U.PORTO

FEP FACULDADE DE ECONOMIA
UNIVERSIDADE DO PORTO

ONE-OFF MEASURES: BRINGING OBJECTIVITY TO A KEY
CONCEPT OF THE STABILITY AND GROWTH PACT

Diogo Sena Esteves Cardoso

Dissertation

Master in Economics

Supervised by

Maria Manuel Pinho

2020

Acknowledgements

The completion of this work marks the end (or, at least, a pause) of my (almost lifelong) journey as a student, which seems a good opportunity to express my gratitude towards everyone that has made part of it.

In this sense, I would like to thank my family for supporting me to make my desired choices, my friends and colleagues for the experiences we have shared and my professors (both from *Colégio de Nossa Senhora da Bonança* and from the Faculty of Economics of the University of Porto) for the dedication and knowledge they transmitted.

Finally, I would like to thank Professor Maria Manuel Pinho for challenging me to do this work, but also for her availability and constant support throughout its elaboration. I feel I was very privileged to have worked with such dedicated person.

Abstract

One-off measures are essential to provide an accurate picture of European Union (EU) countries' underlying fiscal position. However, the fact that their identification depends on expert judgment, guided by a set of principles defined by the European Commission (EC), raises the risk of measurement inconsistencies and of creating noxious incentives for governments to artificially improve official budgetary figures. Accordingly, the focus of our work is on identifying the main problems of the current framework to classify one-off measures, while also determining whether the latter are associated to specific types of events (with budgetary impact). To this end, we develop a two-stage empirical strategy focused on the period 2010-2019, comprising, firstly, a critical, descriptive analysis of Portuguese one-off measures (in the light of the EC's criteria to identify one-off measures) and, secondly, a panel data econometric study of the factors that led to the recognition of one-off measures across all EU Member States. Our findings suggest that the accurate quantification of one-off measures is currently a difficult task, due to the complexity of anticipating the duration of the impact of those events, but also to the subjectivity and opacity of the existing classification framework. Furthermore, we verify that, in Portugal, one-off measures were mainly associated to problems in the banking system. When transposed to the EU dimension, we find that countries' (net) capital transfers and the strength of fiscal rules were the main determinants of one-off measures over the past decade, holding a positive relationship with them.

Resumo

As medidas *one-off* são essenciais para uma compreensão exata da posição orçamental "implícita" dos países da União Europeia (UE). Porém, o facto de a sua identificação se basear no julgamento de especialistas, orientado por um conjunto de princípios definidos pela Comissão Europeia (CE), gera o risco de existirem inconsistências na mensuração das medidas e de se criarem incentivos nocivos no sentido de os governos procederem à melhoria artificial dos resultados orçamentais oficiais. Assim, o foco deste trabalho é a identificação dos principais problemas do atual enquadramento de classificação das medidas *one-off*, mas também o de determinar se as mesmas se associam a certos tipos de eventos (com impacto orçamental). Para atingir estes propósitos, foi desenvolvida uma estratégia empírica com duas fases, centradas no período 2010-2019, contendo, primeiro, uma análise crítica e descritiva das medidas *one-off* em Portugal (à luz dos critérios definidos pela CE para a sua identificação) e, posteriormente, um estudo econométrico, com dados em painel, dos fatores que levaram ao reconhecimento de medidas *one-off* em todos os Estados-Membros da EU. As conclusões apontam para o facto de a quantificação precisa das medidas *one-off* ser atualmente uma tarefa difícil, dada a complexidade de antecipar a duração do impacto de tais eventos e o caráter subjetivo e opaco do atual enquadramento para classificar as medidas *one-off*. Adicionalmente, verificou-se que, em Portugal, as medidas *one-off* estiveram sobretudo ligadas a problemas no sistema bancário. Transpondo a questão para a dimensão da UE, concluiu-se que as transferências de capital (líquidas) e a força das regras orçamentais de cada país foram os principais fatores determinantes das medidas *one-off* na última década, apresentando uma relação positiva com as últimas.

Table of contents

List of tables

List of figures

Abbreviations and acronyms

Banif – *Banco Internacional do Funchal*

BES/NB – *Banco Espírito Santo/Novo Banco*

BPN – *Banco Português de Negócios*

BPP – *Banco Privado Português*

CFP – *Conselho das Finanças Públicas*

CGD – *Caixa Geral de Depósitos*

EC – European Commission

EMU – European Monetary Union

ESA 2010 – European System of Accounts 2010

ESCB – European System of Central Banks

EU – European Union

EU22 – European Union 22 members

EU28 – European Union 28 members

FE – Fixed-Effects

GDP – Gross Domestic Product

IMF – International Monetary Fund

IV – Instrumental Variable

MTO – Medium-Term Objective

OECD – Organisation for Economic Cooperation and Development

OLS – Ordinary Least Squares

PIT – Personal Income Tax

RE – Random-Effects

SFA – Stock-Flow Adjustments

SGP – Stability and Growth Pact

TSLS – Two-Stage Least Squares

UTAO – *Unidade Técnica de Apoio Orçamental*

List of countries:

AT – Austria

BE – Belgium

BG – Bulgaria

CY – Cyprus

CZ – Czech Republic

DE – Germany

DK – Denmark

EE – Estonia

EL – Greece

ES – Spain

FI – Finland

FR – France

HR – Croatia

HU – Hungary

IE – Ireland

IT – Italy

LT – Lithuania

LU – Luxembourg

LV – Latvia

MT – Malta

NL – Netherlands

PL – Poland

PT – Portugal

RO – Romania

SE – Sweden

SI – Slovenia

SK – Slovakia

UK – United Kingdom

1. Introduction

The underlying fiscal position of a country, which portrays its medium/long-term budgetary situation, is assessed in the European Union (EU) through the estimation of the general government structural balance. The latter is of acute importance within the EU fiscal architecture, as it is a key variable of the Stability and Growth Pact: each Member State has a commitment towards a certain structural balance target; if the objective is not accomplished, governments could be forced to proceed to fiscal consolidation in order to re-enter the adjustment path.

The European Commission (EC) provides the guiding methodology for estimating the structural balance in the EU, defining it as the "cyclically-adjusted general government balance net of one-off and other temporary measures" (European Commission [EC], 2019, p.8). While the cyclical adjustment – which lies beyond the scope of the dissertation – has an analytical solution, the identification of one-off measures relies on a case-by-case expert judgment, guided by a set of principles defined by the EC (Joumard, Minegishi, André, Nicq, & Price, 2008).

This (relatively more) subjective nature of one-off measures arises important problems. Indeed, if we consider that an ideal fiscal rule should be "well defined, transparent, adequate, consistent, simple, flexible, enforceable, and efficient" (Kopits & Symansky, 1998, p.18), there appear to be a number of flaws in the current EC guidelines to identify one-off measures, that, in turn, may undermine the structural balance rule (or, at least, its intended purpose). As pointed out by Marinheiro (2015), the fact that those guidelines are merely indicative does not ensure cross-country consistency, not to mention that governments could be exploring the existing "grey areas" to artificially improve their figures. There are also practical difficulties in quantifying one-off measures, because some of them may also entail a longer-term component (that must not be included in the one-off impact). As a result, the combination of these issues brings about the risk that the determination of one-off measures has not been absolutely uniform and precise, hence potentially distorting the structural balance of EU countries.

Even if the existing economic literature on structural balances has been devoting greater attention to the cyclically-adjusted balance than to one-off measures, we find that the latter is equally worth of attention. For instance, the impact of one-off measures has

been far from negligible, as "these have often led to sizeable, but temporary, shifts in fiscal balances, sometimes by more than several percentage points of GDP" (Joumard et al., 2008, p.5). This is evident in the EC's AMECO Database[1], where it is observable that, between 2010 and 2019, one-off measures had an impact of -0.3% of GDP for the EU28[2] 10-year average; additionally, and perhaps most importantly, many Member States have experienced one-off measures with impacts above 1.0% of GDP (the paramount examples being Ireland in 2010, with -21.1%, and Slovenia in 2013, with -10.4%).

Therefore, against this background, the value of our work lies on the contribution to the very scarce economic literature on one-off measures, by providing a comprehensive and updated overview on the topic (in a context where the EC framework for classifying one-off measures suffered a major revision in 2015 and most literature was published before that time), but also by answering to the following research questions: What are the main shortcomings of the current concept of one-off measures (both in theory and in practice) that may harm the evaluation of EU countries' underlying fiscal positions? Have one-off measures been associated to a certain type of events or display any patterns?

Though there are some brief remarks in economic literature with regard to the first question (particularly in technical, institutional reports), we consider that there is not any scientific work that analyses one-off measures to the extent we set out to do. For instance, based on the aforementioned framework, we shall discuss the main challenges faced in the operation of the concept of one-off measures (for example, the possibility that they might be used to some extent as gimmicks, in order to fabricate improved budgetary figures), critically analyse the current EC principles and briefly evaluate alternative methodologies – with a main focus on the one suggested by Joumard et al. (2008), which guides the classification of one-off measures carried out by the Organisation for Economic Cooperation and Development (OECD).

Afterwards, we proceed to a two-stage empirical strategy concerning the period of 2010 to 2019. The first stage is a case study focused on Portuguese one-off measures,

---

[1] The database is available at https://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm and was last accessed on 19 June 2020.

[2] Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

motivated by the fact that the country registered the largest median value of net one-off within the EU during that period, and presents an interesting variety of events that led to the identification of one-off measures; therefore, with a systematic, descriptive summary of those measures, we shall provide an empirical answer to our two research questions. The second stage extends the scope to the EU, with an econometric study that identifies the main factors that contributed to the identification of one-off measures in the group of the 28 EU Member States; to our knowledge, our econometric model is pioneer in the limited literature on one-off measures, which is as well a significant contribution from our work.

Departing from this outline, the remaining structure of the dissertation is as follows: Chapter 2 reviews the role of one-off measures in the EU's Stability and Growth Pact and discusses the rationale behind them; Chapter 3 describes the existing methodologies that guide the identification of one-off measures (the EC's, but also alternative frameworks); Chapter 4 puts the theoretical aspects to test, in a case study of Portuguese one-off measures and, afterwards, in an econometric analysis of one-off measures in the EU; finally, Chapter 5 draws conclusions.

2. The role of one-off measures in the current European fiscal architecture

With the aim of illustrating the relevance of the study of one-off measures, we present the role that they play in the current version of the Stability and Growth Pact (SGP), deeply intertwined with the notion of underlying fiscal position (section 2.1.). Afterwards, we discuss the rationale behind the concept of one-off measures (section 2.2.), suggesting that, in practice, policymakers have had the temptation to distort it in order to improve the budgetary figures of their countries.

2.1. The underlying fiscal position: an increasingly important notion

The underlying fiscal position refers to the structural perspective of public finances and is a proxy for their situation if the economy were operating at full-potential (Mourre, Astarita, & Princen, 2014). The rationale for excluding short-term perturbations is the need to better understand the quality and sustainability of public finances (EC, 2006; Larch & Turrini, 2010), by distinguishing the mere impact of automatic stabilizers from that of discretionary policy undertaken by governments (Mourre, Isbasoiu, Paternoster, & Salto, 2013), and thus allowing better decision-making.

Within the EU fiscal framework, particularly in the context of the SGP, the underlying fiscal position is depicted by the structural budget balance, which, as already mentioned, consists of the "cyclically-adjusted general government balance, net of one-off and other temporary measures" (EC, 2019, p.8).

This fiscal aggregate gained relevance in the first revision of the SGP, in 2005, as a result of the replacement of the "close to balance or in surplus" (CTBOIS) target by a country-specific "medium-term objective"[3] (MTO), defined in structural terms (EC, 2005). This amendment was motivated by the difficulties of Member States to comply with the former target, since it was not contingent for the evolution of economic conditions (Larch & Turrini, 2010); that proved to be particularly problematic in the presence of downturns, as the room for using proper counter-cyclical fiscal policy (the operation of automatic

---

[3] The calculation of the MTO considers three country-specific components: the budget balance that would stabilise the debt ratio at 60% of GDP, the increase in age-related expenditure and the additional effort for countries with public debt above 60% of GDP (Banco de Portugal, 2015; EC, 2019).

stabilisers, for example) was being narrowed by the rigidity of the CTBOIS requirement. Unlike its predecessor, however, the concept of MTO intends to provide greater flexibility, in the sense that "the underlying fiscal position of Member States is conducive to medium-term sustainability while allowing for the free operation of automatic stabilisers" (EC, 2019, p.6); for instance, in the event of an economic contraction, governments can incur in a structural deficit (of, say, 1% of GDP) and yet make significant use of automatic stabilizers (-2%), while simultaneously complying with the 3% headline deficit ceiling[4] (Claeys, Darvas, & Leandro, 2016).

The practical importance of the structural balance (always in hands with the concept of MTO) depends on which arm of intervention countries find themselves into. Under the "preventive arm" of the SGP (whose core mission is ensuring that countries achieve their MTO or, at least, that they converge towards it), the EC imposes a specific annual adjustment of the structural balance towards the MTO, in case of significant deviation from the target or from the adjustment path (Banco de Portugal, 2015; EC, 2019); additionally, the consolidation effort considers an expenditure benchmark "according to which growth of public expenditure (net of discretionary revenue measures and other factors) has to be lower than medium-term potential GDP growth for countries that have not reached their MTO" (Angerer & Hagelstam, 2019, p.3). However, if a country is under the "corrective arm" of the EU fiscal surveillance program (applicable to Member States facing an "excessive deficit procedure"), the scenario is toughened as the EC demands a tighter fiscal adjustment for both headline and structural targets, in addition to compliance with an "adjusted fiscal effort" indicator (Banco de Portugal, 2015).

More recently, and in parallel to the SGP, countries of the European and Monetary Union (EMU) committed themselves to include in national legislation a deficit ceiling of 0.5% of GDP for the MTO[5], in the light of the 2012 Fiscal Compact (EC, 2019).

In this context, it is clear that the structural balance acquired a prominent role in the budgetary dynamics of the European fiscal architecture, meaning that an accurate

---

[4] The 3% threshold, known as one of the original SGP requirements, is also relevant in the definition of the MTO. As the EC (2019, p.7) states, "MTOs should be set so as to provide a safety margin with respect to the 3% of GDP deficit limit".

[5] The structural deficit ceiling can be extended to 1.0% of GDP, provided that public debt is significantly below 60% and long-term sustainability risks of public finances are low.

assessment of the underlying fiscal position is crucial to properly assess compliance with country-specific objectives. Nonetheless, when compared to the estimation of the headline budget balance, the structural balance's entails additional potential sources of inaccuracy, resulting from its two supplementary steps.

The first step consists of controlling for the effects of economic cycles, according to an analytical methodology that removes the cyclical component from the headline budget balance (Mourre et al., 2014). However, apart from the uncertainty of estimating an unobservable aggregate (Conselho das Finanças Públicas [CFP], 2012; Hagemann, 1999), this step is fairly standardized by the EC and should not generate inconsistencies inside the EU[6] (even though it is not necessarily free from criticism). The second adjustment refers to the exclusion of one-off measures, which depends on a case-by-case expert judgment, guided by a set of principles defined by the EC (Joumard et al., 2008).

Therefore, we would argue that this last step is potentially more prone to inaccuracies and thus worthier of our attention. Moreover, as we shall explore in the next section, the interest should be reinforced by the fact that the original purpose of one-off measures may be undermined by a political manipulation of the concept.

2.2. The rationale behind one-off measures: well-intended (but nevertheless) gimmicks?

Having emphasized the importance of a rigorous assessment of EU countries' underlying fiscal positions, it is high time to focus on one-off measures. This concept refers to events that produce a budgetary impact, but have an intrinsically exceptional nature; in the EU, for instance, they are defined as "measures having a transitory budgetary effect that does not lead to a sustained change in the budgetary position" (EC, 2006, p.112-113).

In this line of reasoning, one may then question what triggers one-off measures. The answer is that while some may arise from government discretion, others might be set off by events beyond its extent of control (court decisions, natural disasters, among others). The former type of one-off measures has raised particular interest in literature, because even though they can be motivated by efficiency-improving efforts in the management of

---

[6] The existence of different methodologies worldwide may, however, generate discrepancies across international institutions' results (Banco de Portugal, 2015). Nevertheless, as the SGP only adopts the EC's methodology, cross-country consistency in the cyclical adjustment is ensured for EU countries.

public assets, it is more often claimed that their main *de facto* purpose is the reduction of nominal deficits through the implementation of easier, short-term fiscal decisions (Besnard & Paul, 2004; EC, 2004, 2006; Koen & van den Noord, 2005). In this sense, one-off measures are sometimes argued to be an expedient to comply with the SGP targets (namely the 3% headline deficit ceiling and the country-specific MTO), while simultaneously avoiding the reputational and/or monetary costs of breaching them (EC, 2004).

Though such situations could be fairly justified due to their exceptional character (or may just reflect policymakers' preferences for short-term measures over structural reforms of the economy), it is nonetheless debated that one-off measures have occasionally been used as mere gimmicks, that is, as artifices that fabricate enhanced budgetary results, but without actually corresponding to an improved economic reality. That is the case of an inadequate recognition of deficit-increasing one-off measures (i.e. expenditure-increasing and/or revenue-decreasing operations), because it would artificially improve the structural balance and, consequently, the country's underlying fiscal position (Unidade Técnica de Apoio Orçamental [UTAO], 2016a). So, even if creative accounting practices have been more frequently associated in literature to fiscal aggregates such as stock-flow adjustments (Milesi-Ferretti, 2004; von Hagen & Wolff, 2006), it seems that one-off measures are another aggregate that may as well entail some moral hazard in its operation.

To our knowledge, only Dafflon and Rossi (1999) and Koen and van den Noord (2005) explicitly address this matter in the context of one-off measures, even though they mix them with creative accounting measures[7]. Those works identify, for different sets of EU countries, one-off and creative accounting measures made available to public knowledge, which appear to have been pure "fiscal gimmicks".

Koen and van den Noord (2005) extend their research by using a *logit* model to estimate, from 1993 to 2003, the probability of gimmickry having occurred in 15 EU countries, as a function of a "bare" deficit[8] (and controlled for other factors). The results

---

[7] Creative accounting measures are defined by Koen and van den Noord (2005, p.7) as "the more or less unorthodox treatment of operations involving the general government, which affects the fiscal balance or public debt but not, or far less, government net worth. This may reflect 'opportunistic' accounting or simply 'incorrect' imputation.".

[8] Defined as "...the notified deficit adjusted for any recorded and quantified gimmicks and adjusted for UMTS [Universal Mobile Telecommunications Service] proceeds (since the European Commission has stated that it assesses fiscal balances excluding these proceeds)." (Koen and van den Noord, 2005, p.14).

suggest that there is indeed a positive relationship between the likelihood of gimmickry and the level of the "bare" deficit, but they also highlight other important features: first, that the odds of gimmickry in the period preceding the formation of the EMU were higher than in the first years of the SGP; second, that a more decentralised budgetary process raised the chances of gimmickry; third, the fact that a country was either breaching the nominal budget or debt ceiling amplified the probability of resorting to gimmickry. However, these interesting outcomes suffer from the shortcoming that only the publicly noticeable accounting tricks were considered (based on the authors' judgement), thus implying that a proportion of other potential gimmicks probably remained undisclosed.

According to Bernoth and Wolff (2008), this type of behaviour entails important macroeconomic implications, because financial markets are concerned with such artificial manipulation of public accounts, which translates into higher sovereign risk premiums. For instance, in the authors' model, creative accounting is considered an explanatory variable of "the yield spread between a bond issued in EU country i and a benchmark country j, both denominated in the same currency" (p.469), and it is either proxied by stock-flow adjustments (SFA) – as defined by von Hagen and Wolff (2006) – or by "fiscal gimmickry" – as identified by Koen and van den Noord (2005), being relevant to recall that this concept includes one-off measures. For a sample of 14 EU countries, over the period 1991-2005, the estimates suggest that the second measure of creative accounting is relatively more important to financial markets, as a 1% increase of fiscal gimmickry led to a spread aggravation of nearly 20 basis points during that period, whereas it only accounted for a deterioration of 0.5 basis points in the case of a 1% growth of SFA. It is also remarkable that the adhesion to the EMU actually offset these impacts, as the coefficients for both *Gimmickry x EMU* and *SFA x EMU* variables then became slightly negative.

Against this background, it then seems that discouraging policymakers from taking inappropriate advantage of one-off measures constitutes a great challenge for the EC, as the practical implementation of the concept may actually contrast with its original objective (which is to depict a more accurate underlying fiscal position, through the exclusion of exceptional factors). Therefore, given that the risk of an artificial handling of one-off measures should be accounted for when designing the rules to their identification, we will critically discuss the actual capacity of the current EC framework to avoid such issues, in the next chapter.

3. Frameworks for one-off measures identification

Considering the arguments from the previous chapter, it appears that the ideal guidelines to identify one-off measures would be those capable of ensuring that the label is restricted to the most limited number of events and, simultaneously, of establishing barriers to the inadequate manipulation of the concept. Accordingly, in this chapter, we begin by discussing the strengths and weaknesses of the EC framework to address such matters (section 3.1.), and then proceed to a brief presentation of existing alternative methodologies (section 3.2.). We finish by assessing the performance of one of them, namely the methodology used by the Organisation for Economic Cooperation and Development (OECD) (section 3.3.).

3.1. The EC methodology

As they are the cornerstone for the identification of one-off measures in the scope of the Stability and Growth Pact, Section 3.1. is dedicated to the presentation of the EC framework for the classification of one-off measures. Concretely, we critically analyse the key principles that should be accounted for in that process (subsection 3.1.1.) and, afterwards, summarize more general aspects that have been deemed to be problematic in the EC methodology (subsection 3.1.2.).

3.1.1. Core principles to identify a one-off measure

The identification of one-off measures in the EU follows five principles (Table 1), established by the EC (2015). Based on them, EC country experts analyse the information provided by national authorities and judge if certain events with fiscal impact qualify as one-off measures (Banco de Portugal, 2015). As a complement to these principles, the EC (2015) also provides a non-exhaustive, indicative list of concrete one-off measures, which attempts to clarify some borderline cases (their usefulness will be shown in the forthcoming section 4.1.).

Departing from the notion that "the provisions on one-offs were primarily introduced in order to avoid policy measures that do not lead to a sustained improvement of the budget balance being treated as structural" (EC, 2015, p.55), we took the liberty to organize the set of principles for classifying one-off measures according to three main purposes: (a) underlining the exceptionality of such events; (b) preventing their misuse by

policymakers; and (c) imposing numerical (objective) constraints to their identification (Table 1).

Table 1 – EC principles for the classification of one-off measures and their main purposes

EC principles	Purposes
I: *One-off measures are intrinsically non-recurrent*	(a)
II: *The one-off nature of a measure cannot be decreed by law or by an autonomous government decision*	(b)
III: *Volatile components of revenue or expenditure should not be considered one-off*	(a)
IV: *Deliberate policy actions that increase the deficit do not, as a rule, qualify as one-offs*	(b)
V: *Only measures having a significant impact on the general government balance should be considered one-offs*	(c)

Source: Own elaboration based on EC (2015).

(a) Underlining the exceptionality of such events

Purpose (a) is promoted by Principles I and III. The former postulates that a one-off measure is best characterized as an event that does not produce a persistent change in the fiscal position, with the practical implementation of this notion relying upon the assessment of two dimensions of any measure: temporariness – the duration of the event shall not exceed two years, even if its impact can extend beyond that period – and sustainability – the distinctive feature of a one-off measure, either from the revenue side (e.g. sale of non-financial assets) or from the expenditure side (e.g. equity injection in a bank), is that it cannot constitute a continual and consistent practice, because it would otherwise endanger the sustainability of public finances.

The major flaw of Principle I, however, concerns the quantification of one-off measures, because some events may produce effects both in the present (one-off) and in the future (structural), that must be properly separated (EC, 2015). Indeed, following the EC (2004), we can distinguish three types of one-off measures depending on the nature of their impact on the underlying fiscal position. Firstly, there are the so-called "clean" one-off measures, whose impact is confined to the year of occurrence of the event; the Universal Mobile Telecommunications Service licenses are an illustrative example, as they generated immediate one-off revenues in the years when they were sold (Koen & van den Noord, 2005). Secondly, "self-reversing" one-off measures are those where the momentary

effect is offset (partially or completely) by another effect in the opposite direction; Joumard et al. (2008, p.24) give the example of an immediately self-reversing one-off measure concerning the recording of an operation on nuclear reactors, which "involved a combination of a capital transfer perfectly matched by a reduction in gross fixed capital formation and was thus budget-neutral". Lastly, one-off measures that, apart from the "clean" impact, entail an extended, potentially permanent, effect in the same direction; for instance, a tax amnesty[9] generates an exceptional revenue in the period it is confined to, but it can also potentially broaden the tax base in the coming years, thus producing a structural change in the economy (EC, 2015; Koen & van den Noord, 2005). Albeit the EC (2015, p.54) defines that "as a rule, the impact recorded after the end of the two-year period should not be classified as part of the one-off effect", we find that the complexity of properly identifying the effect of one-off measures from an inter-temporal perspective could undermine (to some extent) the process' accuracy.

Principle III is the second we find to support purpose (a). It states that possibly non-cyclically adjusted volatility of government revenues/expenditures must not be regarded as one-off. However, in practice, this principle could prove hard to be implemented as "it may not always be easy to distinguish between the intrinsic volatility of revenue and expenditure and measures taken in response to an exceptional event" (EC, 2015, p.55), which would ultimately be considered as one-off. According to Marinheiro (2015), taking a step further, in the sense of identifying the budgetary aggregate where the transaction is recorded, could provide a greater insight into the sources of such volatility (for instance, capital transfers and investment are typically more volatile than intermediate consumption) and hence be helpful in the abovementioned distinction.

(b) Preventing their misuse by policymakers

Purpose (b) is also buttressed by two principles, in this case number II and number IV. The former is very clear-cut, because it signals to governments that announcing the one-off nature of certain measures is absolutely irrelevant to the judgement of EC country experts (otherwise, the concept could be even more easily manipulated by governments).

---

[9] A tax amnesty is defined by the EC (2015, p.57) as "any government decision allowing private or corporate taxpayers to regularize their position vis-à-vis the tax authorities on relatively favourable terms (which may include a temporary reduction of administrative fines or the authorities removing the threat of criminal prosecution)."

The other principle, Principle IV, focuses on deficit-increasing measures and confines the one-off label to very specific actions, tackling exceptional events beyond government control. The rationale behind this asymmetric restriction is a prudent approach that seeks to prevent gimmickry in the estimation of the fiscal stance (Marinheiro, 2015), since the exclusion of deficit-increasing measures (through their inadequate recognition as one-off) would improve the structural balance and ultimately depict a "false" underlying fiscal position.

(c) Imposing numerical (objective) constraints to their identification

Finally, goal (c) is supported by Principle V, which imposes that a one-off measure must have a minimum (rounded) impact of 0.1% of GDP[10]. This aims to avoid an excessive recognition of one-off measures, namely residual volatility of government revenues/expenditures or, simply, insignificant events. On the other hand, Principle V is very important to ensure both cross-country consistency – a measure accounting for less than 0.1% in a certain country could still be considered one-off, if it amounts to at least 0.1% in another EU country – and temporal consistency – in two consecutive years, it suffices that a measure accounts for 0.1% in at least one of them for it to be classified as one-off. In the spirit of purpose (c), the French Government (2014) suggested that fixing a maximum number of one-off measures per year could be a supplementary objective restriction, but it has not been put to use.

3.1.2. Criticism relative to the EC approach

Having critically assessed the current EC principles for identifying one-off measures, it then seems that, in practice, the whole process might not be as straightforward as the definition of one-off measures may suggest, nor as simple as merely following the aforementioned principles. For instance, the EC (2015, p.52) actually alerts that "in some cases, a certain degree of judgment may still need to be used, in particular in cases where different guiding principles appear to point to different decisions".

As additional, more general criticism, the French Government (2014) and Marinheiro (2015) observe that these EC principles do not possess legal force. In turn, this

---

[10] This threshold also applies to groups of measures that share the same nature, provided that they have a minimum aggregated impact of 0.1% of GDP.

issue arises the question of whether they could somehow be embedded in the constitution of member countries, in order to enhance their effectiveness (Marčanová & Ódor, 2014).

Another problem is that monitoring possibilities are weakened by the absence of a transparent and systematic description of one-off measures for each country (Banco de Portugal, 2015; Besnard & Paul, 2004; Marinheiro, 2015), with a justification of the recognition of such measures on the basis of compliance with the EC principles (Marčanová & Ódor, 2014). Furthermore, it is "virtually impossible to derive a long historical series" of one-off measures, as mentioned by Joumard et al. (2008, p.9), for the available data is not sufficiently detailed, but also because ex-post revisions of one-off measures often make earlier analyses' figures outdated.

All in all, these problems seem to suggest that the current EC case-by-case approach is excessively information-demanding and time-consuming (Joumard et al., 2008), which should generate a discussion on whether the current practice is overly complex and opaque. Departing from these issues, we set out to briefly examine, in the next two sections, the extent to which the available alternatives might overcome the existing flaws and thus contribute towards a more objective identification of one-off measures.

3.2. Alternative methodologies

As lending greater objectivity to the EC framework is a matter of interest, we will know discuss if anything can be learned (and potentially implemented) from existing alternative methodologies to estimate countries' structural balances. According to Banco de Portugal (2015), there are three main alternatives to the EC's approach to one-off measures – the methodologies adopted by the European System of Central Banks (ESCB), by the Organisation for Economic Cooperation and Development (OECD) and by the International Monetary Fund (IMF).

In the case of the ESCB, the estimation of the structural balance essentially differs in the cyclical adjustment (which surpasses our scope of study), whereas the concept of one-off measures does not significantly diverge from the EC's (Banco de Portugal, 2015; European Central Bank, 2014). Nevertheless, Banco de Portugal (2015) alerts that the current definition adopted by the ESCB admits a relatively broader interpretation of deficit-increasing one-off measures, though the differences in classification have ultimately proved to be reduced.

The OECD solution is based on the method presented by Joumard et al. (2008). Instead of primarily relying on the individual assessment of one-off measures, this methodology rather suggests that the deviation of government net capital transfers from a trend/normal level can be used as a proxy for one-off measures. This choice is justified by the fact that such events are typically registered in national accounts as capital transfers (specifically, capital transfers correspond to aggregate D.9 of the European System of Accounts 2010), leading to immediate advantages such as greater objectivity (in theory, corrections would only be sporadically required when unequivocal one-off measures are not registered as capital transfers) and consistency (the method relies on national accounts data, which follows international standards in its construction).

Lastly, the IMF approach is summarized in Bornhorst, Dobrescu, Fedelino, Gottschalk and Nakata (2011). The authors present "rules of thumb" to be followed in the process of classifying one-off measures, which we find to share fundamental elements from both the EC (2015) – as similar principles to the EC's are also used as judgement benchmarks – and Joumard et al. (2008) – for the capital transfer nature of one-off measures is as well underlined. Yet again, this methodology also accounts for some expert judgment freedom, contingent to the purpose of analysis or to data availability (Bornhorst et al., 2011). The most perceptible exception in the IMF approach is the fact that the exclusion of one-off measures constitutes the first step of the estimation of the structural balance, meaning that the cyclical adjustment is carried out on a headline budget balance from which one-off measures were already removed.

In the next subsection, we compare the performance of the OECD's methodology with the EC's. Note that, to our knowledge, the ESCB and IMF do not make their estimates available, which is a limitation that again reinforces the overall difficulties to bring objectivity and new perspectives to the study of one-off measures.

3.3. Can capital transfers proxy one-off measures?

Considering that, from the three alternative methodologies we just presented, the OECD's is the one that most noticeably differs from the EC's, we proceed to explore the possibility that capital transfers – specifically, the deviation of net capital transfers from trend – can be used to identify most one-off measures.

What are capital transfers?

Before going further, it is relevant to comprehend what is understood as capital transfers and the type of events that may generate them. According to the European System of Accounts (ESA) 2010, capital transfers correspond to aggregate D.9 and are either defined as a "transfer of ownership of an asset (other than inventories and cash), or the cancellation of a liability by a creditor, without any counterpart being received in return", when made in kind, or as a "transfer of cash that the first party has raised by disposing of an asset, or assets (other than inventories), or that the second party is expected, or required, to use for the acquisition of an asset, or assets (other than inventories)", when made in cash (Eurostat, 2013, p.119).

Category D.9 comprises "capital taxes (D.91)", "investment grants (D.92)" and "other capital transfers (D.99)", where the latter includes the type of transactions that we would likely associate to one-off measures. For instance, according to Eurostat (2013, p.121), examples of "other capital transfers (D.99)" are general government transfers: (i) to "owners of capital goods destroyed or damaged by acts of war, other political events or natural disasters (floods etc.)"; (ii) to "non-financial corporate and quasi-corporate enterprises to cover losses accumulated over several financial years or exceptional losses from causes beyond the control of the enterprise (even in the case of a capital injection)"; (iii) between "subsectors of general government designed to cover unexpected expenditure or accumulated deficits"; (iv) corresponding to "the counterpart transaction of cancellation of debts by agreement between institutional units belonging to different sectors or subsectors (for example, the cancellation by the government of a debt owed to it by a foreign country; payments in fulfilment of guarantees which free defaulting debtors from their obligations)" or to "the counterpart transaction of debt assumption, and of other similar transactions (activation of guarantees related to non-standardised guarantee schemes, or debt rescheduling where part of debt is extinguished or transferred)".

As we shall see in the forthcoming section 4.1., these types of events clearly match several occurrences that have ultimately been recognized as one-off measures.

Counterfactual estimation of EU countries' one-off measures

The OECD's methodology entails two major steps: the analytical estimation of deviations of net capital transfers from trend (considered a proxy for one-off measures)

and the procedure of controlling for residual individual one-off measures, based on their intrinsically exceptional nature (Joumard et al., 2008).

Given that the EC's figures (available in the AMECO database[11]) are the official ones as far as the Stability and Growth Pact is concerned, we will compare those values, firstly, with counterfactual estimates obtained when resorting to the deviations of net capital transfers from trend, and, secondly, with OECD's official values (extracted from the OECD's World Economic Outlook Database, November 2019[12]). With this exercise, our objective is to discuss whether the conclusions of Joumard et al. (2008) – that the deviation of net capital transfers from trend generally coincided with individually identified one-off measures for 9 OECD countries[13], from 1995 to 2007 – hold after more than ten years and for an extended set of countries, but also to assess how the OECD methodology fares when put against the EC's official figures.

Our estimation of the deviation of net capital transfers from trend concerns the 28 EU Member States[14], in the period between 2010 and 2019, which, as mentioned, expands the work of Joumard et al. (2008). Making use of the AMECO database, we extracted data regarding net capital transfers (corresponding to the abovementioned category D.9 of the ESA 2010)[15] for the 28 EU countries, from 1995 to 2019[16]. Then, alike Joumard et al. (2008), we resorted to a Hodrick-Prescott filter, with a *lambda* (λ) parameter set to 400, to

---

[11] The database is available at https://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm and was last accessed on 19 June 2020. Note that one-off measures' figures are only available from 2010 onwards.

[12] The database is available at https://stats.oecd.org/Index.aspx?DataSetCode=EO# and was last accessed on 19 June 2020.

[13] Belgium, France, Germany, Japan, Italy, Netherlands, Portugal, United Kingdom and United States.

[14] Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

[15] Net capital transfers are calculated as the difference between "Capital transfers received: general government" (D9r) and "Capital transfers paid: general government" (D9p), both expressed in percentage of GDP (at current prices). It would had been interesting to extend the exercise by estimating the deviation of "other capital transfers" (aggregate D.99 of the ESA 2010) from trend; however, to our knowledge, the figures of "other capital transfers" for EU Member States are not publicly available.

[16] This period is broader than the reference period of 2010 to 2019, since the inclusion of additional earlier years allows deriving a more accurate trend of net capital transfers.

determine the trend level of net capital transfers and, subsequently, to calculate the deviation from that trend, for the reference period of 2010 to 2019.

Having obtained these counterfactual estimates, we compared their 10-year average values with the official EC 10-year average figures of one-off measures. A glimpse at Figure 1 allows us to verify that, over the past decade, the variables had an unsatisfactorily disparate behaviour: some countries display quite good performances, in terms of differences between the EC values and the counterfactual estimates (Finland, Germany, Italy, Luxembourg, Sweden), while others fare very poorly (Bulgaria, Cyprus, Greece, Hungary, Ireland, Portugal, Slovenia). Moreover, considering the yearly comparison that we present in Annex 1, there are differences of significant magnitude that Figure 1 disguises, as the latter only considers time average values (the pinnacle is Cyprus, in 2018, with a difference of 6.8 percentage points).

These results are likely the reflection of the conceptual limitations inherent to this step of the methodology. Indeed, as stated by Joumard et al. (2008), there are potential problems that may arise when establishing an immediate relationship between the deviation of net capital transfers from trend and one-off measures, such as the possibility that some one-off measures are not registered as capital transfers, the distortions caused by the diverse nature of the impacts of one-off measures in the underlying fiscal position (recall, from subsection 3.1.1., that there are "clean", "self-reversing" and permanent one-off measures, which have different treatments in terms of quantification) and the conceptual limitations attached to the Hodrick-Prescott filter[17].

In the presence of such caveats, the OECD proceeds to additional individual "manual" adjustments when dealing with one-off measures (Banco de Portugal, 2015; Joumard et al., 2008), which constitutes the second step that we mentioned earlier in the introduction to this topic. Hence, we also included the OECD's values for one-off measures in Figure 1, which should account for other one-off measures that might have not been captured in the first step. In this case, however, we could only present

---

[17] The Hodrick-Prescott filter is a double-edged sword, since the advantages of the simplicity that it brings about to derive trends can be contested by arguments that it does not have actual economy theory underlying its construction (Hamilton, 2018).

observations for the 22 EU countries that coincide in the two samples[18], from 2010 to 2019.

Figure 1 – Deviation of net capital transfers from trend and one-off measures (EC and OECD figures), 2010-2019
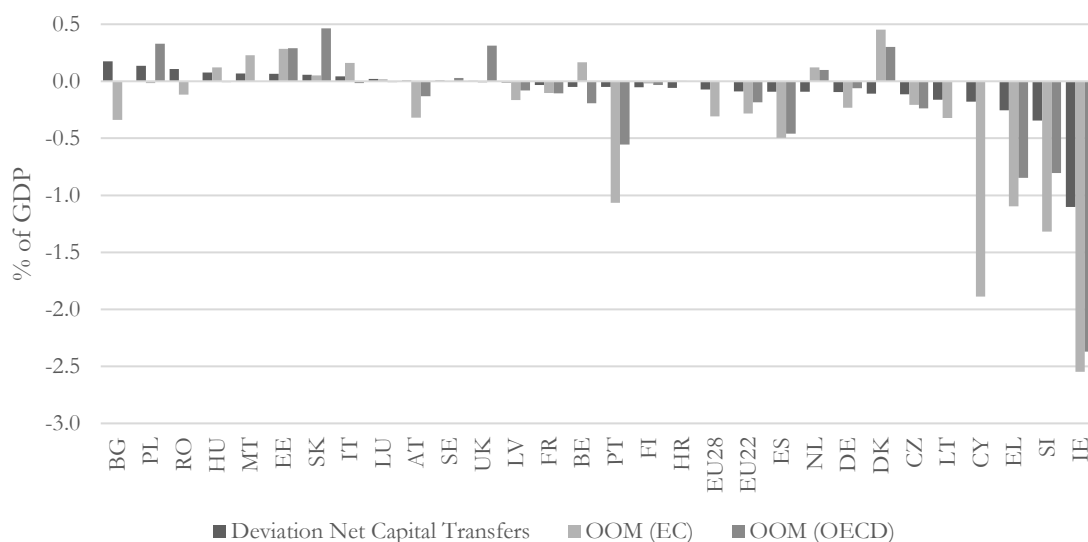
Sources: AMECO database, OECD's World Economic Outlook database.

Considering the OECD's figures, we come across a rosier scenario, for the average differences between the EC's and the OECD's one-off measures become more negligible for nearly every country; hence, these outcomes suggest that expert judgement is necessary to achieve a more accurate identification of one-off measures. Nevertheless, it is important to underline that countries like Denmark, Estonia, Greece, Hungary, Ireland or Portugal maintain significant discrepancies in some years (Annex 1), denoting that inconsistencies subsist; besides, the interpretation of the overall promising results has the risk of being biased, due to the exclusion of underperforming countries in the transition of the EU28 sample to the EU22's (such as Cyprus and Malta).

So, the brief evidence presented in this subsection seems to indicate that the mere analytical estimation of one-off measures (based on a proxy such as the deviation of net capital transfers from trend) would not be enough to provide a sufficiently accurate picture of countries' actual underlying fiscal positions. Indeed, if we consider the AMECO database's values as the correct ones (not least because they are the official values that prevail in the EU fiscal framework), there are important discrepancies in many countries, as

---

[18] Bulgaria, Croatia, Cyprus, Lithuania, Malta and Romania are absent from the OECD's database.

we show in Figure 1 and in Annex 1. Consequently, even if our analysis indicates that capital transfers play a vital part in the explanation of one-off measures, it does not corroborate the main findings of Joumard et al. (2008).

Our outcomes advocate the necessity for significant adjustments to the mere estimation of deviations of net capital transfers from trend, which, in turn, illustrates the importance of defining criteria/guidelines (such as the EC's) to orientate analysts in their task of individually identifying one-off measures – a process that could nevertheless be targeted to the correction of the analytical estimates. For instance, this last aspect is apparently supported by the increased convergence between the EC's and OECD's figures from 2015 onwards (Annex 1), as significant deviations are seldom registered since then; considering that the EC framework to classify one-off measures suffered a major revision in 2015 (EC, 2015), this could be a sign that the renovated guidelines have been fruitful in consolidating a more objective classification process.

4. From theory to practice: what has driven one-off measures over the past decade?

Having approached one-off measures from a more theoretical standpoint in the previous chapters, we now devote our attention to the empirical performance of the EC guidelines to identify one-off measures, as well as to the comprehension of the main drivers of one-off measures, with the aim of elaborating empirical answers to our research questions. To this end, we firstly analyse Portuguese one-off measures (section 4.1.) and, afterwards, proceed to an econometric study of the factors that influence the variability of one-off measures in the EU (section 4.2.).

4.1. A case study: the analysis of Portuguese one-off measures

To our knowledge, the information on one-off measures in the EU is only summarized in the EC's AMECO database, which contains the aggregated value of one-off measures, divided by country and by year, since 2010. As we pointed out before (in subsection 3.1.2.), the fact that there is no breakdown of one-off measures, i.e., that there is no official list with the description of individual one-off measures for each country, causes difficulties for a proper study of the phenomena to the EU's full extent, as it is not possible to confirm if cross-country and time consistency were assured when one-off measures were identified by EC country experts. Besides, this flaw generates the risk of gimmickry and increases lenders' concerns, as revisions of one-off measures can make the difference when the EC evaluates countries' compliance with the SGP requirements (Marinheiro, 2015).

In an increasingly complex European fiscal framework, we believe that a more transparent approach would deliver a clearer understanding of the subject of one-off measures, crucial to assess countries' underlying fiscal positions. Therefore, with the aim of illustrating the relevance of a more detailed analysis of one-off measures, we set out to examine Portuguese one-off measures, between 2010 and 2019[19], as a first stage of our empirical strategy. With this exercise, we expect to deepen the capacity to evaluate the objectivity and effectiveness of the existing EC guidelines and, more ambitiously, to come

---

[19] The reference period is that between 2010 and 2019, due to data constraints on the report of one-off measures by the EC, as we mentioned earlier. Nevertheless, for the objectives we intend to achieve within our case study, the 10-year period should prove to be a sufficiently interesting period.

up with brief suggestions that could mitigate the shortcomings of the current framework. At the same time, this case study intends to denote potential patterns displayed by one-off measures in Portugal and demonstrate the difficulties of ensuring a consistent classification.

The remainder of the section is as follows: subsection 4.1.1. justifies the choice of Portugal for our case study, subsection 4.1.2. presents the strategy of analysis and lastly, in subsection 4.1.3., one-off measures are analysed according to different categories.

4.1.1. Justifying the choice of Portugal

Prior to the exercise, we feel the need to justify the choice of the country that is going to deserve our attention. According to the EC's AMECO database, between 2010 and 2019, Portugal was the country that recorded the largest median value (in module) of net one-off measures, in percentage of GDP (-0.6%), followed with some distance by Spain (-0.3%). Additionally, Portugal was the country that registered the largest median value, in percentage of GDP, of deficit-increasing one-off measures (-0.7%), which, as previously denoted, contributes towards the improvement of the structural effort (be it artificially or not); on the other hand, as regards deficit-decreasing one-off measures, Portugal had the fifth highest median value, in percentage of GDP (0.1%, corresponding to 0.4 p.p. below the leader Greece). Hence, studying the case of Portugal over the past decade seems very relevant within our scope of analysis, since, amongst the 28 EU Member States, it was the country that more often relied on the largest sum of one-off measures, particularly on the "problematic" deficit-increasing one-off measures.

The choice of Portugal is also supported by the existence of brief analyses on its one-off measures, namely those produced by national institutions such as *Conselho de Finanças Públicas* (CFP, the Portuguese independent fiscal council), *Banco de Portugal* (the Portuguese central bank) and *Unidade Técnica de Apoio Orçamental* (UTAO, the Portuguese parliament's technical unit, dedicated to the analysis of the budget). This advantage, along with the fact that we (the authors) are Portuguese, allows us to have greater awareness of the events at stake, as well as of the circumstances under which they took place.

4.1.2. Strategy of analysis

With the goal of providing a more complete overview on the recognition of individual one-off measures in Portugal, we will use the analysis of CFP (2020b) as a benchmark, for it is, to our knowledge, the only (and most recent) source that covers the

entire reference period with regard to Portuguese one-off measures. Basing our exercise on this source allows us to overcome the problem that the EC's available data is not sufficiently detailed, but also ensures that the ex-post revisions of one-off measures are the most recent (given the publishing date of the report) and are consistent (as they are made by one single entity at a specific time).

Another point in favour is that the values recognised by CFP are very similar to those reported by the EC, as we display in Figure 2; consequently, given the unavailability of granular information from the EC, we shall assume that the individual one-off measures identified by CFP are likely the same the EC considered[20].

Figure 2 – Portuguese one-off measures (EC and CFP figures) and EU28 average, 2010-2019
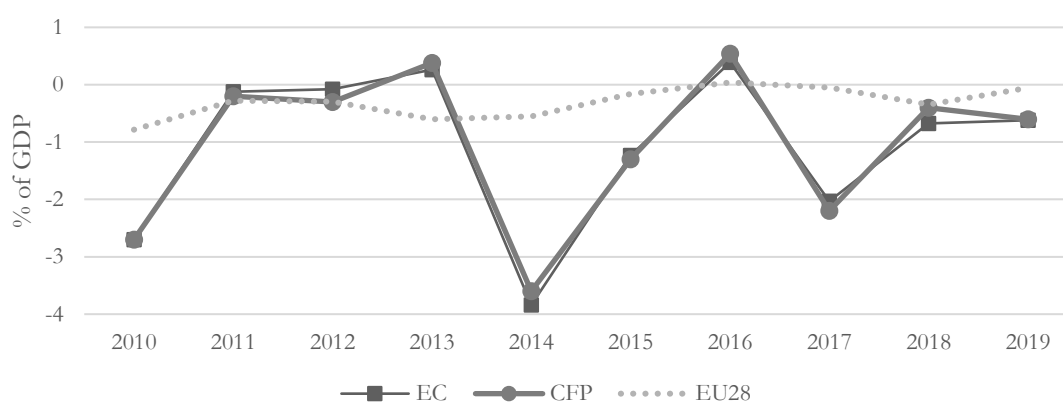
Sources: AMECO database, CFP (2020b).

To complement the analysis of CFP (2020b), we will make use of insights from additional sources whenever they prove to be relevant – earlier studies from CFP, but also reports from *Banco de Portugal* and UTAO –, which allows us to better characterize Portuguese one-off measures in the next subsection.

4.1.3. Categories of one-off measures

Departing from the information provided by CFP (2020b), we arranged Portuguese one-off measures into four main categories (Figure 3 and Table 2): banking sector, debt assumptions, tax revenue and others.

---

[20] In 2010 and 2011, CFP (2020b) actually differs from the EC in the classification of some events. For instance, those that do not constitute one-off measures, from the CFP's perspective, are referred to as "special factors". However, if we consider the sum of the figures of both one-off measures and "special factors" (as we did in Figure 2), we can observe that CFP's and EC's reported values coincide.

Figure 3 – Portuguese one-off measures by categories, 2010-2019
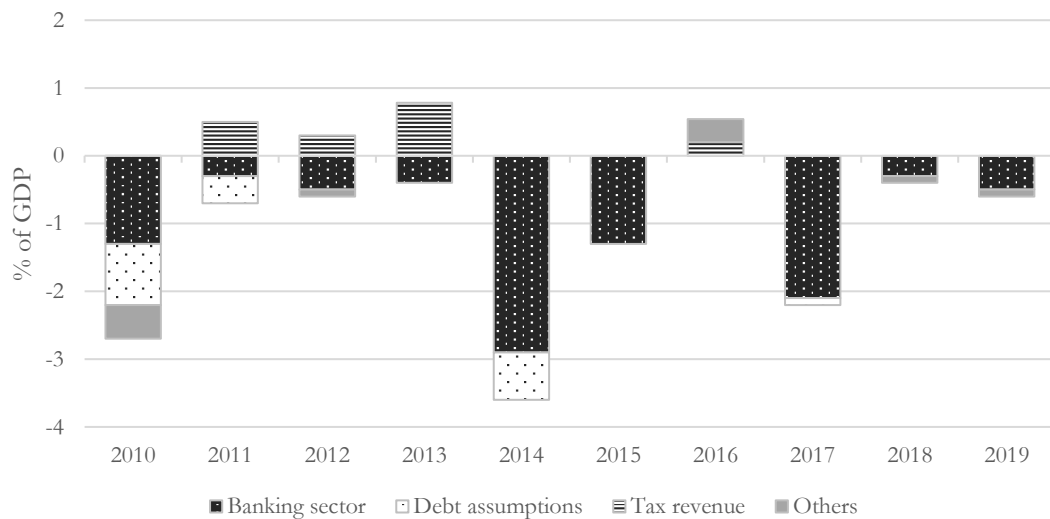
Source: Own elaboration based on CFP (2020b).

As can be observed in Figure 3, Portuguese one-off measures have mostly been deficit-increasing (in net terms), between 2010 and 2019. The magnitude of this type of measures has been very significant – particularly in 2010 (-2.7% of GDP), 2014 (-3.6%) and 2017 (-2.2%) –, which is unsurprising given the abovementioned fact that Portugal is the EU Member State with the largest median value of deficit-increasing one-off measures, in percentage of GDP.

Moreover, we can verify that this pattern has been unequivocally associated to national banks' difficulties, as the annual recurrence of one-off measures linked to the banking sector – with a cumulated net impact of -10.0% of GDP, between 2010 and 2019 – is a regularity that immediately draws our attention in Figure 3. Therefore, banking sector one-off measures have been by far the most important category, followed with great distance by debt assumptions (cumulated net amount of -2.1%) and by tax revenue (1.6%). The remaining one-off measures (-0.5%) assumed residual importance.

Having briefly analysed the importance of each group of measures, we proceed to examine the EC's recommendations regarding their potential classification as one-offs; to this end, we will consider the more detailed description of Portuguese one-off measures that is displayed in Table 2. This exercise essentially intends to generate a reflection on the treatment of the aforementioned cases, considering the principles and the typified one-off measures that feature in the EC's guide (EC, 2015). The order of appearance of the categories is based on their weight, in percentage of GDP.

Table 2 – Portuguese one-off measures by categories and disaggregated by events, 2010-2019

Categories	One-off measures		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Banking sector	Recapitalisations	*Banco Português de Negócios* (BPN)	-1.0	-0.3	-0.1							
		Caixa Geral de Depósitos (CGD)			-0.4					-2.1		
		Banco Internacional do Funchal (Banif)				-0.4						
		Banco Espírito Santo/Novo Banco (BES/NB)					-2.9				-0.4	-0.5
	Guarantee	*Banco Privado Português* (BPP)	-0.3							0.0	0.1	0.0
	Resolution	*Banco Internacional do Funchal* (Banif)						-1.4				
	Contribution to Single Resolution Fund (*Fundo Único de Resolução*)	*Banco Internacional do Funchal* (Banif)						0.1				
		Novo Banco (NB)										
Debt assumptions	Reclassification of PPP*		-0.4	-0.1								
	Recording of Madeira's Regional Government debt*		-0.5									
	Reclassification of *Via Madeira**				-0.2							
	Recording of Madeira region debts from programme contracts and football clubs*				-0.1							
	STCP and *Carris* (public transportation sector)						-0.7			-0.1		
Tax revenues	Tax amnesties	Exceptional taxation scheme for capital help abroad (RERT)	0.0	0.2								
		Exceptional scheme for settling tax and social security debts (RERD)				0.8						
		Exceptional scheme for settling tax and social security debts (PERES)							0.2			
	Personal income tax surcharge 2011				0.5	0.1						
Others	Delivery of military equipment (submarines)*		-0.5									
	Revenue from concessions		0.1	0.0								
	One-off payment to the EU budget due to revision of Gross National Income (GNI) series		-0.1			-0.1			0.0			
	Prepaid margins								0.2			
	Sale of F-16 fighter planes to Romania								0.1	0.0		
	Wildfires									0.0	-0.1	
	Resolution of Civil Protection Fee (Lisbon Municipality - Constitutional Court Decision)								0.0			
	Unfavourable court ruling on the Lisbon Municipality										0.0	
	Compensation to AEDL - *Auto-Estradas do Douro Litoral, S.A.*											-0.1
	Total		**-2.7**	**-0.2**	**-0.3**	**0.4**	**-3.6**	**-1.3**	**0.5**	**-2.2**	**-0.4**	**-0.6**

Source: Own elaboration. The figures and the majority of the events correspond to those of CFP (2020b); for the category "Banking sector", details regarding the specific events and banks involved were consulted in Banco de Portugal (2015), CFP (2012, 2013, 2016, 2018, 2020a) and UTAO (2016a, 2016b, 2018). Notes: One-off measures marked with * correspond to events that CFP (2020b) did not consider as one-off (they are rather labelled as "special factors"), contrary to the EC assessment. "Revenue from concessions" and "Sale of F-16 fighter planes to Romania" are expenditure-side one-off measures with positive signs, as they were respectively deducted from "other capital expenditure" and from "gross fixed capital formation" in national accounts (CFP, 2012, 2016).

Banking sector

The magnitude of bank-related one-off measures and the diversity of entities involved led us to disaggregate the label "banking sector" into the specific events at stake (Table 2), which required us to resort to additional sources. This layout provides a greater insight on this type of one-off measures and it is relevant as not all operations are treated equally according to the EC guide.

In the EC's list of indicative one-off measures (EC, 2015), banking-related one-off measures would typically fall under category "3.3.8. Short-term costs associated with emergency response to major natural disasters or other exceptional events" (p.61). Among the considerations made by the EC with regard to this class, there are two important aspects that may justify, to some extent, the recurrence and the size of banking-related one-off measures in Portugal, between 2010 and 2019.

Firstly, the EC (2015) states that not only "the potential collapse of a systemic bank can be considered an exceptional event that is beyond the control of the government (…) [but also that] the action taken (…) to prevent systemic damage to the financial system and the economy as a whole can be considered as a direct response to this exceptional event, which, as stated, the government could not have avoided" (p.62). Accordingly, the effort to prevent systemic financial instability could explain why the timespan of banking sector one-off measures (associated to repeated recapitalisations) has been that long in Portugal. Secondly, it is striking that "in the wake of the 2008 financial crisis, no explicit distinction was made between government intervention to prevent the collapse of systemic and non-systemic financial institutions: all deficit-increasing capital injections into distressed financial institutions have been treated as one-offs" (EC, 2015, p.62). This consideration might as well explain why several operations concerning different banks have ultimately been considered one-off in the case of the Portuguese economy.

Nevertheless, an inconsistency emerges from the fact that, outside of category 3.3.8., there is the countervailing statement that "providing financial support to loss-making state-owned enterprises is, as a rule, not considered a one-off" (EC, 2015, p.64), with principle IV (*Deliberate policy actions that increase the deficit do not, as a rule, qualify as one-offs*) being vital to this interpretation. The case of the recapitalisations of *Caixa Geral de Depósitos* (CGD) is an illustrative example of this problem: being state-owned and one of the most important Portuguese banks, we would consider CGD a systemic bank, and, consequently,

government intervention could be argued to be preventing "systemic damage to the financial system"; at the same time, however, it would constitute financial support to a loss-making state-owned enterprise, for the bank was incurring in significant losses when it received the injections in 2012 and 2017[21].

Therefore, it appears that Principle IV (*Deliberate policy actions that increase the deficit do not, as a rule, qualify as one-offs*) could always be circumvented when dealing with events originated in the banking sector. As a result, from our perspective, it is important to reflect on whether the loophole for these occurrences is excessive or not. By opening the door for virtually any banking sector-related measure to be classified as one-off, such statements may as well potentially aggravate the moral hazard in bank management, for managers would then know that government aid would always be excluded from the country's structural balance (as it would ultimately be considered one-off).

Aside from the general treatment of bank-related one-off measures that has been so far discussed, it is also possible to find guidance for specific banking sector events, namely for the guarantee conceded to *Banco Privado Português* (BPP), for the resolution of *Banco Internacional do Funchal* (Banif) and for the contribution to the Single Resolution Fund.

The guarantee granted by the Portuguese government to BPP resembles the notion of self-reversing one-off measures discussed in subsection 3.1.1., as there are two stages with offsetting impacts: the call of the guarantee and the recovery of the guarantee. Following the EC guidelines, the treatment of the former stage is dubious, because there are arguments for and against classifying it as a one-off measure. In favour of this label – apart from the two general considerations regarding banking sector aid –, we would point out that "a call of guarantees could (...) constitute a one-off if it has been prompted by the occurrence of an exceptional event" (EC, 2015, p.65). Therefore, the call of the guarantee (originally conceded to BPP in 2008[22]) could possibly be interpreted as one-off if it is

---

[21] CGD experienced losses of around €316M and €679M in 2011 and in 2012, respectively. Later, the bank registered a loss of nearly €2,050M in 2016, before recovering to a €25M profit in 2017. These figures were retrieved from CGD's 2012 and 2017 income statements, last accessed on 13 June 2020 at https://www.bportugal.pt/sites/default/files/anexos/documentos-relacionados/ft0035_d130607_h150843-0035-cam-201212-cai_1.pdf and https://www.bportugal.pt/sites/default/files/anexos/documentos-relacionados/ft0035_d180618_h170832-0035-cam-201712-cai.pdf, respectively.

[22] This information was consulted in https://observador.pt/2017/10/12/governo-so-espera-receber-dois-tercos-da-garantia-do-bpp/ and was last accessed on 29 May 2020.

considered a direct consequence of the instability stemming from the global financial crisis – with Principle I (*One-off measures are intrinsically non-recurrent*) being key to this judgement. However, from the opposing perspective, the EC (2015) stresses that the case of guarantees, in general, requires the assessment of supplementary dimensions, such as the condition that the company was "in good financial shape when it received the guarantee (i.e. not loss-making)" (p.65); if such is the case, given that BPP was conceded the guarantee in 2008 after having incurred in losses of more than €9M by the end of the 2007 exercise [23], the one-off classification should had been discouraged. Additionally, and perhaps more importantly, the EC (2015, p.56) explicitly states that "when the government has been building up implicit and/or contingent liabilities, which could reasonably be expected to materialise at some point in time (e.g. by giving guarantees to loss-making public companies), the event triggering the liability should not be considered exceptional and the resulting budgetary impact should also not be considered a one-off"; despite that BPP was not a public company, the guarantee conceded to the private bank nevertheless seems to match this case. The refund of the guarantee (the second stage) is more straightforward, as it generated exceptional revenue due to the reversal of previous financial help to BPP in 2010 (CFP, 2018, 2020a), with the call of the guarantee, hence justifying its one-off label.

Afterwards, as regards the sale and resolution of Banif, in 2015, there seems to be an indication towards its classification as one-off. Termination costs that seek to make room for the privatisation of loss-making public enterprises are deemed to be one-off by the EC (2015), as an exception to category "3.4.8. Financial support to SOEs including loss-making SOEs" (p.64) of the cases that should not be considered one-off. Indeed, not only had Banif been transferred to the public sphere in 31 December 2012 (as a result of a government injection of €1,100M[24]), but it also registered losses of €494M and €363M in

---

[23] This information was retrieved from BPP's 2007 income statement, last accessed on 29 May 2020 at https://www.bportugal.pt/sites/default/files/anexos/documentos-relacionados/0089-cai-200712-cai_0.pdf.

[24] Information consulted in https://www.publico.pt/2015/12/20/economia/noticia/banif-bom-vendido-ao--1718058 and last accessed on 11 June 2020.

2013 and 2014[25], respectively, which would thus advise considering the aforementioned exception to category 3.4.8. of the EC's guide.

Lastly, the remaining bank-related specific one-off measure refers to "the revenues received by the State as the banks' contribution to the Single Resolution Fund (…) [which] has an extraordinary nature because this contribution was not transferred to the Fund as a result of a deferral to 2024, following the Resolution of the Novo Banco and Banif banks" (CFP, 2016, p.18). Albeit there is no specific category in the EC's guide where we would place this event, the fact that it results from the resolution of two banks would denote its exceptional character and make more likely the subsequent classification as a one-off measure.

Debt assumptions

In Table 2, we identify five distinct events concerning debt assumptions, although only those relative to STCP and *Carris* (two state-owned public transportation companies) were classified as one-off measures by CFP (2020b). The remaining are viewed as mere "large scale operations that do not occur regularly" (CFP, 2012, p.12), but without fulfilling the criteria to be considered one-off, from the CFP's perspective.

Despite that the EC guide does not have a specific category where we would frame any of these events, there are two aspects worth mentioning.

Firstly, that in the explanation of Principle IV (*Deliberate policy actions that increase the deficit do not, as a rule, qualify as one-offs*), it is stressed the importance of avoiding cases where "the concept of one-off measures creates an incentive for policymakers to deliberately accumulate payment arrears or losses in the hope that these could all subsequently be settled simultaneously without affecting the structural balance" (EC, 2015, p.56). This might have been the crucial aspect that ultimately led CFP to disregard the one-off label in the cases of the recording of debts originated in Madeira (namely, from its regional government, programme contracts and football clubs) and in the reclassification of public-private partnerships (PPP).

---

[25] These figures were retrieved from Banif's 2014 income statement, last accessed on 13 June 2020 at https://www.bportugal.pt/sites/default/files/anexos/documentos-relacionados/ft0038_d150608_h121152-0038-cam-201412-cac_1.pdf.

Secondly, that the EC's approach to capital transfers is that "providing financial support to loss-making state-owned enterprises is, as a rule, not considered a one-off" (EC, 2015, p.64). Then, given that until 2014 both STCP and *Carris* systematically incurred in losses[26], the 2014 debt assumption should not had been labelled one-off, in theory, contrary to what CFP (2020b) considered. The recognition of the 2017 debt assumption as a one-off measure – in the context of the resolution of *swap* contracts with a private bank (Santander)[27] – is justified by CFP (2017) "to the extent that it was taken to put an end to the debt assumed by these companies in 2014" (p.27), but then again it seems to run counter to the EC's guidance.

In conclusion, from our perspective, the EC guidelines have room for further improvement as regards debt assumptions, in order to better clarify the conditions under which this type of events might be classified as one-off. Moreover, we reinforce the idea that the unavailability of a detailed list of one-off measures for the whole EU does not allow to verify if these occurrences have been treated consistently across Member States.

Tax revenue

According to Table 2, one-off measures related to increased tax revenue in Portugal resulted from four episodes of tax amnesties and from one exceptional tax surcharge.

Since 2010, tax amnesties have assumed a relevant magnitude, generating a cumulated one-off revenue of nearly 1.2% of GDP. These events are contemplated in the EC's indicative list of one-off measures, particularly in category "3.3.1. Tax amnesties and other similar arrangements that generate a lump-sum tax revenue" (EC, 2015, p.57). The rationale behind their one-off nature is that the temporary proposal of more favourable conditions to taxpayers typically generates an "exceptional peak in revenue just before the arrangement is expected to expire" (EC, 2015, p.57).

On the other hand, the 2011 personal income tax (PIT) surcharge would likely fit in category "3.3.2. Peaks in tax collection triggered by the introduction or expected

---

[26] From 2010 to 2014, STCP and *Carris'* cumulated losses amounted to €267M and €224M, respectively. These figures can be found in STCP and *Carris'* income statements, available at https://www.stcp.pt/pt/institucional/governo-societario/relatorio-e-contas/ and https://www.carris.pt/a-carris/empresa/relatorios-e-legislacao/, respectively, which were last accessed on 9 June 2020.

[27] This information is available at https://observador.pt/2017/04/12/governo-chega-a-acordo-com-santander-no-caso-dos-swaps/ and was last accessed on 9 June 2020.

introduction of new tax rules" (EC, 2015, p.57). However, it is important to underline that, despite having been classified as a one-off measure in 2011 and 2012, the PIT surcharge also had a more durable effect because it remained partially active until 2018[28] (even though it was originally introduced as a temporary measure, in 2011).

Therefore, this last example recalls two points that we previously discussed. Firstly, that a one-off measure can sometimes have a more lasting impact, which may cause difficulties in accurately disentangling the one-off component from medium-term effects. In this concrete case, CFP (2013, p.27) explains that, unlike in 2011 and 2012, "the PIT surcharge in 2013 and 2014 was not considered a temporary measure, since it differs from the surcharge applied in 2011 (to the Christmas bonus month or its equivalent) which proved to be discontinued over time. Furthermore, the surcharge implemented in 2013 is to be maintained in 2014, hence it does not have a transitory fiscal effect.". Secondly, this case illustrates the importance of Principle II (*The one-off nature of a measure cannot be decreed by law or by an autonomous government decision*), because this is one example of a measure that was initially announced as temporary (which could have suggested that it would constitute a one-off measure), but that actually prolonged for several years more; hence, even if a one-off impact of the PIT surcharge was identified in 2011 and 2012, Principle II assures that it was not due to the measure having been announced as temporary.

Others

Lastly, in Table 2, the remaining one-off measures correspond to a set of events that had a relatively smaller impact on public finances and that could not be logically grouped with the previous categories.

The delivery of submarines, in 2010, was one of the events that CFP (2020b) regarded as a "special factor", i.e., an event that diverges from the EC's opinion in terms of a one-off classification. Alike CFP (2012, 2020b), our view would be to not consider this event as one-off, given the indications of the EC's guide. For instance, we would place this event in category "3.4.2. Large-scale infrastructure works and acquisition of military equipment", part of the "standard cases not to be considered one-offs" (EC, 2015, p.62), especially because the purchase of these submarines might be considered a deliberate

---

[28] This information was consulted in https://www.e-konomista.pt/sobretaxa-irs/ and was last accessed on 2 June 2020.

deficit-increasing action that would violate Principle IV (*Deliberate policy actions that increase the deficit do not, as a rule, qualify as one-offs*).

Revenue from concessions (2010 and 2011) would feature in category "3.3.5. Sales of non-financial assets" (EC, 2015, p.59) from our perspective, as it is stated that such events should constitute one-off measures whenever "payments are still recorded as negative expenditure ('Acquisitions less disposals of non-produced non-financial assets', ESA2010 code NP) at the time of the payment", which is the case.

Payments to the EU budget resulting from the revision of Gross National Income (GNI) series (2010, 2012 and 2016) are one of the examples mentioned in the context of category "3.3.7. Temporary peaks in revenue or expenditure resulting from a ruling issued by a court or another independent authority, or from major statistical revisions" (EC, 2015, p.60), of typified one-off measures.

The 2016 prepaid margins refer to "the repayment of part of the pre-paid margins on loans the State received from the European Financial Stabilisation Fund" (CFP, 2016, p.19). Though there is no typified guidance for a similar event, it appears to comply with all EC principles for a potential classification as a one-off measure, given its exceptional nature and the fact that it has a deficit-decreasing impact.

The sale of F-16 fighter planes to Romania (2016 and 2017) could probably fit in category "3.3.5. Sales of non-financial assets" (EC, 2015, p.59), though it is not explicitly mentioned. Moreover, compared to the case of submarines, the sale of F-16 planes was rather a deficit-decreasing action, which would thus preclude its inclusion in category "3.4.2. Large-scale infrastructure works and acquisition of military equipment" of the "standard cases not to be considered one-offs" (EC, 2015, p.62).

The 2017 wildfires would likely be placed in category "3.3.8. Short-term costs associated with emergency response to major natural disasters or other exceptional events" (EC, 2015, p.61), qualifying as a one-off measure as their proportion surpassed the typical impact of wildfires in Portugal.

The three remaining events – the two unfavourable court decisions relative to the Lisbon municipality (2017 and 2018) and the compensation to the highway concessionary AEDL (2019) – can be understood in the context of category "3.3.7. Temporary peaks in

revenue or expenditure resulting from a ruling issued by a court or another independent authority, or from major statistical revisions" (EC, 2015, p.60).

In summary, our analysis of Portuguese one-off measures, in the light of the EC's recommendations, stresses that the events originated in the banking sector and in debt assumptions would benefit from further clarification. Indeed, as these occurrences typically have a deficit-increasing impact, it would be advisable to review the clauses under which Principle IV (*Deliberate policy actions that increase the deficit do not, as a rule, qualify as one-offs*) could be evaded, in order to ensure consistency with the intended purpose of one-off measures (section 2.2.).

4.2. Expanding the horizon to the European Union: an econometric approach

The last stage of our empirical approach to one-off measures is the econometric estimation of a model that depicts their main patterns and drivers. The importance of this application lies on the possibility of comprehending the factors that have led to the recognition of one-off measures on the whole EU, thus extending the insights that we already pondered in the study of a single country's one-off measures (Portugal). Moreover, this stage assumes an acute relevance in the context of the existing literature on the area, as it is, to our knowledge, the first econometric analysis exclusively dedicated to one-off measures. The outcomes from this section should as well reinforce the importance of establishing a more transparent framework with regard to one-off measures.

The remainder of the section is as follows: subsection 4.2.1. describes the model specification, subsection 4.2.2. presents the strategy of estimation and subsection 4.2.3. interprets the baseline results. Finally, some extensions and robustness checks are analysed in subsection 4.2.4.

4.2.1. Model specification

Given the objective of characterizing one-off measures within the EU context, the sample for our econometric estimation is composed by the 28 countries that belonged to

the EU until 2019[29], with regard to the period between 2010 and 2019; the choice of this time frame is motivated by data constraints on the dependant variable, one-off measures, whose values have only been published by the EC in the AMECO database since 2010.

The combination of several units (countries) and periods (years) of analysis fits the notion of panel data. Its use is advantageous as it allows to control for existent heterogeneity among different countries and between different years (which, otherwise, could have not been fully captured by the explanatory variables), thus enabling the identification of more accurate effects (Baltagi, 2005; Hsiao, 2007; Verbeek, 2004). For instance, the inference of model parameters is considered to be enhanced by factors such as "more variability, less collinearity among the variables, [and] more degrees of freedom" (Baltagi, 2005, p.5).

As regards the construction of the model itself, we selected a set of variables[30] that we expected to be potentially explanatory of the variability of one-off measures across EU countries and over time, according to the context that has been presented in the previous sections, but also by considering ideas from econometric models that characterize fiscal aggregates other than one-off measures (due to the lack of econometric studies specifically dedicated to them). Bearing this in mind, we defined the following baseline specification:

$$OOM_{i,t} = \beta_1 + \beta_2 GDP\_GAP_{i,t} + \beta_3 NET\_CT_{i,t} + \beta_4 GOV\_DEBT\_LAG1_{i,t} + \qquad (4.1.)$$
$$+ \beta_5 FRI_{i,t} + \beta_6 IFC_{i,t} + \beta_7 NPL_{i,t} + \varepsilon_{i,t}$$

where i=1, …, 28 and t=2010, …, 2019.

The dependant variable, OOM, is the amount of one-off measures registered in each of the 28 EU countries, in percentage of GDP, from 2010 to 2019. When interpreting this variable, the reasoning is that, in net terms, a positive sign corresponds to deficit-decreasing one-off measures (in other words, one-off measures that have a positive impact on the primary budget balance), whereas a negative sign translates deficit-increasing one-off measures; we will maintain this terminology in the remainder of the section.

---

[29] Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

[30] A summarized description of the variables can be found in Annex 2, but we will nevertheless discuss the logic behind their inclusion in the coming paragraphs.

As explanatory variables, we first selected GDP_GAP, the output gap in percentage of GDP, which is widely used in literature to capture the influence of the economic cycle on any dependant variable. If statistically significant, it will be interesting to assess whether one-off measures have been counter or pro-cyclical, in a context where the conduction of fiscal policy in advanced economies has been remarkably pro-cyclical over the past decades (Beetsma & Debrun, 2016; Hagemann, 2011).

Afterwards, we chose variables that characterize countries' public finances, to assess the premise that a more fragile fiscal condition would reinforce the use of deficit-decreasing one-off measures (EC, 2004, 2006; Koen & van den Noord, 2005). In this sense, we originally intended to include PRIM_BAL, countries' primary budget balance in percentage of GDP, and GOV_DEBT_LAG1, the stock of government debt lagged by one year[31], in percentage of GDP. However, as we shall note in the next subsection, the relationship between one-off measures and the primary budget balance is of an endogenous nature, and we were not able to find proper instrumental variables to correct that problem; hence, PRIM_BAL was dropped from the baseline specification.

As a result, we replaced PRIM_BAL with NET_CT, net capital transfers in percentage of GDP (whose importance as a driver of one-off measures was already discussed in section 3.3.). As can be seen in Annex 3, the correlation between NET_CT and PRIM_BAL is 0.60, which actually denotes a sufficiently strong relationship between the variables (though, as we explain in the next subsection, NET_CT did not prove to be a suitable instrument for PRIM_BAL). Note as well that, despite the fact that net capital transfers are likely endogenous in relation to one-off measures, it was possible to control for that issue, as shown in the next subsection.

Subsequently, our concern was to gather variables that describe countries' fiscal framework. To this end, we began by selecting the EC's *Fiscal Rules Index* (FRI), which assesses a multitude of aspects that characterize the strength of fiscal rules in each EU Member State. This intends to explore whether a more binding fiscal setting exerts any influence on the amount of one-off measures and, if so, whether it is associated to deficit-decreasing (a more likely scenario) or to deficit-increasing events.

---

[31] The inclusion of the lag is based on the rationale that, during the execution of the budget of year *t*, governments only have full knowledge of the stock of debt that has cumulated until the end of year *t-1*.

The other dimension that we capture in the scope of countries' fiscal framework is the existence of national independent fiscal councils, with the inclusion of a dummy variable (IFC). This is justified by a relatively recent research trend that has been centred on the impact of IFCs on fiscal performance, through channels such as the promotion of greater compliance with fiscal rules (Beetsma et al., 2019; Reuter, 2019). Moreover, considering the importance conceded to the work of the Portuguese IFC (*Conselho das Finanças Públicas*) in section 4.1., we have a reinforced interest in studying whether the recognition of one-off measures is actually impacted by the monitoring activity of these independent bodies.

Lastly, we chose a variable that assesses financial stability, as one of the lessons from the analysis of Portuguese one-off measures (subsection 4.1.3.) was that the banking system has been responsible for an almost yearly recurrence of one-off measures. The literature on financial stability is yet to reach a consensus on the best empirical proxy for measuring banks' soundness (Galati & Moessner, 2013), so we could actually find several candidates. Among many contributions, we underline the exhaustive IMF's *Compilation Guide for Financial Soundness Indicators* (International Monetary Fund [IMF], 2019), which provides a list of 17 core variables that depict different dimensions of banks' health: capital adequacy indicators, asset quality indicators, earnings and profitability indicators, liquidity indicators and indicators of sensitivity to market risk (IMF, 2019). To restrict our choices, we considered only one asset quality indicator, the ratio of non-performing loans over total loans (NPL), which, according to Čihák and Schaeck (2010) – who studied the performance of the variables of the IMF guide in the correct prediction of banking crises of 100 countries, from 1994 to 2007 – was amongst the most accurate crisis precursors[32].

The descriptive statistics of the explanatory variables that feature in the baseline specification are summarized in Table 3. As NPL does not have observations that cover the entire reference period for every country (the absent values are concentrated in 2019), we are in the presence of an unbalanced panel[33].

---

[32] Nevertheless, in the forthcoming subsection dedicated to robustness checks (subsection 4.2.4.), we will replace NPL with one indicator of earnings and profitability, return on equity (ROE), and one capital adequacy indicator, the ratio of capital to risk-weighted assets (C_RWA).

[33] Note that, "provided the reason we have missing data for some i is not correlated with the idiosyncratic errors, u_{it}, the unbalanced panel causes no problems" (Wooldridge, 2012, p.491). Such is our case, as the absence of data is a matter of the values not having yet been published.

Another striking aspect is the similarity of the minimum values of OOM and NET_CT, both corresponding to Ireland, in 2010; for instance, in that year, the Irish government injected an outstanding amount of funds to cope with the huge losses of its banking system, particularly in Bank of Ireland (state-owned), in Allied Irish Bank (nationalised in 2010) and in Irish Nationwide Building Society (later extinct in 2011)[34]. This case seems to illustrate the already mentioned importance of net capital transfers as a driver of one-off measures, particularly in the scope of the banking system (subsection 4.1.3.).

Table 3 – Descriptive statistics of the variables of the baseline equation

	Obs.	Mean	Std. Dev.	Maximum	Minimum
OOM	280	-0.31	1.78	3.13	-21.10
				(Denmark, 2014)	(Ireland, 2010)
GDP_GAP	280	-0.98	3.26	5.91	-15.84
				(Cyprus, 2019)	(Greece, 2013)
NET_CT	280	-0.40	1.83	3.25	-21.72
				(Bulgaria, 2015)	(Ireland, 2010)
GOV_DEBT_LAG1	280	67.37	36.06	181.21	6.11
				(Greece, 2019)	(Estonia, 2012)
FRI	280[a]	0.88	1.06	3.25	-0.97
				(Netherlands, 2016)	(Czech Republic, 2010)
IFC	280	0.59	0.49	1.00	0.00
				-	-
NPL	265	8.20	8.67	47.75	0.15
				(Cyprus, 2015)	(Luxembourg, 2012)

Note: [a] There were no observations for the FRI variable in the year of 2019. However, in order to minimize the loss in degrees of freedom, we assumed those values to be equal to 2018's, given the relative rigidness of fiscal rules in the EU context.

4.2.2. Strategy of estimation

Prior to presenting the estimation outputs, we explain, in this subsection, the assumptions made with regard to the specification of cross-section and period effects, as well as to the treatment of the endogeneity of some independent variables.

Cross-section and temporal effects

The use of panel data arises important decisions in our strategy of estimation concerning the appropriate specification of cross-sectional and temporal effects, namely

---

[34] This information consulted in https://www.telegraph.co.uk/finance/financialcrisis/8419616/Irelands-banking-crisis-timeline.html, which was last accessed on 9 June 2020.

when deciding between the fixed-effects (FE) and random-effects (RE) approaches. Such can be formally assessed with an Hausman test that compares the FE and the RE estimators. Specifically, under the null hypothesis (H_0), the RE estimator is considered to be more efficient than the FE estimator (even though both are consistent), for it is assumed that the regressors ($X_{i,t}$) are uncorrelated with the individual effects (α_i); under the alternative scenario (H_1), those regressors are correlated with α_i, implying that the RE estimator is no longer consistent and that the FE estimator is more appropriate instead (Hsiao, 2007; Verbeek, 2004).

As displayed in Appendix 1, we obtained mixed evidence when performing the Hausman test on the Ordinary Least Squares (OLS) estimates of the baseline specification (where we cannot control for endogeneity issues): it is suggested that the FE estimator is preferable for cross-section effects, whereas the RE estimator is relatively more efficient in the case of period effects. Nevertheless, in spite of these somewhat inconclusive results, we can justify the preference for FE over RE based on existing literature on panel data. Verbeek (2004), among others, suggests that our case best fits the estimation with FE, "as the individuals in the sample [countries] are 'one of a kind', and cannot be viewed as a random draw from some underlying population" (p.351).

Having decided to employ FE, we then performed redundant two-way FE tests (that is, with joint cross-section and period fixed effects), to confirm if they are advisable in any (or both) dimensions. With regard to the OLS estimates of the baseline equation, the results (in Appendix 2) show that neither cross-section nor period fixed effects are redundant (we can reject the null hypothesis), thus justifying their simultaneous inclusion in the estimation.

Endogeneity concerns

As we previously noted, the fact that one-off measures have a budgetary impact arose noteworthy concerns that endogeneity would occur when estimating the econometric model, if the primary budget balance (PRIM_BAL) were to feature as an explanatory variable. Moreover, we also suspected net capital transfers (NET_CT) to be endogenous, due to the considerations made in section 3.3.

We ought to control for this issue, due to the fact that, in the presence of endogeneity, OLS estimates will not be unbiased, centric and consistent (Wooldridge,

2012). Facing these circumstances, a possible solution is to opt instead for a Two-Stage Least Squares (TSLS) estimation, where the reasoning firstly implies the identification of adequate instrumental variables (IVs) for each potentially endogenous variable. To qualify as an IV, a variable must be simultaneously relevant, i.e., it must be a proxy of the endogenous variable (meaning that the covariance between the two variables must be different from zero), and exogenous, i.e., it cannot be correlated with the residuals of the structural equation (implying that the covariance between the potential IV and those residuals is null) (Wooldridge, 2012).

In this outline, as shown in Appendix 3, we assessed the performance of several candidate IVs for the primary budget balance (PRIM_BAL) and for net capital transfers (NET_CT). For the case of PRIM_BAL, we explored the use of the primary budget balance lagged by one period or two periods (PRIM_BAL_LAG1, PRIM_BAL_LAG2), the degree of centralization of public revenue (DC_REV), the degree of centralization of public expenditure (DC_EXP)[35] and net capital transfers – current and lagged (NET_CT, NET_CT_LAG1, NET_CT_LAG2). However, none of the candidates proved to meet the requisites of relevance and exogeneity, implying that PRIM_BAL is truly endogenous in relation to one-off measures; therefore, we removed PRIM_BAL from a hypothetical baseline specification, in order to avoid underperforming estimators. Nonetheless, with regard to NET_CT, having tested the use of net capital transfers lagged by one or two periods (NET_CT_LAG1, NET_CT_LAG2), we were able to confirm that the latter was an appropriate IV[36], thus allowing to correct for the otherwise endogenous relationship between NET_CT and OOM. Hence, we only defined one baseline specification (equation 4.1.) for the forthcoming estimations.

---

[35] The use of the degree of centralization of public revenue (DC_REV) or expenditure (DC_EXP) as potential IVs was inspired by Koen and van den Noord (2005). However, while the proxy used by those authors for the degree of centralization of the budgetary process was a "centralization index" built by von Hagen, Hallett and Strauch (2002) – which assesses the coordination between the finance minister and the spending ministers (i.e. the stronger the monitoring power of the former, the more centralized the budgetary process) –, our choice was rather the ratio of central government revenue (expenditure) to general government revenue (expenditure), as suggested by Panizza (1999), due to data availability.

[36] Note that the observations of NET_CT_LAG2 are part of our database (we included the values relative to net capital transfers of 2008 and 2009), instead of being generated by the econometric software. As a result, the use of this IV should not lead to any loss of degrees of freedom.

Before presenting the estimation outputs, we ran the Hausman test again to confirm our earlier decision to opt for fixed effects (FE). However, as displayed in Appendix 1, the test cannot distinguish between FE or RE for cross-section effects (an outcome that is possibly due to an insufficient number of observations, which does not allow for an asymptotic validation of the test results), though for period effects it indicates that the estimator of RE variance is zero, attesting that there are no RE in the temporal dimension. Therefore, even if there is a trade-off between robustness (FE) and efficiency (RE) in relation to the appropriate specification of cross-section effects, we decided for the former due to the aforementioned reasons.

Finally, note that the redundant two-way FE tests are not available for TSLS estimations; however, considering the outcomes obtained with respect to the OLS estimates, we maintained the decision to adopt both cross-section and period fixed effects.

4.2.3. Results analysis

In accordance with the assumptions that were just presented and employing *White diagonal* robust estimators (to control for the possibility of cross-section and period heteroscedasticity), we obtained the estimation output that is displayed in Table 4. For the baseline equation (specification 1), it is observable that only net capital transfers (for a *p*-value of 0.01) and the *Fiscal Rules Index* (for a *p*-value of 0.05) are significant in explaining the variability of one-off measures across countries and over time.

Concretely, net capital transfers (NET_CT) have a positive relationship with countries' one-off measures, meaning that their increase (decrease) typically generates, *ceteris paribus*, deficit-decreasing (deficit-increasing) one-off measures. This outcome attests that capital transfers play a major role in the explanation of one-off measures in the EU context, which is in line with the findings of sections 3.3. and 4.1.; for instance, as we saw in the study of Portuguese one-off measures, banking sector injections were examples of events that translated into negative capital transfers, which in turn resulted in the decrease of net one-off measures (and, therefore, in an increased budget deficit).

The significance of the *Fiscal Rules Index* (FRI) variable implies that, all else equal, more demanding fiscal rules frameworks tend to be positively associated with deficit-decreasing one-off measures. Consequently, even if we cannot determine the causes underlying this relationship (Do countries' fiscal rules prioritize compliance with the 3%

headline deficit ceiling rather than with the MTO? Is this a reflection that stronger institutions – a dimension as well captured by the *Fiscal Rules Index* – leave governments with a narrower margin to engage in deficit-increasing actions?), this result is a sign that strengthening the existing EC framework to identify one-off measures (for example, as we mentioned in the end of section 4.1., by further restricting the exceptions to Principle IV) might prevent an excessive recognition of deficit-increasing events as one-offs (which, if inadequately done, artificially improves countries' structural balances, as was discussed in section 2.2.).

The remaining variables (GDP_GAP, GOV_DEBT_LAG1, IFC and NPL) did not prove to be significant in the baseline specification.

4.2.4. Extensions and robustness checks

In this subsection, we further explore the capacity of our econometric model to explain one-off measures in the context of the EU, by making use of supplementary variables. At the same time, this analysis shall allow us to assess the robustness of the outcomes relative to the baseline equation.

Inclusion of new variables

In a first alternative specification (specification 2), we decided to capture the influence of countries' fiscal transparency. Concretely, we used Transparency International's *Corruption Perception Index* (CPI) as a proxy for it, since, to our knowledge, there is no variable that directly measures fiscal transparency in a comprehensive way. However, the inclusion of CPI did not alter the baseline results (Table 4).

Afterwards, we explored if political factors exerted any influence in the recognition of one-off measures. This was assessed with two distinct variables: ELECTION, a dummy variable that signals the occurrence of legislative elections (specification 3), and GOV_PARTY, an index from the Comparative Political Dataset that characterises the ideological orientation of the government in office[37] (specification 4). The outcomes of the specification featuring ELECTION (Table 4) are similar to those of the baseline model (with ELECTION being insignificant), although some differences emerge when considering the specification with GOV_PARTY; in this case, though GOV_PARTY is not itself significant, it causes important changes in the influence of the other variables: the

---

[37] The index's values range from 1 (right-wing) to 5 (left-wing). Further details can be found in Annex 2.

Table 4 – Estimation results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Intercept	-0.1093	-0.9161	-0.1108	-0.7194	-0.3288	-0.2763	-0.0526	-0.1213	-0.1766	-0.0660	0.0842
	(0.5627)	(1.1070)	(0.5664)	(0.7252)	(0.5097)	(0.5956)	(0.5901)	(0.1878)	(0.4581)	(0.4476)	(0.8713)
GDP_GAP	-0.0956	-0.1035	-0.0958	-0.0842	-0.0792	-0.0905	-0.0912	-0.0858	-0.0907	-0.0683	-0.0727
	(0.0629)	(0.0697)	(0.0629)	(0.0628)	(0.0593)	(0.0611)	(0.0671)	(0.0548)	(0.0671)	(0.0437)	(0.0594)
NET_CT	**1.0684*****	**1.0919*****	**1.0699*****	**0.9688*****	**1.0493*****	**0.9966*****		**0.9658*****	**1.0432*****	**1.0447*****	**1.0473*****
	(0.1775)	(0.2081)	(0.1763)	(0.1384)	(0.1626)	(0.1327)		(0.1340)	(0.1679)	(0.1735)	(0.1667)
GOV_DEBT_LAG1	0.0013	0.0012	0.0012	0.0098	0.0039	0.0056	-0.0042		0.0022	-0.0007	-0.0015
	(0.0084)	(0.0085)	(0.0084)	(0.0097)	(0.0077)	(0.0086)	(0.0097)		(0.0075)	(0.0057)	(0.0076)
FRI	**0.1543****	**0.1567****	**0.1547****	**0.1483***	**0.1491***	**0.1549***	0.1241	0.1174		**0.1499***	**0.1421***
	(0.0770)	(0.0792)	(0.0768)	(0.0881)	(0.0781)	(0.0852)	(0.0769)	(0.0796)		(0.0850)	(0.0734)
IFC	0.0612	0.0214	0.0606	0.0181	0.0800	0.0114	0.1915	0.1102	0.1326	0.0857	0.0963
	(0.1760)	(0.1957)	(0.1757)	(0.1885)	(0.1745)	(0.1871)	(0.1647)	(0.1726)	(0.1889)	(0.1861)	(0.1514)
NPL	-0.0155	-0.0162	-0.0155	**-0.0314****	-0.0153	**-0.0320****	**-0.0265***	**-0.0257***	-0.0142		
	(0.0140)	(0.0139)	(0.0141)	(0.0144)	(0.0139)	(0.0149)	(0.0152)	(0.0146)	(0.0138)		
CPI		0.0132									
		(0.0210)									
ELECTION			0.0187								
			(0.0886)								
GOV_PARTY				0.0653							
				(0.0494)							
BANK_CRISIS					0.3289						
					(0.2127)						
FIN_CRISIS						0.0419					
						(0.1708)					
DEV_NET_CT							**1.0307*****				
							(0.1685)				
GOV_DEBT_EXC_LAG1								**0.8682***			
								(0.4681)			
EMU									0.1293		
									(0.6037)		
ROE										-0.0021	
										(0.0119)	
C_RWA											-0.0067
											(0.0256)
Observations	265	265	265	216	265	218	265	265	265	268	271
R²	0.8707	0.8664	0.8704	0.9135	0.8757	0.9102	0.8702	0.8867	0.8733	0.8627	0.8733
P-value (F-statistic)	0.0109	0.0103	0.0127	0.0086	0.0142	0.0061	0.0091	0.0098	0.0034	0.0000	0.0041

Note: ***p-value < 0.01, **p-value < 0.05, *p-value < 0.1. Robust standard errors in parentheses. *EViews* estimation outputs can be consulted in Annex 4.

impact of NET_CT slightly decreases and NPL becomes significant (for a p-value of 0.05), holding a negative relationship with one-off measures – that is, *ceteris paribus*, as credit default increases, governments will typically resort to deficit-increasing measures (most likely with the aim of providing financial support to the banking system).

Finally, we assessed the behaviour of one-off measures when a crisis occurred. This was tested with the alternated inclusion of two dummy variables (specifications 5 and 6): one that distinguishes the existence of a financial crisis (FIN_CRISIS), as defined by Lo Duca et al. (2017), and another that signals a systemic banking crisis (BANK_CRISIS), according to Laeven and Valencia (2018). There is a trade-off when deciding which of these variables is preferable, because, while the first may be conceptually broader than the second[38], it has less observations[39]. The results (Table 4) display that neither variable is significant, perhaps due to the fact that we are already including period-fixed effects in the estimation; despite that, compared to the baseline results, the inclusion of FIN_CRISIS reduces the positive influence of NET_CT and renders NPL significant (for a p-value of 0.05), which display a negative relationship with respect to one-off measures. However, as this specification only covers the period from 2010 to 2017 (due to the absence of observations of FIN_CRISIS for 2018 and 2019), we would take some prudence when emphasizing the importance of this outcome.

Substitution of variables

To assess the robustness of our conclusions, we substituted some explanatory variables of the baseline specification. For instance, we began by replacing NET_CT with DEV_NET_CT, the deviation of net capital transfers from trend (a fiscal aggregate that we

---

[38] According to Lo Duca et al. (2017), financial crises verified the following conditions "(i) the financial system acting as a shock originator or amplifier and/or (ii) systemic financial intermediaries experiencing distress or going bankrupt and/or (iii) substantial crisis management policy interventions" (p.3). In turn, systemic banking crises were considered whenever there were "(i) significant signs of financial distress in the banking system (as indicated by significant bank runs, losses in the banking system, and/or bank liquidations) and (ii) significant banking policy intervention measures in response to significant losses in the banking system" (Laeven & Valencia, 2018, p.4).

[39] FIN_CRISIS observations only go as far as 2017 and it would be imprudent to further extend them on our own, since a financial crisis was still considered to be "ongoing" in Greece, in 2017 (without any prediction for its ending). On the contrary, BANK_CRISIS has observations until 2018, which we can extend to 2019 with safety (given that, to our knowledge, no systemic banking crisis occurred that year in any EU country).

estimated in section 3.3.); to control for the potential endogeneity, we also used a 2-period lagged version of that variable (DEV_NET_CT_LAG2) as an instrument. As can be seen in Table 4 (specification 7), DEV_NET_CT is as well significant (for a *p*-value of 0.01) and also has a positive relationship with one-off measures: *ceteris paribus*, the more positively (negatively) distant net capital transfers are with regard to their trend level, the more deficit-increasing (deficit-decreasing) one-off measures there will be. Hence, this outcome indeed suggests that DEV_NET_CT relates to exceptional events that ultimately result in one-off measures, as was already explored in section 3.3.

Subsequently, alike Koen and van den Noord (2005), we replaced GOV_DEBT_LAG1 with GOV_DEBT_EXC_LAG1 (specification 8), a dummy variable that identifies countries with excessive debt levels (lagged by one year), with the threshold being a debt stock of 100% of GDP; the rationale behind this variable is the possibility that the impact of government debt on one-off measures is only intelligible when the stock of debt becomes excessive. This distinction resulted in the identification of 7 EU countries with excessive figures, at least in one year (Belgium, Cyprus, Greece, Ireland, Italy, Portugal and Spain). According to the estimation results (Table 4), GOV_DEBT_EXC_LAG1 is indeed significant (for a *p*-value of 0.1) and has a positive impact on one-off measures; this suggests that, *ceteris paribus*, a country with a debt stock above 100% of GDP typically registers more deficit-decreasing one-off measures than one with a more moderate debt (probably because some fiscal consolidation had to be implemented due to the financial situation of the country). Furthermore, compared to the baseline equation, the influence of NET_CT is slightly reduced and NPL is rendered significant (for a *p*-value of 0.1), displaying a negative sign as expected.

In another specification (specification 9), instead of the *Fiscal Rules Index* variable (FRI), we included the dummy EMU, which signals membership to the European Monetary Union. This allows the assessment of an important matter, for we previously pointed out some empirical works that argue that gimmickry (or creative accounting practices) became less likely once the European countries adhered to the EMU (Bernoth & Wolff, 2008; Koen & van den Noord, 2005), possibly as a consequence of the commitment

to a more binding fiscal policy framework[40]. However, it did not prove to be significant and its inclusion did not alter the baseline results.

Lastly, instead of NPL, we alternately considered one indicator of earnings and profitability, return on equity (ROE) (specification 10), and one capital adequacy indicator, the ratio of capital to risk-weighted assets (C_RWA) (specification 11). Recall that these variables also had good performances as banking crisis precursors, according to Čihák and Schaeck (2010). However, neither ROE nor C_RWA proved to be significant.

In conclusion, the results that were obtained with our econometric model clearly make a case for the importance of net capital transfers (NET_CT) and of the strength of countries' fiscal rules (FRI) as determinants of one-off measures. The former might be originated in several types of events, as we saw when we discussed the definition of the concept under the ESA 2010 (section 3.3.) and in the overview of Portuguese one-off measures (section 4.1.). The meaning of the latter might have different explanations, but an important policy implication to take from its significance is that firm and objective guidelines to identify one-off measures will likely prevent the excessive recognition of deficit-increasing one-offs (section 2.2.), hence contributing to a more accurate assessment of the underlying fiscal position.

Non-performing loans (NPL) were only significant in four of the eleven specifications we present in Table 4, but, in our opinion, that should not hinder the perception that banking sector events often generate one-off measures; instead, the results could just imply that NPL is not a perfect proxy of the instability of the financial system or that bank injections are already being accounted for by the variable NET_CT. Excessive debt levels (above 100%) are also apparently important in explaining the variability of one-off measures across the EU, but we regard this outcome with some prudence as the variable GOV_DEBT_LAG1, comprising all "types" of debt stocks (i.e. excessive or not), did not prove to be significant in ten of the eleven specifications.

---

[40] This last aspect was the main reason that led us to choose the FRI variable in first place, because, in theory, this variable would offer a richer insight into countries' fiscal setting than a mere dummy that distinguishes EMU from non-EMU members.

5. Conclusion

One-off measures, far from being a residual aggregate in EU countries' public accounts, have had a significant impact over the past decade. Their importance in the Stability and Growth Pact is utmost, because, being a component that is considered in the estimation of the structural balance, it ultimately influences the EC's monitoring activity with regard to Member States' compliance with their Medium-Term Objective (MTO). However, as we discussed in our work, there are several aspects that may undermine the objectivity of one-off measures' classification, which have to do with the essence of the existing methodology.

Accordingly, our first research question intended to pinpoint the main shortcomings of the current concept of one-off measures, which may distort the evaluation of EU countries' underlying fiscal positions. From a theoretical standpoint, we would summarize the main problems into two main aspects pointed out by the scarce economic literature on this topic: firstly, the difficulties to fully identify, *ex-ante*, the impact of a one-off measure (thus often requiring *ex-post* revisions); secondly, the risk of an inconsistent classification across countries and over time, which might be motivated by the subjectivity of the process of identifying one-off measures (as it relies on expert judgement), the lack of legal force from the EC's principles and the opacity in the available data (only presented since 2010 and without a justified description of the included measures). In practice, as illustrated with greater detail in the case study of Portuguese one-off measures, the main complications arise when the EC's guidelines seem to be overlapping. Specifically, this occurred when we tried to assess the merits of a one-off classification of bank-related events and of debt assumptions. Moreover, the former appear to benefit from an important escape clause to Principle IV (*Deliberate policy actions that increase the deficit do not, as a rule, qualify as one-offs*) of the EC's guide, which, in our opinion, would be worth revisiting in order to ensure that the original objective of one-off measures is preserved.

Afterwards, we arose the research question of whether one-off measures have been associated to a certain type of events. To this end, we developed a descriptive analysis of one-off measures identified in Portugal (the EU Member State with the largest median value of one-off measures from 2010 to 2019) and distinguished four main categories of one-off measures: banking sector, debt assumptions, tax revenue and others. Clearly, from 2010 and 2019, one-off measures in Portugal were mainly associated to problems in its

banking system, which led to the recognition of several one-off measures with a cumulated net impact of -10.0% of GDP. Debt assumptions (-2.1%) and tax revenue (1.6%) proved to be of much smaller magnitude, as did the remaining one-off measures (-0.5%).

Then, to assess if the previous outcomes would hold when transposed to the reality of the 28 EU countries between 2010 and 2019, we developed an econometric model where one-off measures played as the independent variable. By adopting a Two-Stage Least Squares method of estimation, and assuming both cross-section and period-fixed effects, one explanatory variable proved to be consistently significant: net capital transfers (NET_CT). Its positive influence was however no surprise, for we discussed that the OECD's methodology devotes great importance to the role of net capital transfers in explaining one-off measures, but also because we concluded, from the Portuguese case study, that the two most important categories of one-off measures often generated general government capital transfers to distressed institutions. Countries' fiscal rules setting, measured by the EC's *Fiscal Rules Index* (FRI), also emerges as a very relevant factor in explaining one-off measures and is associated with deficit-decreasing events; hence, a potential policy implication is that investing in more objective guidelines to identify one-off measures might pay dividends, as it will likely prevent the excessive recognition of deficit-increasing one-off measures. To a lesser extent, as it was only significant in four of all eleven specifications, non-performing loans (NPL) reinforce the relationship between banking sector fragilities and one-off measures.

In conclusion, we consider that the main strength of our work is as well its main weakness: the scarcity of economic literature on one-off measures means that our contribution should prove valuable, even if we had to sail in unchartered waters to develop it. From our perspective, future help to navigation will have to do with improvements in terms of data availability and transparency, namely having EU countries' one-off measures figures prior to 2010 published and a thorough description of one-off measures identified in each Member State; for instance, that would allow a greater sample of study for our econometric model, but also a more extensive case analysis. Be as it may, we hope that our study may generate a clearer and more objective discussion on potential solutions to the abovementioned problems, for we share the idea that "conventions evolve and that there will always exist a grey area, so that any operational definition is bound to be debatable" (Koen & van den Noord, 2005, p.5).

Appendices

Appendix 1 – Hausman test

The Hausman test compares the performance of the Random-Effects (RE) estimator with the Fixed-Effects' (FE). Under the null hypothesis (H_0), the RE estimator is considered to be more efficient than the FE estimator (even though both are consistent), for it is assumed that the regressors ($X_{i,t}$) are uncorrelated with the individual effects (α_i); under the alternative scenario (H_1), those regressors are correlated with α_i, implying that the RE estimator is no longer consistent and that the FE estimator is more appropriate instead (Hsiao, 2007; Verbeek, 2004).

OLS estimates

Concerning the OLS estimates of the baseline specification (where we cannot control for endogeneity), the outcomes of the Hausman test indicate that we can reject H_0 for cross-section effects (for a *p*-value of 0.01), meaning that the FE estimator is preferable. Nevertheless, for period effects, the RE estimator is relatively more efficient (we do not reject H_0).

Output of the Hausman test (OLS estimates)

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	22.076347	6	0.0012

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
GDP_GAP	-0.045536	-0.038808	0.000116	0.5314
GOV_DEBT_LAG1	-0.000771	0.004388	0.000026	0.3134
NET_CT	0.935612	0.905156	0.000072	0.0003
FRI	0.060564	0.008567	0.001146	0.1246
IFC	0.086268	0.142618	0.008512	0.5414
NPL	-0.013363	-0.027954	0.000072	0.0847

Correlated Random Effects - Hausman Test
Equation: Untitled
Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	2.595798	6	0.8576

Period random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
GDP_GAP	-0.006074	-0.013255	0.000114	0.5019
GOV_DEBT_LAG1	0.006232	0.005974	0.000000	0.2799
NET_CT	0.851963	0.849175	0.000008	0.3152
FRI	0.028568	-0.003969	0.000616	0.1897
IFC	0.192319	0.160253	0.000741	0.2389
NPL	-0.034910	-0.036635	0.000002	0.2605

TSLS estimates

Relative to the TSLS estimates, for cross-section effects, the test returns the message "Cross-section test variance is invalid. Hausman statistic set to zero."; such implies that the software cannot distinguish between FE or RE for cross-section effects, an outcome that is possibly due to an insufficient number of observations (which does not allow for an asymptotic validation of the test results). For period effects, it indicates that

the "estimated period random effects variance is zero", attesting that there are no RE in the temporal dimension.

Output of the Hausman test (TSLS estimates)

Correlated Random Effects - Hausman Test
Equation: EQ01_BASELINE
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	6	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
GDP_GAP	-0.065701	-0.098177	0.000105	0.0015
NET_CT	1.058732	1.304140	-0.014917	NA
GOV_DEBT_LAG1	-0.004433	0.004910	0.000067	0.2541
FRI	0.095186	0.033279	0.005145	0.3881
IFC	0.027815	-0.001784	0.015350	0.8112
NPL	-0.012763	-0.032401	0.000086	0.0339

Correlated Random Effects - Hausman Test
Equation: EQ01_BASELINE
Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	0.820095	6	0.9915

** WARNING: estimated period random effects variance is zero.

Period random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
GDP_GAP	0.081137	0.094315	0.009014	0.8896
NET_CT	-0.833896	-1.171688	1.311677	0.7680
GOV_DEBT_LAG1	-0.004941	-0.007167	0.000095	0.8196
FRI	0.270822	0.335355	0.041199	0.7505
IFC	0.146960	0.205804	0.165312	0.8849
NPL	-0.048330	-0.046337	0.000878	0.9464

Appendix 2 – Redundant Two-Way Fixed Effects tests

The redundant two-way fixed effects tests assess the joint significance of cross-section and period FE estimates in OLS specifications. Simply put, they confront a null hypothesis (H_0) under which those effects are redundant, thus recommending their exclusion, against an alternative hypothesis (H_1) where they prove to be non-redundant and, as result, should be kept when estimating the econometric model.

In the *EViews* output, we can observe three different pairs of tests. The first set ("Cross-section F" and "Cross-section Chi-square") tests the performance of a restricted specification where there are only period fixed effects, compared to an unrestricted specification where there are both cross-section and period fixed effects; given the *p*-values, we can reject that cross-section fixed effects are redundant (for a *p*-value of 0.01). The reasoning for the second set ("Period F" and "Period Chi-square") is analogue, with the difference residing now in the use of a restricted specification with cross-section fixed effects only; in this case, we can reject that period fixed effects are redundant (for a *p*-value of 0.05). Finally, the last set ("Cross-section/Period F" and "Cross-section/Period Chi-square") resorts to a restricted specification without any fixed type of fixed effects; considering the previous results, it comes as no surprise that we can reject the redundancy of joint cross-section and period fixed effects (for a *p*-value of 0.01).

Accordingly, the redundant two-way fixed effects tests advise us to estimate our model adopting both cross-section and period fixed effects.

Output of the Redundant Fixed Effect tests

```
Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section and period fixed effects
```

Effects Test	Statistic	d.f.	Prob.
Cross-section F	6.034383	(27,222)	0.0000
Cross-section Chi-square	145.850645	27	0.0000
Period F	2.237323	(9,222)	0.0207
Period Chi-square	23.007771	9	0.0062
Cross-Section/Period F	4.998196	(36,222)	0.0000
Cross-Section/Period Chi-square	157.307479	36	0.0000

Appendix 3 – Endogeneity tests and IVs adequacy

Due to concerns that two independent variables (PRIM_BAL and NET_CT) may be endogenous in relation to the dependent variable (OOM), we followed the method suggested, among others, by Wooldridge (2012). By resorting to an Instrumental Variables' (IVs) estimation, we shall assess whether the endogeneity actually exists and if it is possible to control for that problem.

The procedure requires, in first place, the estimation of reduced form equations, where PRIM_BAL and NET_CT should alternately play as the dependant variable of these auxiliary regressions; on the other hand, the independent variables will now consist of the remaining of the structural (baseline) equation (GDP_GAP, GOV_DEBT_LAG1, FRI, IFC and NPL) plus additional IVs – in this case, we will use the primary budget balance lagged by two periods (PRIM_BAL_LAG2) as an example for the equation featuring PRIM_BAL, and net capital transfers lagged by two periods (NET_CT_LAG2) for the equation with NET_CT. Accordingly, we defined the following reduced form equations:

$$\text{PRIM\_BAL}_{i,t} = \delta_1 + \delta_2 \text{GDP\_GAP}_{i,t} + \delta_3 \text{PRIM\_BAL\_LAG2}_{i,t} + \delta_4 \text{GOV\_DEBT\_LAG1}_{i,t} + \quad (\text{A3.1.1.})$$
$$+ \delta_5 \text{FRI}_{i,t} + \delta_6 \text{IFC}_{i,t} + \delta_7 \text{NPL}_{i,t} + \varepsilon_{i,t}$$

$$\text{NET\_CT}_{i,t} = \gamma_1 + \gamma_2 \text{GDP\_GAP}_{i,t} + \gamma_3 \text{NET\_CT\_LAG2}_{i,t} + \gamma_4 \text{GOV\_DEBT\_LAG1}_{i,t} + \quad (\text{A3.1.2.})$$
$$+ \gamma_5 \text{FRI}_{i,t} + \gamma_6 \text{IFC}_{i,t} + \gamma_7 \text{NPL}_{i,t} + \varepsilon_{i,t}$$

Based on the estimation outputs relative to equations (A3.1.1.) and (A3.1.2.)[41], we can confirm that PRIM_BAL_LAG2 and NET_CT_LAG2 are relevant instruments, as they are significant in the explanation of PRIM_BAL (for a *p*-value of 0.01) and NET_CT

---

[41] Following the conclusions from the Hausman and Redundant Fixed Effects tests, we assume cross-section and period FE in the estimations. We also employ *White diagonal* robust estimators to control for the possibility of cross-section and period heteroscedasticity.

(for a *p*-value of 0.1), respectively.

Estimation outputs of equations (A3.1.1.) and (A3.1.2.)

Dependent Variable: PRIM_BAL
Method: Panel Least Squares
Date: 06/20/20   Time: 11:03
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 265
White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7.256865	2.096450	-3.461502	0.0006
GDP_GAP	0.390501	0.106939	3.651613	0.0003
PRIM_BAL_LAG2	0.223082	0.083121	2.683820	0.0078
GOV_DEBT_LAG1	0.078605	0.025370	3.098307	0.0022
FRI	0.095682	0.199847	0.478776	0.6326
IFC	-0.084374	0.682931	-0.123547	0.9018
NPL	0.055219	0.035271	1.565561	0.1189

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.712436	Mean dependent var	-2.606704
Adjusted R-squared	0.658032	S.D. dependent var	3.587541
S.E. of regression	2.097923	Akaike info criterion	4.467249
Sum squared resid	977.0847	Schwarz criterion	5.048111
Log likelihood	-548.9105	Hannan-Quinn criter.	4.700630
F-statistic	13.09528	Durbin-Watson stat	1.202015
Prob(F-statistic)	0.000000		

Dependent Variable: NET_CT
Method: Panel Least Squares
Date: 06/20/20   Time: 11:09
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 265
White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.742518	1.627618	-1.070594	0.2855
GDP_GAP	0.246613	0.087745	2.810566	0.0054
NET_CT_LAG2	-0.132526	0.080045	-1.655632	0.0992
GOV_DEBT_LAG1	0.019359	0.020403	0.948851	0.3437
FRI	-0.108009	0.127037	-0.850213	0.3961
IFC	0.569948	0.536174	1.062990	0.2889
NPL	-0.003041	0.029182	-0.104224	0.9171

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.312171	Mean dependent var	-0.412882
Adjusted R-squared	0.182041	S.D. dependent var	1.878418
S.E. of regression	1.698862	Akaike info criterion	4.045270
Sum squared resid	640.7215	Schwarz criterion	4.626132
Log likelihood	-492.9983	Hannan-Quinn criter.	4.278652
F-statistic	2.398915	Durbin-Watson stat	1.594530
Prob(F-statistic)	0.000022		

Afterwards, the second step indicated by Wooldridge (2012) consists of obtaining the residuals from the reduced form equations and adding them to the structural (baseline) equations; if those residuals prove to be significant, then we would conclude that the variable is (or, at least, persists to be) endogenous. This reasoning led us to define two additional auxiliary regressions:

$$OOM_{i,t}=\theta_1+\theta_2GDP\_GAP_{i,t}+\theta_3PRIM\_BAL_{i,t}+\theta_4GOV\_DEBT\_LAG1_{i,t}+\theta_5FRI_{i,t}+ \quad (A3.2.1.)$$
$$+\theta_6IFC_{i,t}+\theta_7NPL_{i,t}+\theta_8RESID01_{i,t}+\varepsilon_{i,t}$$

$$OOM_{i,t}=\tau_1+\tau_2GDP\_GAP_{i,t}+\tau_3NET\_CT_{i,t}+\tau_4GOV\_DEBT\_LAG1_{i,t}+\tau_5FRI_{i,t}+ \quad (A3.2.2.)$$
$$+\tau_6IFC_{i,t}+\tau_7NPL_{i,t}+\tau_8RESID02+\varepsilon_{i,t},$$

where RESID01 and RESID02 correspond to the estimated residuals of equations A3.1.1. and A3.1.2., respectively.

Then, we must analyse the *p*-values associated to the *t*-statistics of RESID01 and RESID02. Under the null hypothesis (H_0), the residuals' coefficient is equal to zero, meaning that the variable we suspected to be endogenous is actually exogeneous, but also that the associated IV is as well exogeneous; on the contrary, the alternative hypothesis (H_1) indicates that the residuals' coefficient is different from zero, implying that the variable we suspected to be endogenous is indeed so, and that the associated IV fails to meet the requisite of exogeneity.

Against this background, we can reject H_0 for equation (A3.2.1.), for a *p*-value of 0.01, meaning that PRIM_BAL is endogenous, whereas we cannot reject H_0 for equation (A3.2.2.), which attests that NET_CT is exogeneous with regard to OOM, at least when employing NET_CT_LAG2 as an IV.

Estimation outputs of equations (A3.2.1.) and (A3.2.2.)

Dependent Variable: OOM
Method: Panel Least Squares
Date: 06/20/20   Time: 11:06
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 265
White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.563702	0.976584	-3.649152	0.0003
GDP_GAP	0.242990	0.081385	2.985690	0.0031
PRIM_BAL	-0.167084	0.130145	-1.283832	0.2005
GOV_DEBT_LAG1	0.039285	0.011385	3.450485	0.0007
FRI	0.044052	0.113764	0.387223	0.6990
IFC	0.652005	0.215721	3.022450	0.0028
NPL	-0.003359	0.017987	-0.186737	0.8520
RESID01	0.890620	0.152026	5.858323	0.0000

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.806211	Mean dependent var	-0.320032
Adjusted R-squared	0.768505	S.D. dependent var	1.827181
S.E. of regression	0.879129	Akaike info criterion	2.730738
Sum squared resid	170.8037	Schwarz criterion	3.325108
Log likelihood	-317.8228	Hannan-Quinn criter.	2.969547
F-statistic	21.38170	Durbin-Watson stat	1.675975
Prob(F-statistic)	0.000000		

Dependent Variable: OOM
Method: Panel Least Squares
Date: 06/20/20   Time: 11:09
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 265
White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.109334	0.570625	-0.191604	0.8482
GDP_GAP	-0.095615	0.063989	-1.494238	0.1365
NET_CT	1.068350	0.174833	6.110689	0.0000
GOV_DEBT_LAG1	0.001277	0.008613	0.148264	0.8823
FRI	0.154312	0.075527	2.043138	0.0422
IFC	0.061216	0.173370	0.353096	0.7244
NPL	-0.015496	0.013830	-1.120457	0.2637
RESID02	-0.127313	0.173378	-0.734308	0.4635

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.882497	Mean dependent var	-0.320032
Adjusted R-squared	0.859634	S.D. dependent var	1.827181
S.E. of regression	0.684561	Akaike info criterion	2.230431
Sum squared resid	103.5659	Schwarz criterion	2.824801
Log likelihood	-251.5321	Hannan-Quinn criter.	2.469240
F-statistic	38.60000	Durbin-Watson stat	1.473344
Prob(F-statistic)	0.000000		

As a final note, we would like to reinforce that the primary budget balance lagged by two periods (PRIM_BAL_LAG2) is one of many examples of candidate IVs for PRIM_BAL. For instance, though we do not display that here due to space constraints, we also tested other variables (both separately and jointly) as IVs for PRIM_BAL, namely the primary budget balance lagged by one period (PRIM_BAL_LAG1), the degree of centralization of public revenue (DC_REV), the degree of centralization of public expenditure (DC_EXP) and net capital transfers – current and lagged (NET_CT, NET_CT_LAG1, NET_CT_LAG2). However, just as PRIM_BAL_LAG2, none proved to be simultaneously relevant (that is, significant in the explanation of PRIM_BAL) and exogeneous (the *t*-test concluded for the rejection of the null hypothesis of exogeneity with respect to OOM). We also tested NET_CT_LAG1 as an IV of NET_CT, but it too failed to meet the necessary requisites.

References

Angerer, J., & Hagelstam, K. (2019). Structural budget balances in EU Member States – November 2019. *European Parliament Think Tank*. Retrieved from http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_BRI%282017%29587388 on 27.12.2019.

Baltagi, B. H. (2005). *Econometric Analysis of Panel Data* (3rd ed.). John Wiley & Sons Ltd.

Banco de Portugal. (2015). *Economic Bulletin: October 2015*. Lisbon: Banco de Portugal.

Beetsma, R., & Debrun, X. (2016). Fiscal Councils: Rationale and Effectiveness. *IMF Working Papers, No. 16/86*.

Beetsma, R., Debrun, X., Fang, X., Kim, Y., Lledó, V., Mbaye, S., & Zhang, X. (2019). Independent fiscal councils: Recent trends and performance. *European Journal of Political Economy*, *57*, 53–69. https://doi.org/10.1016/j.ejpoleco.2018.07.004

Bernoth, K., & Wolff, G. B. (2008). Fool the markets? Creative accounting, fiscal transparency and sovereign risk premia. *Scottish Journal of Political Economy*, *55*(4), 465–487. https://doi.org/10.1111/j.1467-9485.2008.00462.x

Besnard, D., & Paul, L. (2004). Les mesures budgétaires exceptionnelles. *Bulletin de la Banque de France, No. 128*.

Bornhorst, F., Dobrescu, G., Fedelino, A., Gottschalk, J., & Nakata, T. (2011). When and How to Adjust Beyond the Business Cycle? A Guide to Structural Fiscal Balances. *IMF Technical Notes and Manuals, No. 11/02*. https://doi.org/10.5089/9781475510201.005

Čihák, M., & Schaeck, K. (2010). How well do aggregate prudential ratios identify banking system problems? *Journal of Financial Stability*, *6*(3), 130–144. https://doi.org/10.1016/j.jfs.2010.03.001

Claeys, G., Darvas, Z., & Leandro, Á. (2016). A Proposal to Revive the European Fiscal Framework. *Bruegel Policy Contribution, No. 2016/07*.

Conselho das Finanças Públicas. (2012). Analysis of the Draft State Budget for 2013. *Report by the Portuguese Public Finance Council, No. 3/2012*.

Conselho das Finanças Públicas. (2013). Analysis of the Draft State Budget for 2014. *Report by the Portuguese Public Finance Council, No. 7/2013.*

Conselho das Finanças Públicas. (2016). Analysis of the Draft State Budget for 2016. *Report by the Portuguese Public Finance Council, No. 2/2016.*

Conselho das Finanças Públicas. (2017). Analysis of the Draft State Budget for 2018. *Report by the Portuguese Public Finance Council, No. 9/2017.*

Conselho das Finanças Públicas. (2018). Analysis of the Draft State Budget for 2019. *Report by the Portuguese Public Finance Council, No. 13/2018.*

Conselho das Finanças Públicas. (2020a). Análise à proposta de Orçamento do Estado para 2020. *Relatório do Conselho das Finanças Públicas, No. 01/2020.*

Conselho das Finanças Públicas. (2020b). Evolução Orçamental das Administrações Públicas em 2019. *Relatório do Conselho das Finanças Públicas, No. 03/2020.*

Dafflon, B., & Rossi, S. (1999). Public accounting fudges towards EMU: A first empirical survey and some public choice considerations. *Public Choice*, *101*, 59–84. https://doi.org/10.1023/A:1018311911605

European Central Bank. (2014). *Monthly Bulletin: September 2014*. Frankfurt: European Central Bank.

European Commission. (2004). *Public finances in EMU 2004*. Luxembourg: Publications Office of the European Union.

European Commission. (2005). Council Regulation (EC) No. 1055/2005 of 27 June 2005 amending Regulation (EC) No. 1466/97 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies.

European Commission. (2006). *Public finances in EMU 2006*. Luxembourg: Publications Office of the European Union.

European Commission. (2015). *Report on public finances in EMU 2015*. Luxembourg: Publications Office of the European Union. https://doi.org/10.2765/455670

European Commission. (2019). *Vade Mecum on the Stability and Growth Pact: 2019 Edition*. Luxembourg: Publications Office of the European Union. https://doi.org/10.2765/724849

Eurostat. (2013). *European System of Accounts: ESA 2010*. Luxembourg: Publications Office of the European Union. https://doi.org/10.2785/16644

French Government. (2014). *Rapport Annexe à la Loi de Programmation des Finances Publiques Pour les Années 2014 à 2019*. Retrieved from https://www.legifrance.gouv.fr/affichLoiPubliee.do?idDocument=JORFDOLE0000 29526142&type=general&legislature=14%E2%80%8E on 13.11.2019.

Galati, G., & Moessner, R. (2013). Macroprudential policy – a literature review. *Journal of Economic Surveys*, *27*(5), 846–878. https://doi.org/10.1111/j.1467-6419.2012.00729.x

Hagemann, R. (2011). How can fiscal councils strengthen fiscal performance? *OECD Journal: Economic Studies*, *2011*(1), 75–98. https://doi.org/10.1787/eco_studies-2011-5kg2d3gx4d5c

Hagemann, R. P. (1999). The Structural Budget Balance: The IMF's Methodology. *IMF Working Papers, No. 1999/95*. https://doi.org/10.5089/9781451851809.001

Hamilton, J. D. (2018). Why You Should Never Use the Hodrick-Prescott Filter. *Review of Economics and Statistics*, *100*(5), 831–843. https://doi.org/10.1162/rest_a_00706

Hsiao, C. (2007). Panel data analysis-advantages and challenges. *Test*, *16*(1), 1–22. https://doi.org/10.1007/s11749-007-0046-x

International Monetary Fund. (2019). *Compilation Guide for Financial Soundness Indicators*. Washington D.C.: International Monetary Fund.

Joumard, I., Minegishi, M., André, C., Nicq, C., & Price, R. W. (2008). Accounting for one-off operations when assessing underlying fiscal positions. *OECD Economics Department Working Papers, No. 642*. http://dx.doi.org/10.1787/236220765316

Koen, V., & van den Noord, P. (2005). Fiscal gimmickry in Europe: one-off measures and creative accounting. *OECD Economics Department Working Papers, No. 417*. https://doi.org/10.1787/237714513517

Kopits, G., & Symansky, S. (1998). Fiscal policy rules. *IMF Occasional Papers, No. 162*.

Laeven, L., & Valencia, F. (2018). Systemic Banking Crises Revisited. *IMF Working Papers, No. 18/206*.

Larch, M., & Turrini, A. (2010). The cyclically adjusted budget balance in EU fiscal policymaking: Love at first sight turned into a mature relationship. *Intereconomics*, *45*(1), 48–60. https://doi.org/10.1007/s10272-010-0324-9

Lo Duca, M., Koban, A., Basten, M., Bengtsson, E., Klaus, B., Kusmierczyk, P., … Peltonen, T. (2017). A new database for financial crises in European countries: ECB/ESRB EU crises database. *European Central Bank Occasional Paper Series, No. 194*. https://doi.org/10.2866/902385

Marčanová, M., & Ódor, Ľ. (2014). The "True" Deficit: Improving structural budget balance estimation for Slovakia. *Council for Budget Responsability Working Paper, No. 03/2014*.

Marinheiro, C. (2015). *Classification of one-off budgetary items*. Presented at the 7th Meeting of OECD Parliamentary Budget Officials and Independent Fiscal Institutions. Retrieved from https://www.parlament.gv.at/ZUSD/BUDGET/Classification_of_one-off_budgetary_items_xCarlos_Marinheirox.pdf on 29.10.2017.

Milesi-Ferretti, G. M. (2004). Good, bad or ugly? On the effects of fiscal rules with creative accounting. *Journal of Public Economics*, *88*(1–2), 377–394. https://doi.org/10.1016/S0047-2727(02)00076-2

Mourre, G., Astarita, C., & Princen, S. (2014). Adjusting the budget balance for the business cycle: The EU methodology. *European Economy Economic Papers, No. 536*. https://doi.org/10.2765/71756

Mourre, G., Isbasoiu, G.-M., Paternoster, D., & Salto, M. (2013). The cyclically-adjusted budget balance used in the EU fiscal framework: An update. *European Economy Economic Papers, No. 478*. https://doi.org/10.2765/3922

Panizza, U. (1999). On the determinants of fiscal centralization: Theory and evidence. *Journal of Public Economics*, *74*(1), 97–139. https://doi.org/10.1016/S0047-2727(99)00020-1

Reuter, W. H. (2019). When and why do countries break their national fiscal rules? *European Journal of Political Economy*, *57*, 125–141. https://doi.org/10.1016/j.ejpoleco.2018.08.010

Unidade Técnica de Apoio Orçamental. (2016a). Análise à Proposta de Lei do Orçamento do Estado para 2016 (versão final). *Parecer Técnico UTAO, No. 3/2016*.

Unidade Técnica de Apoio Orçamental. (2016b). Análise à Proposta de Lei do Orçamento do Estado para 2017 (versão final). *Parecer Técnico UTAO, No. 5/2016*.

Unidade Técnica de Apoio Orçamental. (2018). Apreciação final da Proposta de Orçamento do Estado para 2019. *Relatório UTAO, No. 33/2018*.

Verbeek, M. (2004). *A Guide to Modern Econometrics* (2nd ed.). John Wiley & Sons Ltd.

von Hagen, J., Hallett, A. H., & Strauch, R. (2002). Budgetary institutions for sustainable public finances. In M. Buti, J. von Hagen, C. M. Mongay, & C. Martinez Mongay (Eds.), *The Behaviour of Fiscal Authorities: Stabilization, Growth and Institutions* (pp.94-112). Palgrave Macmillan UK.

von Hagen, J., & Wolff, G. B. (2006). What do deficits tell us about debt? Empirical evidence on creative accounting with fiscal rules in the EU. *Journal of Banking and Finance*, *30*(12), 3259–3279. https://doi.org/10.1016/j.jbankfin.2006.05.011

Wooldridge, J. M. (2012). *Introductory Econometrics: A Modern Approach* (5th ed.). South-Western, Cengage Learning.

Annexes

Annex 1 – Yearly comparison of EC one-off measures' figures with the deviation of net capital transfers from trend, and with OECD one-off measures' figures

Difference between the EC figures for one-off measures and the estimates of deviations of net capital transfers from trend (in percentage of GDP), 2010-2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Austria	-0.6	-0.5	-0.4	-0.5	-0.2	-0.2	-0.4	-0.1	-0.3	-0.2
Belgium	0.0	0.4	0.5	0.9	0.3	-0.2	-0.4	0.1	0.3	0.1
Bulgaria	-0.9	-0.6	-0.6	-1.3	-1.5	-2.9	1.2	0.5	0.4	0.5
Croatia	0.7	1.1	-0.5	-0.5	0.3	-0.2	0.0	-0.3	0.2	0.0
Cyprus	-0.2	-1.1	-0.7	-0.2	-0.8	-1.3	-1.6	-2.2	-6.8	-2.2
Czech Republic	-0.7	-0.6	0.1	-0.2	-0.1	-0.9	0.3	0.4	0.3	0.4
Denmark	-0.2	0.0	-0.4	1.6	3.7	2.1	-0.2	-0.4	-0.1	-0.4
Estonia	2.9	1.2	-1.6	-0.7	0.0	-0.3	0.5	0.1	-0.2	0.4
Finland	0.0	0.0	0.0	-0.1	0.2	0.2	0.2	-0.1	-0.1	0.1
France	0.0	0.2	0.2	0.2	0.0	0.0	0.0	0.3	-0.3	-1.2
Germany	0.0	-0.2	-0.3	-0.2	-0.4	-0.2	-0.1	0.0	-0.1	0.1
Greece	-0.4	-0.4	-0.7	-0.7	-2.1	-2.3	-1.0	-0.6	-0.8	0.6
Hungary	-0.3	0.1	0.0	-1.1	-1.3	-1.2	2.0	1.7	0.4	0.1
Ireland	-1.8	-2.1	-1.9	-1.6	-1.9	-1.5	-1.3	-1.0	-0.8	-0.5
Italy	0.1	-0.1	0.2	-0.1	0.5	0.1	-0.1	0.3	0.2	0.1
Latvia	-0.7	0.8	-0.9	-0.5	-1.1	-0.5	0.4	0.7	-0.1	0.3
Lithuania	-1.5	-0.8	-0.8	-0.4	-0.1	-0.1	0.7	0.7	0.5	0.2
Luxembourg	0.2	0.0	0.1	-0.1	-0.2	0.0	-0.1	0.0	0.1	0.0
Malta	1.4	0.1	-0.1	0.1	-0.4	-1.1	0.6	0.4	0.6	-0.1
Netherlands	0.3	0.1	0.1	0.8	0.0	0.0	0.4	0.3	0.0	0.1
Poland	-0.6	-0.8	-0.3	0.0	-0.3	-0.2	0.4	0.6	-0.2	0.0
Portugal	-2.2	-0.5	-1.1	-0.3	-1.2	-0.9	-0.7	-0.9	-1.1	-1.1
Romania	-0.6	-0.3	0.3	-0.3	-0.7	-1.1	0.1	-0.1	0.4	0.3
Slovakia	-0.6	-0.1	-0.2	-0.5	0.0	-1.1	0.4	0.7	0.5	0.8
Slovenia	-0.8	-0.8	-1.1	-1.5	-1.4	-1.5	-0.7	-0.5	-0.7	-0.7
Spain	-0.3	-0.2	0.1	-0.7	-0.8	-1.0	-0.3	-0.3	-0.4	-0.3
Sweden	0.0	0.1	-0.2	-0.2	0.0	0.0	0.1	0.0	0.0	0.0
United Kingdom	0.2	-0.1	0.5	-0.2	-0.3	0.0	-0.1	0.0	0.0	0.0
EU28	-0.3	-0.2	-0.4	-0.3	-0.4	-0.6	0.0	0.0	-0.3	-0.1
EU22	-0.3	-0.2	-0.3	-0.3	-0.3	-0.4	0.0	0.1	-0.1	-0.1

Difference between the EC and the OECD figures for one-off measures (in percentage of GDP), 2010-2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Austria	0.2	0.2	0.1	-0.5	0.0	0.4	0.5	0.1	0.3	0.2
Belgium	0.3	0.3	0.3	-0.2	0.3	0.6	0.4	-0.1	-0.5	0.1
Bulgaria	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Croatia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyprus	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Czech Republic	0.4	0.2	1.4	-0.1	-0.2	1.1	-0.4	-0.4	-0.3	-0.4
Denmark	0.2	0.2	0.2	-1.5	-3.2	-1.5	0.3	0.6	0.3	0.4
Estonia	-3.2	-1.6	1.6	0.4	0.3	0.5	-0.3	0.3	0.3	-0.4
Finland	0.0	0.0	0.0	-0.1	0.0	0.0	-0.1	0.1	0.0	0.0
France	-0.1	-0.1	-0.2	0.0	-0.1	-0.2	0.1	-0.4	0.5	1.3
Germany	-0.2	0.0	0.0	0.0	0.1	0.0	0.1	-0.3	0.1	-0.1
Greece	0.2	0.2	-0.2	-0.7	0.8	2.9	1.4	0.6	0.2	0.4
Hungary	0.9	0.9	0.8	1.3	0.8	0.8	-2.7	-1.3	-0.4	-0.3
Ireland	1.1	1.9	1.9	1.3	1.5	1.4	1.3	1.1	0.8	0.5
Italy	0.1	0.0	0.1	0.2	0.1	0.1	0.4	-0.3	-0.1	0.0
Latvia	0.3	-0.6	0.4	0.3	0.8	0.5	-0.2	-0.8	0.1	-0.1
Lithuania	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Luxembourg	-0.1	-0.1	-0.1	0.2	0.1	0.2	0.1	0.0	-0.1	0.0
Malta	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Netherlands	0.0	-0.2	-0.2	-0.8	-0.3	-0.5	-0.1	0.2	0.0	0.0
Poland	0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-1.0	-0.6	0.2	-0.1
Portugal	1.8	0.4	-0.4	-0.2	0.2	0.4	1.1	0.8	0.4	0.5
Romania	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slovakia	0.1	-0.3	-0.2	-0.3	-0.7	0.6	-1.0	-1.0	-0.5	-0.8
Slovenia	0.2	0.4	0.4	0.0	-0.2	1.4	0.6	0.5	0.6	0.7
Spain	0.9	0.7	0.1	0.5	0.2	0.6	0.3	0.3	0.1	0.1
Sweden	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	0.0	-0.1	0.0
United Kingdom	-0.5	-0.6	-0.7	-1.6	0.2	0.0	0.1	0.0	0.0	0.0
EU22	0.1	0.1	0.2	-0.1	0.0	0.4	0.0	0.0	0.1	0.1

Annex 2 – Description of the variables used in the econometric study

Variable	Description	Source
OOM	Officially reported net one-off measures' figures, in % of GDP.	AMECO Database[a]
GDP_GAP	Gap between actual and potential gross domestic product, in % of GDP.	AMECO Database
PRIM_BAL	Total general government revenue net of total general government expenditure, in % of GDP.	AMECO Database
PRIM_BAL_LAG1	PRIM_BAL lagged by one year.	AMECO Database
PRIM_BAL_LAG2	PRIM_BAL lagged by two years.	AMECO Database
DC_REV	Ratio (%) of total central government revenue over total general government revenue.	Own calculation based on Eurostat[b]
DC_EXP	Ratio (%) of total central government expenditure over total general government expenditure.	Own calculation based on Eurostat
GOV_DEBT_LAG1	Total gross debt outstanding at the end of year t-1, in % of GDP.	AMECO Database
NET_CT	Capital transfers received by general government (D9r) net of capital transfers paid by general government (D9p), in % of GDP.	Own calculation based on AMECO Database
NET_CT_LAG1	NET_CT lagged by one year.	Own calculation based on AMECO Database
NET_CT_LAG2	NET_CT lagged by two years.	Own calculation based on AMECO Database
FRI	*Fiscal Rules Index*, expressed as a number with six decimal places (in the sample, the values range from -0.965441 to 3.245683).	EC[c]
IFC	Dummy variable that assumes the value "1" if the country had at least one independent fiscal council in year t and "0" otherwise.	IMF[d]
NPL	Ratio (%) of banks' non-performing loans over total loans.	IMF[e]
CPI	*Corruption Perception Index*, expressed as an integer between 0 and 100 (where 100 corresponds to the minimum level of perceived corruption).	Transparency International[f]
ELECTION	Dummy variable that assumes the value "1" if parliamentary elections took place in year t and "0" otherwise.	Comparative Political Dataset[g]; Parties and Elections in Europe[h]

Variable	Description	Source
GOV_PARTY	Cabinet composition, expressed as an integer between 1 and 5. Underlying the values is a Schmidt Index that is calculated according to the following criteria: (1) hegemony of right-wing (and centre parties (gov_left1=0); (2) dominance of right-wing (and centre) parties (0<gov_left1<=33.33); (3) balance of power between left and right (33.33<gov_left1<66.67); (4) dominance of social-democratic and other left parties (66.67<=gov_left1<100); (5) hegemony of social-democratic and other left parties (gov_left=100).	Comparative Political Dataset
BANK_CRISIS	Dummy variable that assumes the value "1" if a systemic banking crisis occurred in year t and "0" otherwise.	Laeven and Valencia (2018)
FIN_CRISIS	Dummy variable that assumes the value "1" if a financial crisis occurred in year t and "0" otherwise.	Lo Duca et al. (2017)
DEV_NET_CT	Difference between net capital transfers and their trend level. The latter was estimated with an Hodrick-Prescott filter that uses a *lambda* smoothing parameter set to 400.	Own calculation based on AMECO Database
DEV_NET_CT _LAG2	DEV_NET_CT lagged by two years.	Own calculation based on AMECO Database
GOV_DEBT_EXC _LAG1	Dummy variable that assumes the value "1" if GOV_DEBT_LAG1 is higher than 100% of GDP and "0" otherwise.	Own calculation based on AMECO Database
EMU	Dummy variable that assumes the value "1" if the country was an EMU member in year t and "0" otherwise.	EU[i]
ROE	Ratio (%) of banks' returns (profits) over equity.	IMF[e]
C_RWA	Ratio (%) of banks' capital over risk-weighted assets.	IMF[e]

Notes: Each of the following sources was last accessed on 19 June 2020. [a] AMECO Database (https://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm); [b] Eurostat (https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=gov_10a_main&lang=en) [c] European Commission: Fiscal Rules Database (https://ec.europa.eu/info/publications/fiscal-rules-database_en); [d] International Monetary Fund: Fiscal Council Dataset (https://www.imf.org/external/np/fad/council/); [e] International Monetary Fund: Financial Soundness Indicators (https://data.imf.org/?sk=51B096FA-2CD2-40C2-8D09-0699CC1764DA&sId=1390030341854); [f] Transparency International (https://www.transparency.org/en/cpi); [g] Comparative Political Dataset (https://www.cpds-data.org/index.php/data); [h] Parties and Elections in Europe (http://www.parties-and-elections.eu/countries.html); [i] European Union (https://europa.eu/european-union/about-eu/euro/which-countries-use-euro_en).

	Obs.	Mean	Std. Dev.	Maximum	Minimum
OOM	280	-0.31	1.78	3.13	-21.10
				(Denmark, 2014)	(Ireland, 2010)
GDP_GAP	280	-0.98	3.26	5.91	-15.84
				(Cyprus, 2019)	(Greece, 2013)
PRIM_BAL	280	-2.51	3.54	3.66	-32.06
				(Denmark, 2019)	(Ireland, 2010)
PRIM_BAL_LAG1	280	-3.13	3.74	3.34	-32.06
				(Malta, 2018)	(Ireland, 2011)
PRIM_BAL_LAG2	280	-3.32	3.74	4.18	-32.06
				(Finland, 2010)	(Ireland, 2012)
DC_REV	279	0.65	0.16	1.00	0.28
				(Malta, 2016)	(Germany, 2019)
DC_EXP	279	0.67	0.16	1.00	0.28
				(Malta, 2017)	(Germany, 2019)
GOV_DEBT_LAG1	280	67.37	36.06	181.21	6.11
				(Greece, 2019)	(Estonia, 2012)
NET_CT	280	-0.40	1.83	3.25	-21.72
				(Bulgaria, 2015)	(Ireland, 2010)
NET_CT_LAG1	280	-0.43	1.83	3.25	-21.72
				(Bulgaria, 2016)	(Ireland, 2011)
NET_CT_LAG2	280	-0.44	1.83	3.25	-21.72
				(Bulgaria, 2017)	(Ireland, 2012)
FRI	280	0.88	1.06	3.25	-0.97
				(Netherlands, 2016)	(Czech Republic, 2010)
IFC	280	0.59	0.49	1.00	0.00
NPL	265	8.20	8.67	47.75	0.15
				(Cyprus, 2015)	(Luxembourg, 2012)
CPI	280	63.84	15.61	94.00	33.29
				(Denmark, 2011)	(Bulgaria, 2011)
ELECTION	280	0.28	0.45	1.00	0.00
GOV_PARTY	222	2.45	1.30	5.00	1.00
BANK_CRISIS	280	0.13	0.33	1.00	0.00
FIN_CRISIS	224	0.30	0.46	1.00	0.00
DEV_NET_CT	280	-0.07	1.60	2.87	-19.27
				(Bulgaria, 2015)	(Ireland, 2010)
DEV_NET_CT_LAG2	280	-0.06	1.61	2.87	-19.27
				(Bulgaria, 2017)	(Ireland, 2012)
GOV_DEBT_EXC_LAG1	280	0.17	0.38	1.00	0.00
EMU	280	0.64	0.48	1.00	0.00
ROE	268	5.76	12.62	33.33	-97.62
				(Estonia, 2011)	(Slovenia, 2013)
C_RWA	271	17.85	3.89	35.65	7.34
				(Estonia, 2014)	(Cyprus, 2012)

Annex 3 – Correlation matrix of the variables used in the econometric study

	oom	gdp_gap	prim_bal	prim_bal_lag1	prim_bal_lag2	dc_rev	dc_exp	gov_debt_lag1	gov_debt_exc_lag1	fin_crisis	bank_crisis	roe	...
oom	1.00	0.19	0.63	0.26	0.16	-0.09	-0.13	-0.11	-0.07	-0.27	-0.20	0.42	
gdp_gap		1.00	0.50	0.52	0.47	0.02	-0.01	-0.33	-0.27	-0.46	-0.36	0.45	
prim_bal			1.00	0.79	0.60	-0.04	-0.09	-0.24	-0.13	-0.44	-0.45	0.49	
prim_bal_lag1				1.00	0.71	-0.67	-0.09	-0.06	-0.09	-0.39	-0.30	-0.30	
prim_bal_lag2					1.00	-0.10	-0.12	-0.41	-0.31	-0.30	-0.34	0.36	
dc_rev						1.00	0.99	-0.08	0.06	-0.01	0.05	-0.03	
dc_exp							1.00	-0.06	0.08	0.02	0.07	-0.08	
gov_debt_lag1								1.00	0.75	0.36	0.10	-0.28	
gov_debt_exc_lag1									1.00	0.31	0.14	-0.22	
fin_crisis										1.00	0.51	-0.47	
bank_crisis											1.00	-0.39	
roe												1.00	
...													

	...	npl	c_rwa	net_ct	net_ct_lag1	net_ct_lag2	dev_net_ct	dev_net_ct_lag2	emu	fri	ifc	cpi	election	gov_party
oom		-0.24	0.15	0.87	0.16	0.00	0.88	-0.09	-0.12	0.13	0.12	0.04	0.04	0.03
gdp_gap		-0.54	0.45	0.19	0.13	0.10	0.16	0.08	-0.02	0.41	0.13	0.20	-0.02	-0.05
prim_bal		-0.23	0.49	0.60	0.22	0.13	0.56	0.05	-0.03	0.50	0.20	0.19	-0.02	0.02
prim_bal_lag1		-0.20	-0.44	-0.47	0.56	-0.31	0.45	0.24	0.56	0.20	0.15	0.52	0.11	-0.02
prim_bal_lag2		-0.39	0.34	0.15	0.23	0.55	0.05	0.51	-0.02	0.41	0.09	0.26	-0.01	0.04
dc_rev		0.23	0.19	-0.04	-0.04	-0.04	-0.03	-0.04	-0.15	-0.09	-0.07	-0.12	-0.01	-0.04
dc_exp		0.26	0.14	-0.07	-0.05	-0.04	-0.06	-0.03	-0.13	-0.11	-0.09	-0.15	-0.02	-0.03
gov_debt_lag1		0.50	-0.34	-0.17	-0.23	-0.26	0.01	-0.11	0.37	-0.06	0.29	-0.15	0.00	0.04
gov_debt_exc_lag1		0.52	-0.22	-0.11	-0.14	-0.23	0.03	-0.13	0.34	0.07	0.17	-0.19	-0.03	-0.04
fin_crisis		0.30	-0.37	-0.33	-0.34	-0.24	-0.19	-0.12	0.25	-0.35	-0.02	0.03	0.08	0.07
bank_crisis		0.18	-0.33	-0.24	-0.23	-0.14	-0.15	-0.06	0.13	-0.43	-0.15	-0.03	0.02	0.13
roe		-0.45	0.34	0.42	0.18	0.19	0.31	0.07	-0.14	0.27	0.12	0.11	-0.01	-0.12
npl		1.00	-0.25	-0.15	-0.18	-0.20	-0.05	-0.12	0.04	-0.12	-0.22	-0.49	-0.02	-0.01
c_rwa			1.00	0.11	0.04	0.03	0.09	0.01	-0.08	0.40	0.29	0.25	-0.01	0.00

	...	npl	c_rwa	net_ct	net_ct _lag1	net_ct _lag2	dev_net _ct	dev_net _ct_lag2	emu	fri	ifc	cpi	election	gov _party
net_ct				1.00	0.27	0.11	0.92	-0.07	-0.12	0.15	0.02	-0.14	0.04	0.03
net_ct_lag1					1.00	0.27	0.08	0.10	-0.12	0.18	-0.05	-0.13	-0.09	0.05
net_ct_lag2						1.00	-0.10	0.93	-0.11	0.16	-0.06	-0.12	0.03	0.02
dev_net_ct							1.00	-0.14	-0.04	0.08	0.06	-0.04	0.04	0.02
dev_net_ct_lag2								1.00	-0.05	0.08	-0.03	-0.04	0.04	0.01
emu									1.00	0.10	0.27	0.19	-0.04	0.21
fri										1.00	0.36	0.11	-0.04	0.13
ifc											1.00	0.45	0.01	0.02
cpi												1.00	0.00	-0.06
election													1.00	0.01
gov_party														1.00

Note: The variables are not typed in capital letters due to layout constraints.

Specification 1 (baseline equation)

Dependent Variable: OOM
Method: Panel Two-Stage Least Squares
Date: 06/26/20   Time: 15:20
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 265
White diagonal standard errors & covariance (d.f. corrected)
Instrument specification: C GDP_GAP NET_CT_LAG2
    GOV_DEBT_LAG1 FRI IFC NPL

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.109334	0.562740	-0.194289	0.8461
GDP_GAP	-0.095615	0.062883	-1.520531	0.1298
NET_CT	1.068350	0.177499	6.018897	0.0000
GOV_DEBT_LAG1	0.001277	0.008375	0.152466	0.8790
FRI	0.154312	0.077044	2.002915	0.0464
IFC	0.061216	0.175968	0.347884	0.7283
NPL	-0.015496	0.014001	-1.106819	0.2696

Effects Specification				

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.870714	Mean dependent var		-0.320032
Adjusted R-squared	0.846255	S.D. dependent var		1.827181
S.E. of regression	0.716445	Sum squared resid		113.9510
F-statistic	1.657743	Durbin-Watson stat		1.460059
Prob(F-statistic)	0.010891	Second-Stage SSR		670.9577
Instrument rank	43			

Specification 2

Dependent Variable: OOM
Method: Panel Two-Stage Least Squares
Date: 07/05/20   Time: 15:52
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 265
White diagonal standard errors & covariance (d.f. corrected)
Instrument specification: C GDP_GAP NET_CT_LAG2
    GOV_DEBT_LAG1 FRI IFC NPL CPI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.916052	1.107044	-0.827476	0.4089
GDP_GAP	-0.103543	0.069681	-1.485956	0.1387
NET_CT	1.091892	0.208100	5.246966	0.0000
GOV_DEBT_LAG1	0.001227	0.008482	0.144688	0.8851
FRI	0.156718	0.079243	1.977684	0.0492
IFC	0.021416	0.195730	0.109415	0.9130
NPL	-0.016180	0.013934	-1.161242	0.2468
CPI	0.013239	0.020999	0.630452	0.5290

Effects Specification				

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.866403	Mean dependent var		-0.320032
Adjusted R-squared	0.840409	S.D. dependent var		1.827181
S.E. of regression	0.729938	Sum squared resid		117.7509
F-statistic	1.658786	Durbin-Watson stat		1.466708
Prob(F-statistic)	0.010285	Second-Stage SSR		666.3301
Instrument rank	44			

Specification 3

Dependent Variable: OOM
Method: Panel Two-Stage Least Squares
Date: 07/05/20   Time: 15:53
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 265
White diagonal standard errors & covariance (d.f. corrected)
Instrument specification: C GDP_GAP NET_CT_LAG2
    GOV_DEBT_LAG1 FRI IFC NPL ELECTION

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.110838	0.566386	-0.195693	0.8450
GDP_GAP	-0.095755	0.062866	-1.523155	0.1291
NET_CT	1.069927	0.176325	6.067915	0.0000
GOV_DEBT_LAG1	0.001229	0.008367	0.146903	0.8833
FRI	0.154718	0.076790	2.014812	0.0451
IFC	0.060605	0.175676	0.344981	0.7304
NPL	-0.015491	0.014059	-1.101852	0.2717
ELECTION	0.018712	0.088635	0.211115	0.8330

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.870441	Mean dependent var		-0.320032
Adjusted R-squared	0.845233	S.D. dependent var		1.827181
S.E. of regression	0.718822	Sum squared resid		114.1918
F-statistic	1.630523	Durbin-Watson stat		1.459719
Prob(F-statistic)	0.012707	Second-Stage SSR		669.1117
Instrument rank	44			

Specification 4

Dependent Variable: OOM
Method: Panel Two-Stage Least Squares
Date: 07/05/20   Time: 15:54
Sample (adjusted): 2010 2017
Periods included: 8
Cross-sections included: 28
Total panel (unbalanced) observations: 216
White diagonal standard errors & covariance (d.f. corrected)
Instrument specification: C GDP_GAP NET_CT_LAG2
    GOV_DEBT_LAG1 FRI IFC NPL GOV_PARTY

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.719429	0.725246	-0.991979	0.3226
GDP_GAP	-0.084214	0.062827	-1.340413	0.1819
NET_CT	0.968806	0.138361	7.002000	0.0000
GOV_DEBT_LAG1	0.009829	0.009766	1.006458	0.3156
FRI	0.148271	0.088062	1.683707	0.0940
IFC	0.018089	0.188451	0.095990	0.9236
NPL	-0.031448	0.014371	-2.188314	0.0300
GOV_PARTY	0.065298	0.049363	1.322834	0.1876

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.913459	Mean dependent var		-0.346554
Adjusted R-squared	0.893068	S.D. dependent var		1.945697
S.E. of regression	0.636253	Sum squared resid		70.43826
F-statistic	1.722989	Durbin-Watson stat		1.437311
Prob(F-statistic)	0.008633	Second-Stage SSR		578.9033
Instrument rank	42			

Specification 5

```
Dependent Variable: OOM
Method: Panel Two-Stage Least Squares
Date: 07/05/20   Time: 15:55
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 265
White diagonal standard errors & covariance (d.f. corrected)
Instrument specification: C GDP_GAP NET_CT_LAG2
        GOV_DEBT_LAG1 FRI IFC NPL BANK_CRISIS
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.328820	0.509689	-0.645139	0.5195
GDP_GAP	-0.079236	0.059255	-1.337205	0.1825
NET_CT	1.049305	0.162599	6.453326	0.0000
GOV_DEBT_LAG1	0.003868	0.007730	0.500440	0.6173
FRI	0.149087	0.078120	1.908431	0.0576
IFC	0.080034	0.174545	0.458528	0.6470
NPL	-0.015328	0.013869	-1.105213	0.2703
BANK_CRISIS	0.328922	0.212665	1.546670	0.1234

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.875656	Mean dependent var	-0.320032
Adjusted R-squared	0.851463	S.D. dependent var	1.827181
S.E. of regression	0.704205	Sum squared resid	109.5949
F-statistic	1.615487	Durbin-Watson stat	1.482618
Prob(F-statistic)	0.014204	Second-Stage SSR	670.6011
Instrument rank	44		

Specification 6

```
Dependent Variable: OOM
Method: Panel Two-Stage Least Squares
Date: 07/05/20   Time: 15:56
Sample (adjusted): 2010 2017
Periods included: 8
Cross-sections included: 28
Total panel (unbalanced) observations: 218
White diagonal standard errors & covariance (d.f. corrected)
Instrument specification: C GDP_GAP NET_CT_LAG2
        GOV_DEBT_LAG1 FRI IFC NPL FIN_CRISIS
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.276271	0.595594	-0.463858	0.6433
GDP_GAP	-0.090494	0.061133	-1.480278	0.1406
NET_CT	0.996607	0.132681	7.511281	0.0000
GOV_DEBT_LAG1	0.005593	0.008638	0.647536	0.5181
FRI	0.154883	0.085222	1.817413	0.0709
IFC	0.011424	0.187102	0.061056	0.9514
NPL	-0.032006	0.014922	-2.144832	0.0333
FIN_CRISIS	0.041882	0.170780	0.245238	0.8066

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.910179	Mean dependent var	-0.344528
Adjusted R-squared	0.889254	S.D. dependent var	1.936975
S.E. of regression	0.644596	Sum squared resid	73.12871
F-statistic	1.770294	Durbin-Watson stat	1.431459
Prob(F-statistic)	0.006089	Second-Stage SSR	576.4356
Instrument rank	42		

Specification 7

```
Dependent Variable: OOM
Method: Panel Two-Stage Least Squares
Date: 07/05/20   Time: 15:58
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 265
White diagonal standard errors & covariance (d.f. corrected)
Instrument specification: C GDP_GAP DEV_NET_CT_LAG2
      GOV_DEBT_LAG1 FRI IFC NPL
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.052591	0.590130	-0.089118	0.9291
GDP_GAP	-0.091198	0.067113	-1.358875	0.1756
DEV_NET_CT	1.030680	0.168539	6.115392	0.0000
GOV_DEBT_LAG1	-0.004198	0.009690	-0.433167	0.6653
FRI	0.124072	0.076926	1.612868	0.1082
IFC	0.191546	0.164664	1.163250	0.2460
NPL	-0.026505	0.015154	-1.749074	0.0817

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.870152	Mean dependent var	-0.320032
Adjusted R-squared	0.845586	S.D. dependent var	1.827181
S.E. of regression	0.718001	Sum squared resid	114.4466
F-statistic	1.682513	Durbin-Watson stat	1.419176
Prob(F-statistic)	0.009052	Second-Stage SSR	668.5726
Instrument rank	43		

Specification 8

```
Dependent Variable: OOM
Method: Panel Two-Stage Least Squares
Date: 07/05/20   Time: 16:00
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 265
White diagonal standard errors & covariance (d.f. corrected)
Instrument specification: C GDP_GAP NET_CT_LAG2
      GOV_DEBT_EXC_LAG1 FRI IFC NPL
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.121265	0.187757	-0.645862	0.5190
GDP_GAP	-0.085790	0.054810	-1.565238	0.1190
NET_CT	0.965779	0.134028	7.205796	0.0000
GOV_DEBT_EXC_LAG1	0.868172	0.468133	1.854540	0.0650
FRI	0.117396	0.079635	1.474179	0.1419
IFC	0.110196	0.172638	0.638307	0.5239
NPL	-0.025723	0.014630	-1.758295	0.0801

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.886703	Mean dependent var	-0.320032
Adjusted R-squared	0.865269	S.D. dependent var	1.827181
S.E. of regression	0.670680	Sum squared resid	99.85822
F-statistic	1.671855	Durbin-Watson stat	1.388584
Prob(F-statistic)	0.009804	Second-Stage SSR	669.5968
Instrument rank	43		

Specification 9

Dependent Variable: OOM
Method: Panel Two-Stage Least Squares
Date: 07/05/20   Time: 16:05
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 265
White diagonal standard errors & covariance (d.f. corrected)
Instrument specification: C GDP_GAP NET_CT_LAG2
    GOV_DEBT_LAG1 EMU IFC NPL

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.176573	0.458066	-0.385474	0.7003
GDP_GAP	-0.090697	0.067052	-1.352628	0.1776
NET_CT	1.043207	0.167892	6.213577	0.0000
GOV_DEBT_LAG1	0.002158	0.007465	0.289029	0.7728
EMU	0.129320	0.603660	0.214227	0.8306
IFC	0.132629	0.188883	0.702174	0.4833
NPL	-0.014249	0.013792	-1.033141	0.3027

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.873276	Mean dependent var	-0.320032
Adjusted R-squared	0.849302	S.D. dependent var	1.827181
S.E. of regression	0.709309	Sum squared resid	111.6926
F-statistic	1.809706	Durbin-Watson stat	1.454830
Prob(F-statistic)	0.003393	Second-Stage SSR	656.5878
Instrument rank	43		

Specification 10

Dependent Variable: OOM
Method: Panel Two-Stage Least Squares
Date: 07/05/20   Time: 16:06
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 268
White diagonal standard errors & covariance (d.f. corrected)
Instrument specification: C GDP_GAP NET_CT_LAG2
    GOV_DEBT_LAG1 FRI IFC ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.066043	0.447581	-0.147556	0.8828
GDP_GAP	-0.068304	0.043668	-1.564180	0.1192
NET_CT	1.044716	0.173479	6.022155	0.0000
GOV_DEBT_LAG1	-0.000738	0.005714	-0.129149	0.8974
FRI	0.149874	0.085016	1.762887	0.0793
IFC	0.085700	0.186093	0.460523	0.6456
ROE	-0.002086	0.011864	-0.175816	0.8606

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.862703	Mean dependent var	-0.278700
Adjusted R-squared	0.837075	S.D. dependent var	1.741727
S.E. of regression	0.703031	Sum squared resid	111.2067
F-statistic	2.425358	Durbin-Watson stat	1.427534
Prob(F-statistic)	0.000017	Second-Stage SSR	557.5524
Instrument rank	43		

Specification 11

Dependent Variable: OOM
Method: Panel Two-Stage Least Squares
Date: 07/05/20   Time: 16:07
Sample: 2010 2019
Periods included: 10
Cross-sections included: 28
Total panel (unbalanced) observations: 271
White diagonal standard errors & covariance (d.f. corrected)
Instrument specification: C GDP_GAP NET_CT_LAG2
      GOV_DEBT_LAG1 FRI IFC C_RWA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.084216	0.871314	0.096655	0.9231
GDP_GAP	-0.072723	0.059419	-1.223901	0.2223
NET_CT	1.047342	0.166695	6.283005	0.0000
GOV_DEBT_LAG1	-0.001511	0.007627	-0.198147	0.8431
FRI	0.142101	0.073433	1.935100	0.0542
IFC	0.096253	0.151365	0.635902	0.5255
C_RWA	-0.006699	0.025646	-0.261189	0.7942

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.873294	Mean dependent var	-0.315492
Adjusted R-squared	0.849954	S.D. dependent var	1.806663
S.E. of regression	0.699825	Sum squared resid	111.6642
F-statistic	1.782859	Durbin-Watson stat	1.449756
Prob(F-statistic)	0.004093	Second-Stage SSR	663.4102
Instrument rank	43		