This has led to an increase in the weight of the program and of public expenditure, as a result.

### *3.2 Actual expenditure*

The second point to consider is actual expenditure, as not all of the sums announced in the packages are actually spent. This problem can be divided into two separate questions. First of all, not all of the expenditure announced is *new*. It is generally agreed (e.g. Nanto, 2009) that the repackaging of measures already envisaged in previous packages or budgets accounts for a certain percentage of the packages. Unfortunately, the lack of precise data makes it impossible to draw any conclusions. It is, however, reasonable to assume that the figures regarding the packages are rather the upper limit of spending and that the new measures do not tend to coincide with the entire amount of expenditure announced.

Secondly, a problem emerges at the local level. This question is analysed in depth in Ishii and Wada (1998) but also mentioned in OECD (1999) and Mühleisen (2000). The thesis of Ishii and Wada is that local authorities have failed to carry out the expenditure announced in the packages. The reason is to be found in the gradual deterioration of their financial position, not least as a result of the complex relationship with the central government.

All these considerations lead us to conclude that the expenditure announced and actually carried out through the General Account has not increased as markedly as usually deemed, *especially as regards certain items*. Public works, for instance, seem to have been reduced from year to year. It is actually true that public spending has still been carried out through the Special Accounts and the FILP. It is undeniable, however, that expansionary policies have not always been implemented with conviction. Japanese fiscal policy has been subject to a *stop–and–go* approach. On the one hand, as just highlighted, we find the attempt to curb spending through an initial General Account budget contractionary with respect to the revised budget of the previous year. On the other hand, the need to restore public finances led the Japanese government to suddenly reverse fiscal policy on two occasions. Both in 1997 and in 2001, when the economy seemed to be slowly recovering, a premature manoeuvre of fiscal consolidation was pursued.

It is worth noting that this overall framework is not inconsistent with the explosive increase in the Japanese debt to GDP ratio beginning in the early 1990s. First, the deficits are attributable to a *combination* of increase in expenditure and drop in revenues (Nakao,

2002; Tsuri, 2005). Furthermore, authors (e.g. Mühleisen, 2000) share the view that the origin of drop in revenue were not the tax cuts, rather the weakness of the economy and the low GDP growth, especially after the first attempt at fiscal consolidation. This consolidation effort was indeed premature, as in 1996–1997 the economy was slightly recovering but still weak. Therefore, it is often seen as the cause (Posen, 1998) or at least a concomitant cause (Yoshikawa, 2001) of the phase of greatest weakness of the Japanese economy during the lost decade. Secondly, the prevalent definition of public debt does include both the debt of the central government and the debt of the subnational governments. In this respect, the increase in the debt to GDP ratio is entirely consistent with the heavily deteriorated position of the local authorities.

### *3.3 Do the estimates adequately capture this complex reality?*

The foregoing analysis should already give some idea of the complexity of the structure of the Japanese budget and the controversial question of the effective implementation of measures. It is legitimate at this point to ask whether the empirical estimates take these two aspects adequately into account. Marked simplifications are in fact unavoidable.

The problem is partly related to the choice (and the unavailability) of data. In general terms, the use of different data is one of the basic reasons for the disparity of the results found in the literature. For example, Bayoumi (2001) and Kalra (2003) both claim to be using the sum of consumption and public investment but the figures do not appear to be the same. It is, however, still harder to understand whether and how these data actually take into consideration the Special Accounts, FILP and local governments. Bayoumi and Kalra do not bother to mention this point. Brückner and Tuladhar (2010) use data on public investment with a distinction drawn between central and local government, but once again there is no clarifications as regard the Special Accounts and FILP. The latter tends in particular to be overlooked. For example, Kuttner and Posen (2002) omit it entirely on the grounds that its role is *hidden*.

It is therefore no easy matter to assess Japanese fiscal policy *thoroughly* as a whole without being forced into oversimplification by the complexity of the system and the unclear nature of the data. In any case, even if we really wished to consider all the data and attempted to consolidate them, it would still be very difficult to take into account the richness and complexity of the interrelations between the budgets, the balancing between packages and initial General Accounts, and the question of repackaging and effective implementation. The result of oversimplification is a real risk to create datasets for either estimates or simulations containing data that are far from presenting a proper correspondence with the reference theoretical variables.

## 4 Different fiscal policy instruments and the quality of expenditure

As we have seen, there are at least two reasons why the empirical estimates of multipliers are not a wholly reliable basis to judge the effectiveness of Japanese fiscal policy. A more complete appraisal would require aspects that are not included and sometimes impossible to include in the estimates. However, the reasons given above are not the only ones that should deter us from trusting these estimates alone. One element would be crucial to any assessment of the effectiveness of fiscal policy but is accorded little attention in the estimates. It is consideration of the effectiveness of *specific measures of fiscal policy* and in particular the *composition* of public expenditure. Every operation, every item of expenditure and every decision to cut taxes has a specific impact on the economy and specific multiplicative effects.

Very different items are often included under the heading of public expenditure for the purposes of estimation in the literature. In Brückner and Tuladhar (2010), for example, the investment data cover expenditures on the maintenance and repair of facilities, improvement projects, office expenses, and planning and surveys. Therefore, even though the multipliers of public consumption and public investment are sometimes estimated separately (see Table 1), the specific multiplier impact of the different types of expenditure and investments in different sectors is not taken into account. The same problem also emerges as regards the multiplier of taxes, as little note is taken of the differing effectiveness of different measures (whether the cuts regard direct or indirect taxes and whether they are permanent or temporary).

The estimates do not make it possible to consider the specific effectiveness of the individual measures adopted and above all do not appear capable of providing a *disaggregated* evaluation of expenditure.

### *4.1 Mamizu: a cue for reflection*

It is worth noting that these aspects are not entirely ignored in the literature on Japan. Instead, attention has been given to the content of packages precisely from this angle. Reference is made in this connection to *mamizu* (i.e., *real water*), a concept that offers an interesting food for thought.

Starting from Mühleisen (2000) and Kalra (2003) we can define mamizu as measures envisaged in the packages which are actually capable of stimulating the economy. In other terms, it may be considered as a set of interventions – both on the expenditure and the tax cuts side – with an *actual multiplicative effect*.

The notion is born within the debate on the Japanese case and is widely discussed by the authors studying the lost decade. There is in fact general agreement among them on the

need to distinguish between measures believed capable of stimulating demand and those regarded as having no effect on it, such as purchases of land and loans. However, some authors (Nanto, 2009; Ito, 2011) suggest that the determination of mamizu should also involve the elimination of all the measures in packages that are simply the repackaging of expenditure already envisaged. Ito (2011) regards mamizu as pure incremental central government budget. Posen's definition (Posen, 1998, table 2.4) is still more intricate in that the author appears to also exclude from the mamizu expenditure provided for in packages but deferred to the following year.

The variety of interpretations is indicative of a highly complex reality and a great many questions can be raised as regards the definition of mamizu. In any case, the interpretation we propose seems to well capture the core idea of mamizu, while at the same time going beyond the numerous specificities of the Japanese budgetary system.

Even though the concept is not unambiguous, in fact, it does provide an interesting starting point; it may find useful applications if it were extended. In particular, it may be interesting to see if the notion is relevant in the experience of other countries, too. This is plausible if we define mamizu as public spending and tax cuts with multiplicative effects. Once recognised that, it might be useful to evaluate all the literature on fiscal multipliers – not only the estimates of the *Japanese* multipliers – in the light of that concept. It has indeed been born precisely in order to address those aspects of fiscal policy – above all the quality of expenditure – that appear to have been too often neglected in that context.

### *4.2 Assessing the effectiveness of specific measures of fiscal policy: What happened in Japan?*

We shall start by observing that in the first place any assessment entails adequate knowledge of the adopted measures. We have already seen how important it is to take into account both what happens in fiscal policy as a whole and the measures specifically adopted to combat stagnation (i.e., the stimulus packages). An accurate reconstruction of the content of the packages, something left decidedly unclear in the available literature, has been developed here. It is presented in Table 2. Further details on both the problems emerged throughout the reconstruction and the data sources are in the Appendix.

It can be noted that the packages contain measures that differ greatly from one another. On the one hand we find public investments (including public works at the levels of both central and local government), tax cuts (central government) and other measures such as purchases of land. On the other hand there are financial aid to SMEs, support for private investment and GHLC (Government Housing Loan Corporation) loans. Some of the packages announced also include further measures connected with specific needs of the moment, such as natural disaster relief.

Given this situation, let us now see how the effectiveness of the various measures can be assessed and which aspects of this effectiveness the empirical estimates fail to take into consideration.[12]

We shall begin with direct expenditure. When assessing direct spending, a distinction between productive and unproductive expenditure is often invoked. In the literature, however, the significance attached to the term *productivity* is controversial. Therefore, it seems here more appropriate to refer to the notion of expansive effects of fiscal policy measures. That is, we try to focus on the multiplicative effect that spending may have. An appraisal of the multiplicative effectiveness of spending measures may benefit from the evaluation of the forward and backward linkages existing in the economy (Hirschman, 1986). That is, we search for the connections of each sector with the sectors providing it with inputs and even more with those using its output as input.

If its multiplicative effect is to be high, expenditure should be carried out so as to take full advantage of these linkages. It is intuitively evident that the greater the number of linkages a sector presents with the rest of the economic system, the greater the impact of measures targeted to that sector will be, as linkages tend to amplify the stimulus. As the choice of the sectors into which public investment is to be channelled can therefore prove crucial, decisions about public spending and its allocation should be linked to a strategy of industrial policy. As pointed out by Mazzucato (2013), it is true not only that investment generates growth but also that the Keynesian multiplier effect is stronger when spending is directed towards certain sectors. In short, it is important for the public sector to invest in certain industries and make it possible at the same time for firms to take advantage of an authentic network of linkages.

Let us see what has actually happened in Japan. First, it is worth noting that in each expenditure package direct expenditure rarely exceeds 50% of the overall amount (April 1995, with its 77% – 5.1 over 7 trillion yen – represents a rare exception; on the other hand February 1994 records a very low percentage – 4.3 over 15.3 trillion yen). Secondly, the suspicion arises that the public works carried out at the central and local level in Japan have not all had strong multiplicative effects. Japanese governments have been often accused of according priority to white elephants, major public works in poor and scarcely populated regions that remain underused: «in the absence of forward and backward linkages, which create opportunities for economies of scale, investing in less densely populated and poorer regions can compromise output gain» (Brückner and Tuladhar, 2010, p. 19).

In other words, these measures could have failed to produce sufficient agglomeration

[12] We focus here on the packages implemented between 1992 and 2000 (lost decade in the strict sense). As far as the others are concerned, we just report the overall figures while pointing out that, from October 2001 onwards, loans, credit facilities and other measures which, as we shall see, cannot be regarded as expansionary, accounted for almost all of the packages' content.

effects. It is true that investments of this type should have a positive impact on the economy in any case.[13] It is also true, however, that their expansionary effect can be far lower than that of investments in more densely inhabited areas offering more opportunities to harness the connections existing in the economic system. An approach based solely on empirical estimates of multipliers fails to take these aspects into account and to assess the specific impact of the individual item of expenditure in public works.

[13]Neither should we neglect the fact that public spending usually have compound targets, which may go beyond the sole opportunity to fully exploit the linkages of the economic system.

Table 2 Fiscal packages content (trillion yen). See the Appendix for further details (Source: own elaboration)

| | Aug. 1992 | Apr. 1993 | Sept. 1993 | Feb. 1994 | Apr. 1995 | Sept. 1995 | Apr. 1998 | Nov. 1998 | Nov. 1999 | Oct. 2000 | Oct. 2001 | Dec. 2001 | Dec. 2002 | Aug. 2008 | Oct. 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Public investment:** | | | | | | | | | | | | | | | |
| Central government public works | 4.5 | *ca.* 5.0 | 1.5 | *ca.* ***4.0*** | / | 6.7 | 1.6 | 3.6 | *ca.* 2.5 | 2.6 | … | … | … | … | … |
| Local governments public works | 1.8 | 2.3 | 0.5 | ***0.3*** | / | 1 | 1.5 | / | / | / | … | … | … | … | … |
| Education and welfare | / | / | / | / | / | / | 1 | 1.1 | 0.6 | 0.5 | … | … | … | … | … |
| Alternative energy and environment | / | / | / | / | / | / | 1.6 | 1 | 0.6 | 0.6 | … | … | … | … | … |
| Natural disaster relief | / | / | / | / | ***5.1*** | 1.4 | 1 | 1.3 | 1.6 | 0.5 | … | … | … | … | … |
| Science and technology | / | / | / | / | 0.3 | / | 1 | 1.1 | 1.2 | 1 | … | … | … | … | … |
| **Tax cuts** | / | ***0.2*** | / | ***5.9*** | / | / | ***4.6*** | ***6*** | / | / | … | … | … | … | … |
| **Transfers/subsidies to households** | / | / | / | / | / | / | / | ***0.7*** | / | / | … | … | … | … | … |
| **Other measures:** | | | | | | | | | | | … | … | … | … | … |
| Acquisiton of land | 1.6 | 1.6 | 0.3 | 2.8 | / | 3.2 | 2.3 | / | / | / | … | … | … | … | … |
| Measures for SMEs | 1.2 | 1.9 | 0.8 | 1.4 | 1.4 | 1.3 | 2 | 5.9 | ***7.4*** | 4.5 | … | … | … | … | … |
| Other measures for investments | 0.9 | 0.5 | / | / | / | 0.1 | / | | / | / | … | … | … | … | … |
| GHLC loans | 0.8 | 1.8 | 2.9 | 1.2 | / | 0.5 | / | 1.2 | 2 | 1 | … | … | … | … | … |
| Employment support | / | / | / | / | / | / | 0.1 | 1 | 1 | 0.3 | … | … | … | … | … |
| Measures for Asian crisis | / | / | / | / | / | / | / | 1 | | | … | … | … | … | … |
| Long-term care | / | / | / | / | / | / | / | / | 0.9 | / | … | … | … | … | … |
| Others | / | / | / | / | 0.1 | / | / | / | / | / | … | … | … | … | … |
| **Total** | 10.8 | 13.2 | *ca.* 6 | *ca.* 15.3 | *ca.* 7 | 14.2 | 16.7 | 23.9 | *ca.* 18 | 11 | 5.8 | *ca.* 4.1 | *ca.* 15 | 11.5 | 26.9 |

Let us now consider indirect expenditure (subsidies to families and firms). It is generally recognised that indirect measures can be of limited effectiveness. Their multiplicative effect is in fact influenced by the decisions of the beneficiaries; the sums involved could be saved rather than spent. The same considerations apply to the other tool of expansionary fiscal policy, namely tax reduction, as the beneficiaries could in fact decide to save at least part of the sums. In short, the possibility of leakages must be taken into account. The problem of the ability to influence private expenditure was indeed pointed out by Keynes (1980, p. 319):

> People have established standards of life. Nothing will upset them more than to be subject to pressure constantly to vary them up and down. A remission of taxation on which people could only rely for an indefinitely short period might have very limited effects in stimulating the consumption.

This passage offers two cues for reflection. Keynes points out first of all how hard it can be to induce people to alter their consumption habits. This means, as stated above, that indirect measures can be of limited effectiveness. There is, however, also another aspect to be taken into consideration. It is in fact reasonable to believe that different income groups have a different marginal propensity to consume and in particular that the marginal propensity to consume decreases as income rises. The distribution of income may therefore have a significant impact on the effectiveness of fiscal policy. To be more precise, measures of redistribution in favour of the less affluent classes usually have a more expansionary effect.

The second aspect to which Keynes draws attention in the passage is the permanent or temporary nature of measures. The less permanent the adopted measures are, the harder it can prove to alter the habits of private agents. A short–term reduction of taxes, for example, could fail to induce the beneficiaries to increase their consumption. The question of the temporary or permanent nature of measures has very broad implications. Observing that the potential of temporary, short–term intervention can be limited, Keynes maintains that measures of demand–side policy must rather be *permanent and long–term*, close to automatic stabilisation: «I doubt if much is to be hoped from proposals to offset unforeseen short–period fluctuations in investment by stimulating *short–period changes* in consumption [emphasis added]» (Keynes, 1980, p. 323). The distinction between permanent and temporary interventions thus has a certain importance as far as the evaluation of effectiveness is concerned.

Finally, subsidies to firms taking the form of financial aid, deserve special attention. Financial aid is clearly not a measure that *adds* to the aggregate demand. Moreover, it is normally allocated and then made available if and when a request is submitted by the beneficiary, which is a prerequisite and which is unlikely to happen in condition of

economic stagnation and slack credit demand (OECD, 1993). It is clear that these funds will never enter the economic system if there is no demand on the part of the private sector.

Japanese fiscal policy has been largely based on indirect measures and tax cuts, and these were primarily one–off measures in both cases.[14] As it can be seen in Table 2, tax cuts (on income and firms) represent a very significant percentage (about 30%) of some packages. However, of the 16.7 trillion yen of tax cuts totally envisaged in 1990s packages, only 6 trillion are permanent in nature. Even outside the packages, the cuts are seldom permanent. In 1995, for example, only 2 trillion of a 5.5 trillion yen of reductions on income tax and inhabitant tax were permanent. The transfers/subsidies in the form of vouchers envisaged in the packages (0.7 trillion yen in November 1998) may instead have had a certain degree of effectiveness due to the above–mentioned differences in the propensity to consume of the different income groups, not least because of the accentuation of inequalities in income distribution during the lost decade. Redistribution measures of this type may have had a certain effect provided that the vouchers actually reached the lower income groups.

It is also very interesting to take a closer look at the financial measures (loans and government guarantees) in favour of firms (SMEs), which often account for a large proportion of the packages. Table 2 shows high percentages; for example in November 1999 these measures exceed 40% of the total amount. These are designed not so much to boost production as to address the problem of the credit crunch, and take the form of increased lending on the part of government financial institutions and extension of government guarantees. Already substantial in the packages of the 1990s (5.9 trillion yen in November 1998 and 7.4 trillion in November 1999), these measures become predominant in the packages as from 2000.

The effectiveness of all these indirect measures is questionable. This holds all the more for Japan due to the consequences of the balance–sheet recession[15] and the increase in the households' propensity to save. Policymakers hoped to prompt firms to pay higher wages by making them stronger and more competitive through measures in their favour, above all of a financial nature. Together with temporary tax cuts, these higher wages were in turn supposed to prompt households to increase their consumption. In actual fact, none of this happened precisely for the two reasons pointed out above. Companies generally chose to repair their financial situation rather than increase wages or pay dividends. Engaged in

[14]Ramaswamy and Rendu (2000) observe that, in packages, spending commitments that are in a certain sense irreversible are usually avoided. Similarly, tax cuts are designed to provide temporary stimulus.

[15]Koo (2009) uses this expression to indicate the consequences of the policy adopted by Japanese firms as from the 1990s. The bursting of the speculative bubble caused a collapse in the value of the collateral for the sums borrowed by firms, which therefore attached increasingly importance to paying off their debts and regaining financial stability. The policy of minimising debts rather than maximising profits led firms to reduce their investments, which contributed to the contraction of aggregate demand.

deleveraging, they made no contribution to aggregate demand because they not only used their profits to pay off their debts but also refused to grant pay increases. At the same time, an increase in the households' propensity to save continued all through the 1990s.[16]

Most of these aspects of the effectiveness of specific fiscal measures are lost in the estimates of fiscal multipliers. It would be important to consider the composition and destination of the direct expenditure in the different sectors, to distinguish between the various decisions on indirect expenditure and to take into account the permanent or temporary nature of both expenditures and tax cuts. This analysis finds practically no space in the empirical literature. There are very few estimates aimed at assessing the effectiveness of the various types of expenditure and those that do exist concentrate almost exclusively on a general comparison of public consumption and public investment. On the other side, the varying effectiveness of different measures on the taxation side is almost completely neglected.[17] The lack of detailed analysis may easily lead to the conclusion that fiscal policy is generally ineffective, whereas the problems could be linked to the choice of measures whose multiplicative effect is somewhat limited.

## 5 The lost decade and recent fiscal policy measures

With the above analysis of the implemented measures in mind we now propose some further considerations. At this point, an effort of synthesis proves very useful also with a view to assessing the fiscal measures implemented by the Abe government in 2013–2014. In its initial phase, indeed, Abe's fiscal policy (the so–called Abenomics' second arrow) seems to have repeated some of the mistakes made during the lost decade.

It is useful in this respect to reconsider what happens in Japan before and during the first attempt at fiscal consolidation. The recent Japanese fiscal policy, in fact, seems to have revived something similar. As already seen, the Japanese government attempts a manoeuvre of fiscal consolidation already in 1997, when the economy is recovering, but still very weak.[18] Within that manoeuvre, a key role is given to an increase in the rate of VAT, the sales tax, from 3% to 5%. At the same time, however, it is feared that this might have negative effects on consumption. As a result, the decision to implement the measure is accompanied by an effort to offset it with (mostly temporary) tax cuts, some of which included in the packages. The overall effect proves somewhat negative. The initial decision is to increase VAT in order to increase tax revenues and stabilise the debt to GDP ratio. This increase is preceded by mainly temporary cuts to direct taxes,

[16]The average propensity to save rose from 22.5% in 1985 to 28.7% in 1998.

[17]For an interesting attempt to take the composition of expenditure into account within an econometric model, see Kalra (2003). Miyazaki (2010) is instead the only author to attempt to distinguish the effectiveness of permanent and temporary tax measures.

[18]The second attempt, made in 2001, was to have virtually the same results.

which are supposed to stimulate economic activity. However, the premature increase in VAT has a substantial depressive effect on consumption and income. The weakness of the economy leads to a reduction in the tax revenue. At the same time, the adoption – before and after the consolidation effort – of direct and indirect spending measures with limited or no multiplicative effect does not help increase the GDP, while contributing to the deterioration of public finances and a rocketing debt to GDP ratio.

This experience can be generalised. An increase in expenditure or a decrease in taxes is usually expected to have a certain expansionary effect on income with a view to obtaining an increase in GDP. This increase is in turn supposed to generate an increase in tax revenues and hence either improve or at least ensure the stability of the debt to GDP ratio. If the adopted measures are either subject to leakages or of limited expansionary effectiveness, however, the positive effect on income will be equally limited. Conversely, the increase in spending and the reduction in tax revenues will end up having a negative impact on public finances.

Abenomics' fiscal measures raised concerns when they were approved (Grimes, 2013; Patrick, 2013), precisely as they seemed to follow a pattern close to the experience of the first fiscal consolidation. Recently, Abenomics' critical aspects have been stressed again. In particular, the further VAT increase from 5% to 8% into force from April 2014 has been reported as a clear sign of contractionary fiscal policy (Hausman and Wieland, 2015; Krugman, 2016). At the same time, the stimulus packages implemented starting from January 2013 seem once again to combine spending suitable to stimulate demand and spending that is probably not able to do it. Prevalence of indirect and financial measures, in fact, is apparent when data on these packages are examined (see Cabinet Office, 2013). In other words, the government has apparently adopted again the stop–and–go approach accompanied by measures with dubious multiplicative effects.

## 6 Conclusions

In the light of these considerations on the Japanese lost decade, caution is needed when the effectiveness of fiscal policy is to be assessed. The apparent ineffectiveness of expansionary measures that emerges from many multiplier estimates – as it happens in the literature on Japan – cannot be taken at face value.

First, generally speaking, the very construction of the estimates is by no means uninfluenced by their theoretical context of reference, which in some cases rules out *in advance* any possibility of certain measures of expansionary fiscal policy proving effective to anything other than a limited degree. Second, it is impossible for estimates alone to take into account the great complexity of a budgetary system. As far as Japan in concerned, all

the different budgets and their interrelations, the switching of budget items and the stop–and–go approach adopted by governments are unavoidably neglected. This necessarily impairs the reliability of the obtained results; the risk is to collect data that have little or no correspondence with the reference theoretical values. Finally, the estimates neither account for the quality of expenditure, nor they assess the specific multiplicative impact of the individual adopted measures. They fail to consider the effectiveness of the direct and indirect fiscal measures and of specific decisions on taxation.

In view of these limitations, combining quantitative analysis with a qualitative approach capable of focusing on the specific decisions of fiscal policy and their possible multiplicative effect becomes indispensable. This way of proceeding makes it possible to distinguish between the implemented measures. It also allows to take all the different budgets into consideration and see how individual expenditures and tax cuts are modified over time and sometimes offset in the stop–and–go approach.

In–depth analysis shows first that the Japanese policy may not have been as (thoroughly) expansionary as is commonly thought. Second, the governments do not appear to have accorded priority to the measures with the greatest expansionary and multiplicative effectiveness. It seems very unlikely that the Japanese fiscal policy can be truly incisive unless *highly multiplicative* and *permanent* measures are adopted with conviction. Moreover, the Japanese case highlights how important it is not to confuse or equate *Keynesian* public spending with any other type of public intervention. Regarding *Keynesian* policies as ineffective on the basis of the Japanese policies, which cannot be considered entirely *Keynesian*, might be very misleading.

## A Appendix. Reconstruction of fiscal packages' content: Problems and sources

Table 2 in the text presents in detail the content of the ten stimulus packages approved from 1992 to 2000, the lost decade proper. It also presents the overall figures of the five subsequent packages (which it is interesting to consider, since the Japanese stagnation continued well into the 2000s).

The reconstruction of the packages is problematic. On certain items there is no divergence between the various sources. For example, no doubts arise on sums allocated for lending to SMEs and for GHLC loans. The data for measures to boost employment are also fairly clear and unproblematic. Matters are much more complex, however, as regards public works. First of all, a certain degree of inconsistency is frequent in the data available on public works carried out by local governments. This is largely due to the difficulty of distinguishing clearly between the responsibilities of different levels of government. Secondly, there is the problem of purchases of land, which are not infrequently included, at least in part, under the heading of public works carried out by central government. The OECD, for instance, proposes a separate category including «specifically announced purchases of land in anticipation of further public works, *in addition to* land purchases included under public investment [emphasis added]» (OECD, 1996, table A1). This means that at least part of the purchases of land comes under the heading of public works. Other authors maintain instead that the two items should be kept separate as far as possible.

While data of the Cabinet Office of the Japanese government are directly available for the packages of 1999–2000, reference must necessarily be made for the previous years to OECD Economic Surveys and data contained in studies regarding the scale and effectiveness of Japan's public expenditure during the lost decade. While these data often differ from one work to another and appear completely incoherent at first sight, many of the differences actually arise from different classifications of items and can therefore be eliminated quite easily. In some cases, however, the differences cannot be accounted for, due to the utter lack of detailed information about the expenditure classification criteria. Even the Cabinet Office data for 1999 and 2000 are not particularly detailed, above all – unfortunately – as regards public works.

Reference can generally be made to Brückner and Tuladhar (2010, Appendix I, table 8), whose data are not only accurate and complete but also consistent with Cabinet Office data as are available. Fundamental importance also attaches to the OECD data (1992; 1994; 1996; 1998; 2000; 2002). Reference can also be made to Mühleisen (2000, table 6.1). The data presented by Nanto (2009, table 1) and Ito (2011) are not detailed but generally consistent with those of the above sources. Two more interesting sources are Nakao (2002, table 1) and Ishii and Wada (1998), which do, however, present some problems.

Nakao considers *public investment* in somewhat vague terms, without specifying what this heading covers, but above all including GHLC loans and excluding measures related to natural disasters. As a result, his figures for public investment are generally higher (but sometimes lower) than those in the other works considered. Ishii and Wada instead take only local government into consideration in the case of public works; their overall figures are underestimated. The lack of detail (and explanations) in these two studies makes it more difficult to understand what the divergences are due to. On the other hand, the data supplied by the Cabinet Office (2001a; 2001b; 2002) make it relatively easy to reconstruct the content of the packages introduced after 2000. For our present purposes, however, it is considered sufficient to indicate their overall figures.

## References


Afonso, A. and M. Aubyn (2008). Macroeconomic Rates of Return of Public and Private Investment: Crowding-in and Crowding-out Effects. Working paper n. 864, ECB, Frankfurt.

Barro, R. (1974). Are government bonds net wealth? *The Journal of Political Economy 82*(6), pp. 1095–1117.

Batini, N., L. Eyraud, L. Forni, and A. Weber (2014). Fiscal Multipliers: Size, Determinants, and Use in Macroeconomic Projections. TNM/14/04, IMF, Washington, D.C.

Bayoumi, T. (2001). The Morning After: Explaining the Slowdown in Japanese Growth in the 1990s. *Journal of International Economics 53*(2), pp. 241–259.

Blanchard, O. and D. Leigh (2013). Growth Forecast Errors and Fiscal Multipliers. Working paper n. 13/01, IMF, Washington, D.C.

Blanchard, O. and R. Perotti (2002). An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes Output. *The Quarterly Journal of Economics 117*(4), pp. 1329–1368.

Brückner, M. and A. Tuladhar (2010). Public Investment as a Fiscal Stimulus: evidence from Japan's regional spending during the 1990s. Working paper n. 10/110, IMF, Washington, D.C.

Cabinet Office (2001a). Immediate Action Program for Structural Reform. `http://www.kantei.go.jp/foreign/policy/2001/1214kinkyu_e.html`.

Cabinet Office (2001b). Summary of the "Front-loaded Reform Program". http://www.kantei.go.jp/foreign/policy/2001/economic&fiscal/1026kaikaku-sum_e.html.

Cabinet Office (2002). Program to Accelerate Reforms. Technical report.

Cabinet Office (2013). Economic measures for realization of virtuous cycles. http://www5.cao.go.jp/keizai1/2013/20131205_economic_measures_all.pdf.

Coenen, G., C. Erceg, C. Freedman, and D. Furceri (2010). Effects of Fiscal Stimulus in Structural Models. Working paper n. 10/73, IMF, Washington, D.C.

Corsetti, G., A. Meier, and G. Müller (2012). What Determines Government Spending Multipliers? Working paper n. 12/150, IMF, Washington, D.C.

Favero, C., F. Giavazzi, and J. Perego (2011). Country Heterogeneity and the International Evidence on the Effects of Fiscal Policy. Working paper n. 17272, NBER, Cambridge (MA).

Fueki, T., I. Fukunaga, and M. Saito (2011). Assessing the Effects of Fiscal Policy in Japan with Estimated and Calibrated DSGE Models. Working paper n. 11–E–9, Bank of Japan, Tokyo.

Grimes, W. W. (2013). Will Abenomics Restore Japanese Growth? Technical report, National Bureau of Asian Research, Washington, D.C.

Hausman, J. K. and J. F. Wieland (2015). Overcoming the Lost Decades? Abenomics after Three Years. *Brookings Papers on Economic Activity 51*(2), pp. 385–413.

Hemming, R., M. Kell, and S. Mahfouz (2002). The Effectiveness of Fiscal Policy in Stimulating Economic Activity – A Review of the Literature. Working paper n. 02/208, IMF, Washington, D.C.

Hernández de Cos, P. and E. Moral-Benito (2016). Fiscal Multipliers in Turbulent Times: The Case of Spain. *Empirical Economics 50*(4), pp. 1589–1625.

Hirschman, A. O. (1986). *Rival Views of Market Society and Other Recent Essays*. Cambridge (MA): Harvard University Press.

Ishii, H. and E. Wada (1998). Local Government Spending: Solving the Mystery of Japanese Fiscal Packages. Working paper n. 98–5, Institute for International Economics, Washington, D.C.

Ito, T. (2011). Sustainability of Japanese Sovereign Debt. In T. Ito and F. Parulian (Eds.), *Assessment on the Impact of Stimulus, Fiscal Transparency and Fiscal Risk*, pp. 29–76. Jakarta: ERIA.

Iwata, Y. (2009). Fiscal Policy in an Estimated DSGE Model of the Japanese Economy: Do Non-ricardian Households Explain All? Discussion paper n. 216, ESRI, Dublin.

Kalra, S. (2003). Fiscal Policy: an Evaluation of its Effectiveness. In T. Callen and J. Ostry (Eds.), *Japan's Lost Decade: Policies for Economic Revival*, pp. 164–176. Washington, D.C.: IMF.

Keynes, J. M. (1980). Activities 1940-1946. Shaping the Post-war World: Employment and Commodities. In D. E. Moggridge (Ed.), *The Collected Writings of John Maynard Keynes, vol. 27*. London: Macmillan.

Koo, R. C. (2009). *The Holy Grail of Macroeconomics: Lessons from Japan's Great Recession*. Singapore: John Wiley.

Krugman, P. (2016). Abenomics and the Single Arrow. `http://krugman.blogs.nytimes.com/2016/08/15/abenomics-and-the-single-arrow/?_r=0`.

Kuckuck, J. and F. Westerman (2013). On the Size of Fiscal Multipliers: a Conterfactual Analysis. Working paper n. 96, Institute of Empirical Economic Research, Osnabrück.

Kumhof, M., D. Laxton, D. Muir, and S. Mursula (2010). The Global Integrated Monetary and Fiscal Model (GIMF) – Theoretical Structure. Working paper n. 10/34, IMF, Washington, D.C.

Kuttner, K. N. and A. Posen (2002). Fiscal Policy Effectiveness in Japan. *Journal of the Japanese and International Economy 16*(4), pp. 536–558.

Mazzucato, M. (2013). *The Enterpreneurial State*. London etc.: Anthem Press.

Miyazaki, T. (2010). The Effects of Fiscal Policy in the 1990s in Japan: a VAR Analysis with Event Studies. *Japan and the World Economy 22*(2), pp. 80–87.

Mühleisen, M. (2000). Too Much of a Good Thing? In T. Bayoumi and C. C. (Eds.), *Post-bubble Blues: How Japan Responded to Asset Price Collapse*. Washington, D.C.: IMF.

Nakao, T. (2002). Japan's Experience with Fiscal Policy in the 1990s in the Aftermath of Bubble Economy. In *Impact of Fiscal Policy*. Roma: Banca d'Italia.

Nanto, D. K. (2009). The Global Financial Crisis: Lessons from Japan's Lost Decade of the 1990s. Working paper, Congressional Research Service, Washington, D.C.

OECD (1992). Economic Survey of Japan 1992. OECD Publishing, Paris.

OECD (1993). Economic Survey of Japan 1993. OECD Publishing, Paris.

OECD (1994). Economic Survey of Japan 1994. OECD Publishing, Paris.

OECD (1995). Economic Survey of Japan 1995. OECD Publishing, Paris.

OECD (1996). Economic Survey of Japan 1996. OECD Publishing, Paris.

OECD (1997). Economic Survey of Japan 1997. OECD Publishing, Paris.

OECD (1998). Economic Survey of Japan 1998. OECD Publishing, Paris.

OECD (1999). Economic Survey of Japan 1999. OECD Publishing, Paris.

OECD (2000). Economic Survey of Japan 2000. OECD Publishing, Paris.

OECD (2002). Economic Survey of Japan 2002. OECD Publishing, Paris.

Patrick, H. (2013). Abenomics: Japan's New Economic Policy Package. Occasional working paper n. 62, Center on Japanese Economy and Business, Columbia Business School, New York.

Posen, A. S. (1998). *Restoring Japan's Economic Growth*. Washington, D.C.: Institute for International Economics.

Rafiq, S. (2012). Is Discretionary Fiscal Policy in Japan Effective? *The B.E. Journal of Macroeconomics 12*(1), pp. 1–47.

Ramaswamy, R. and C. Rendu (2000). Identifying the Shocks: Japan's Economic Performance in the 1990s. In T. Bayoumi and C. Collyns (Eds.), *Post Bubble Blues: How Japan Responded to Asset Price Collapse*. Washington, D.C.: IMF.

Scissors, D. and K. Yokoe (2012). Japan's National Budget: Time to Give up on Keynesianism. `http://www.heritage.org/research/reports/2012/03/japans-national-budget-time-to-give-up-on-keynesianism`.

Tsuri, M. (2005). Discretionary Deficit and its Effects on Japanese Economy. *Applied Economics 37*(19), pp. 2239–2249.

Yoshikawa, H. (2001). *Japan's Lost Decade*. Tokyo: The International House of Japan.

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