AppendixDescription.docx

The document presents a detailed description of the exogenous consolidation measures adopted in different years country by country. For each year we present a brief motivation underlying the decision to ascribe the measures undertaken to the exogenous consolidation-driven measures, having as a guideline the reasoning that those measures are usually presented as plans for long-term deficit reduction and do not reflect short term countercyclical actions. We were guided by the previous work of Devries et al. (2011), making use of their classification motivations, while stressing the differences between their and our decisions when such are present. A major difference with respect to Devries et al. (2011) is that we group the measures by the years in which they were introduced instead of grouping by the year of effective implementation as done in the aforementioned paper.

For each country we include an ***Important remarks***and a ***Final Notes***sections which complement the description of the appendix, as well as ***Notes*** related to yearly measure description.

In ***Important remarks***one will find the sources used in the dataset construction, clarifications of measure assignment together with several remarks on fiscal year dating conventions (for cases when the fiscal and calendar year differ) and additional comments related to dataset construction.

In ***Final Notes*** one will find the motivation behind the decision to not include in our database several years when the fiscal consolidation was undertaken (endogenous, short term oriented). Several motivations, being agreed with, are taken from Devries et al. (2011).

In ***Notes*** related to yearly entries, one will find motivations underlying dubious classification issues, such as, for example, when a measure description in the original document is vague, as well as remarks relevant for the database construction. Again, we highlight differences and similarities with the decisions of Devries et al. (2011).

AppendixTables.xlsx

* **Input**

This sheet contains the entries of fiscal consolidation measures propositions for each of the 16 countries for the period from 1978 to 2014. The measures are recorded in the year in which they were proposed, with the expected effect for the relevant years separated. The measures that are recorded for the current year are considered unexpected for the given year. The measures that are announced to be enacted in the following years are considered expected in the year of enactment. Importantly, the measure amount is provided in **levels of local currency** and **not in percentages of GDP**.

The **notes** column contains clarifications with regards to the identification and classification of the measures.

The **source** column contains the source(s), from which the measures were identified and quantified.

Each measure is classified in one of the **27 categories** listed below.

|  |  |
| --- | --- |
| **Category** | **Description** |
| **CONS** | Consumption |
| **INV** | Investment |
| **SAL** | Salaries |
| **NYCEX** | Not Yet Classified Spending |
| **OTHEX** | Other Spending |
| **PIDT** | Personal Income Direct Taxes |
| **CDT** | Corporate Direct Taxes |
| **NYCPC** | Not Yet Classified Corporate vs Private (Direct Taxes) |
| **INDT** | Indirect Taxes |
| **PROPPT** | Property Taxes - Private |
| **PROPCP** | Property Taxes - Corporate |
| **PROPNYC** | Property Taxes - NYC Corporate vs Private |
| **NYCTX** | Not Yet Classified Taxes |
| **OTHTX** | Other Taxes |
| **PENS** | Pensions |
| **FIRSUB** | Firm Subsidies |
| **FCPO** | Family and Children Policies |
| **RD** | Research&Development and Firm |
| **TCDPT** | Tax Credits and Deductions - Private |
| **TCDCP** | Tax Credits and Deductions - Corporate |
| **TCDNYC** | Tax Credits and Deductions - NYC Corporate vs Private |
| **TCDIND** | Tax Credits and Deductions - Indirect |
| **UNEM** | Unemployment |
| **HLT** | Health Related |
| **OTHSS** | Other Social Security |
| **EDU** | Education |
| **OTSUB** | Other Subsidies |

* **InputTables**

This sheet aggregates/classifies the data from the previous sheet in a desirable way. The classification table is the following one:

|  |  |  |
| --- | --- | --- |
| **Tax/Spend** | **Real Components** | **Category** |
| Spending | Direct Taxes | CONS |
| FCPO |
| FIRSUB |
| OTHSS |
| OTSUB |
| RD |
| Government Consumption and Investments | CONS |
| INV |
| SAL |
| NYC Spending | NYCEX |
| Other Spending | OTHEX |
| Transfers | EDU |
| Transfers | FCPO |
| FIRSUB |
| HLT |
| OTHSS |
| OTSUB |
| PENS |
| RD |
| UNEM |
| Taxes | Direct Taxes | CDT |
| INDT |
| NYCPC |
| OTHTX |
| PIDT |
| PROPCP |
| PROPNYC |
| TCDCP |
| TCDNYC |
| TCDPT |
| Indirect Taxes | INDT |
| TCDIND |
| NYC Tax | NYCTX |
| Other Tax | OTHTX |
| Property Tax Private | PROPPT |

* **InputCountry**

This sheet contains the values that were copied from the sheet **“InputTables”** and inserted using “paste special – only values”. This is done to facilitate the construction of final pivot tables.

* **Country specific sheets**

Each sheet contains yearly entries of consolidation measure plans for years in which those plans were proposed, where one can choose an appropriate year in the **Year** dropdown menu.

For each year, the page aggregates the information on the consolidation plans in the following way: by **tax/spending**, then by **real components**, then by **singular measures,** with the amounts reported for the relevant years. Moreover, one can see the source used for measure identification for each real componentmeasure group.

**Notes**

The fiscal consolidation **measure amounts** are presented **in local currency** and not in percentages of GDP.

If one decides to make any changes to the excel file, he should first change the numbers in the **“Input”** sheet, then copy-paste the values from the sheet **“InputTables”** to the sheet **“InputCountry”** and, finally, update the pivot tables for each country.

DataStructuring.xlsx

This file describes the procedure of data transformation which was employed in order to transform the raw data of the fiscal shocks database (AppendixTables.xlsx) into the dataset used for paper results’ replication (NewComponents1978-2014\_final.xlsx).

* **Macro**

This sheet contains the macroeconomic data (including GDP values) and two vectors of dummies that identify whether a given year is considered to be related to exogenous fiscal consolidation.

* **Input**

This sheet contains the copy of the “Input” sheet of the AppendixTables file.

* **Scaled**

Here one can see how the measure values are scaled by the value of the GDP of the preceding year[[1]](#footnote-1).

* **Structured**

The data are structured in the way in which they appear in the NewComponents file, where the affiliations are described in the section above.

* **Final**

The conclusive table, which represents the reconstructed copy of the NewComponents file. The only transformation added with respect to the previous sheet is the control for the consolidation dummies located in the “Macro” sheet.

* **Sum-check**

The sheet which allows to calculate the difference between the original NewComponents file and the reconstructed version.

NewComponents1978-2014\_final.xlsx

* **GDP**

This sheet contains the most detailed decomposition of the exogenous fiscal correction announcements. Measure amounts are presented as percentages of the GDP of the year preceding the announcement.

There is an explicit relation between these data and the data of **AppendixTables.xlsx**, whereby the needed transformations are made explicit in the **DataStructuring.xlsx** file.

Any measure announcement for a given year is assigned to one of the categories following the classification provided in the table below (be aware that several tax measures are accounted for in multiple places).

|  |  |
| --- | --- |
| **New\_Components1978-2014\_final.xlsx classification**  | **AppendixTables\_new.xlsx classification** |
| Taxes | **Taxes - Income** | Corporate Tax |
| Personal Income Tax |
| NYC CvsP |
| **Taxes - Properties** | Property Tax Private |
| Property Tax Corporate |
| Property Tax NYC |
| **Taxes - Personal** | Personal Income Tax |
| Property Tax Private |
| **Taxes - Corporate** | Corporate Tax |
| Property Tax Corporate |
| **Taxes – Goods and Services** | Goods and Services |
| **Taxes – NYC PvsC** | NYC Tax |
| Property Tax NYC |
| NYC CvsP |
| **Taxes - NYC** | NYC Tax |
| **Taxes - Other** | Other Tax |
| Spending | **Spending - Consumption** | Consumption |
| **Spending - Salaries** | Salaries |
| **Spending - Investments** | Investment |
| **Spending - Transfers** | Transfers |
| **Spending – Not yet classified** | NYC Spending |
| **Spending - Other** | Other Spending |

Next, each new measure announcement from the **AppendixTables.xslx** file (**Input** sheet) is divided by the GDP level of the year preceding the given announcement (as at the time of announcement, it is the latest datum available). Moreover, there is further classification between the **announced** measures and the **unexpected** ones. **Unexpected** measures are just the those that regard the year of announcement itself, while are considered **announced** those that were announced at least one year prior to the planned enactment. Thus, the **u\_t** column denotes the unexpected fiscal measures for any given year while the column **a\_t** denotes the **cumulative** impact of the measures announced for the given year in the years before (in this case the summation is over the past five years). The same reasoning extends for the entries of columns **a\_t+j** (with j from 1 to 5), which contain the **cumulative impact** of the measures announced in year t or before for year t+j. The logic behind this classification is the fact that the fiscal announcements present the **corrections** to the existing budget plans and, thus, only the effective total (expected/announced or effective) change in the budget should play a role.

The next entries summarize the total *Tax* and *Spending* measure amounts. Note that while the ***Spending-Total*** column is just the sum of all the entries of the related preceding columns, the ***Tax-Total***is composed as *Taxes-Income + Taxes-Properties + Taxes-Goods and Services + Taxes-Not yet classified + Taxes-Other* without taking the remaining three columns of the Tax related measures which merely represent the further decomposition of the measures.

The ***Tax-Impact Tot*** and ***Spending-Impact Tot*** summarize the measures to be implemented in any given year, thus summing the unexpected component, **u\_t**, with the expected one, **a\_t**.

The next entries contain the summation of all the measures, unexpected and announced, at any given year. Further, the aggregate amounts are calculated. The classification is provided in the following table:

|  |  |  |
| --- | --- | --- |
| **Taxes - Income: u\_t + a\_t + … + a\_t+5** | **Direct Tax Tot** | **Tax Tot** |
| **Taxes - Propetries: u\_t + a\_t + … + a\_t+5** |
| **Taxes - Goods and Services: u\_t + a\_t + … + a\_t+5** | **Indirect Tax Tot** |
| **Taxes - Not yet classified: u\_t + a\_t + … + a\_t+5** | **NYC Tax Tot** |
| **Taxes - Other: u\_t + a\_t + … + a\_t+5** | **Other Tax Tot** |
| **Spending - Consumption: u\_t + a\_t + … + a\_t+5** | **Cons-Inv Tot** | **Spend Tot** |
| **Spending - Salaries: u\_t + a\_t + … + a\_t+5** |
| **Spending - Investments: u\_t + a\_t + … + a\_t+5** |
| **Spending - Transfers: u\_t + a\_t + … + a\_t+5** | **Transfers Tot** |
| **Spending - Not yet classified: u\_t + a\_t + … + a\_t+5** | **NYC Spend Tot** |
| **Spending - Other: u\_t + a\_t + … + a\_t+5** | **Other Spend Tot** |

The *New Plan* dummy is equal to one for years in which new exogenous fiscal measures were introduced. *Negative Consolidation* is a dummy that is equal to one for years in which the total amount of exogenous consolidation measures was negative.

The *EB* and *TB* dummies denote whether the consolidation measures undertaken in a given year was *Expenditure-based* or *Tax-based*. For years of no consolidation measures both dummies are equal to zero. In case of non-zero consolidation years, the classification goes as follows: if a new plan was introduced in the given year, the prevalent component marks the plan (e.g. if Tax Tot > Spending Tot, then TB = 1. Note that the plan classification is made with considerations of both contemporary and announced future measures); if a new plan was not introduced, the measure classification remains the same (unless there were no measures planned for the year, in which case, as described above, both dummies would be zero).

The next set of dummies make a finer classification of years with non-zero total consolidation, dividing such years among five categories: **DB** (Direct tax based), **IB** (Indirect tax based), **CB** (Consumption and Investment spending based), **TRB** (Transfer spending based) and **NYC** (Not Yet Classified).

**Hierarchical Dummies** logic (for a given year):

* If total measure amount is zero, then all the dummies are zero
* If there was a new plan introduced and there was negative consolidation, then all the dummies are zero
* If the previous points are not effective and there was no new plan introduced, the dummy values are equal to the year before. If the previous points are not effective and there was a new plan introduced, one of the dummies will be non-zero, following the subsequent reasoning:
	+ If **TB** = 1 and **Direct Tax Tot** ≥ **Indirect Tax Tot** + abs(**NYC Tax Tot**), then **DB** = 1
	+ If **TB** = 1 and **Indirect Tax Tot** ≥ **Direct Tax Tot** + abs(**NYC Tax Tot**), then **IB** = 1
	+ If **EB** = 1 and **Cons-Inv Tot** ≥ **Transfers Tot** + abs(**NYC Spend Tot**), then **CB** = 1
	+ If **EB** = 1 and **Transfers Tot** ≥ **Cons-Inv Tot** + abs(**NYC Spend Tot**), then **TRB** = 1
	+ If **DB** = **IB** = **CB** = **TRB** = 0, then **NYC** = 1

**Non-Hierarchical Dummies** logic:

* If total measure amount is zero, then all the dummies are zero
* If there was a new plan introduced and there was negative consolidation, then all the dummies are zero
* If the previous points are not effective and there was no new plan introduced, the dummy values are equal to the year before. If the previous points are not effective and there was a new plan introduced, one of the dummies will be non-zero, following the subsequent reasoning:
	+ If **Direct Tax Tot** ≥ **X1[[2]](#footnote-2)**, then **DB** = 1
	+ If **Indirect Tax Tot** ≥ **X2[[3]](#footnote-3)**, then **IB** = 1
	+ If **Cons-Inv Tot** ≥ **X3[[4]](#footnote-4)**, then **CB** = 1
	+ If **Transfers Tot** ≥ **X4[[5]](#footnote-5)**, then **TRB** = 1
	+ If **DB** = **IB** = **CB** = **TRB** = 0, then **NYC** = 1

The *3-Components Dummies* dummy group classifies the years on non-zero total consolidation in one of the four groups: **TB** (Tax based), **CB** (Consumption and Investment based), **TRB** (Transfer based) and **NYC** (Not Yet Classified).

**3-Components Dummies** logic:

* If total measure amount is zero, then all the dummies are zero
* If there was a new plan introduced and there was negative consolidation, then all the dummies are zero
* If the previous points are not effective and there was no new plan introduced, the dummy values are equal to the year before. If the previous points are not effective and there was a new plan introduced, one of the dummies will be non-zero, following the subsequent reasoning:
	+ If **Tax Tot** ≥ **X5[[6]](#footnote-6)**, then **TB** = 1
	+ If **Cons-Inv Tot + NYC Spend Tot + ½ Other Spend Tot** ≥ **X6[[7]](#footnote-7)** and **Cons-Inv Tot + ½ Other Spend Tot ≥ X7[[8]](#footnote-8)**, then **CB** = 1
	+ If **Transfers Tot** **+ NYC Spend Tot + ½ Other Spend Tot** ≥ **X8[[9]](#footnote-9)** and **Transfers Tot + ½ Other Spend Tot** ≥ **X9[[10]](#footnote-10)**, then **TRB** = 1
	+ If **TB** = **CB** = **TRB** = 0, then **NYC** = 1

The *Share of components over total plan* shows the shares of different classified components of the consolidation measures (for years of non-zero total consolidation).

The last set of columns describes the times when the shares of components (from the previous column) do not surpass an empirically set threshold (set to 25%), which would mean that there is presence of a relatively large amount of *Not Yet Classified* and *Other* measures. Nearby one can see a short summary table which counts the number of times when the empirical share threshold was not met.

* **MacroData**

Here is the list of macro variables in the database.

|  |  |
| --- | --- |
| **GDP\_scale** | It is a transformation of GDP. For euro area countries GDP was converted in local currency before 2002. For all the countries GDP was rescaled in billions. |
| **esi\_con** | Consumer confidence indicator SADJ. Source: Datastream. Code: \*OCS005Q. Downloaded 12/05/2016. |
| **esi\_ind** | Manufacturing industry confidence SADJ. Source: Datastream. Code: \*OBS085Q. Downloaded 12/05/2016. |
| **ggfl** | General government gross financial liabilities, value. Source: OECD Economic Outlook n. 97. |
| **gdptr** | Potential output of total economy, value. Source: OECD Economic Outlook n. 97. |
| **gdp** | Gross domestic product, value, market prices. Source for all except IRL: OECD Economic Outlook n. 97. Source for IRL: IMF WEO April 2015. |
| **gdpv** | Gross domestic product, volume, market prices. Source for all except IRL: OECD Economic Outlook n. 97. Source for IRL: IMF WEO April 2015 |
| **r\_sh** | Short-term interest rate. Source: OECD Economic Outlook n. 97. |
| **r\_lo** | Long-term interest rate on government bonds. Source: OECD Economic Outlook n. 97. |
| **pfce** | Old variable. The more recent version is used. See **pfce\_new**. |
| **gfcf** | Old variable. Unused in the paper**.** |
| **popt** | Population. Unit: Persons, thousands. Source: OECD Historical population data and projections (1950-2050). |
| **fbgsd** | Trade balances for goods and servicesSource: OECD Economic Outlook n.94. |
| **NE** | Net Exports (GDPV-FDDV). |
| **itv** | Gross fixed capital formation, total volume. Source: OECD Economic Outlook n. 97. |
| **fddv** | Final domestic expenditure, volume. Source: OECD Economic Outlook n. 97. |
| **ipv** | Private Investments (Total - Government gross fixed capital formation, volume) from OECD Economic Outlook n. 97, except AUT, PRT, ITA, IRL, ESP (from ECOFIN AMECO, Private Investments scaled with Total Investment Deflator from same database). |
| **cpv** | Private final consumption expenditure, volume. Source: OECD Economic Outlook n. 97. |
| **utr** | Unemployment rate. Source: OECD Economic Outlook n. 97. |
| **totmk** | DS Market - TOT RETURN index. Source: Datastream. Code: TOTMKXX(RI). Note: set 30/12/1978 as starting date and 30/12/2014 as end date to get end-year values. |
| **neer** | Nominal effective exchange rate, chain-linked, overall weights. Source: OECD Economic Outlook n. 97. |
| **hfce** | Household final consumption expenditure, constant prices (USD-2005 prices). Datastream code: \*WDP2B9C. Source: World Bank. Downloaded 12/05/2016. Note: includes expenditures of non-profit institutions serving households. |
| **pfce\_new** | Household Consumption Expenditure, incl. NPISHs, Nominal, IMF International Financial Statistics database. |
| **yrg** | Current receipts, general government value, OECD EO 98. Note: for AUS 1978-1988 and IRL before 1990 data come from EO 88. |
| **oco** | Other current outlays, general government, value (TSUB (subsidies, value) +TOCP (other current payments general government, value)), OECD EO 98. Note: for AUS 1978-1988 and IRL before 1990 data come from EO 88. |
| **sspg** | Social security benefits paid by general government, value, OECD EO 98. Note: for AUS 1978-1988 and IRL before 1990 data come from EO 88. |
| **cgv** | Government final consumption expenditure, volume, OECD EO 97. Note: for IRL we use Final consumption expenditure of general government from AMECO dataset, in 2012 prices (to deflate we use the correspondent deflator in the dataset: Price deflator total final consumption expenditure of general government). |
| **igv** | Government gross fixed capital formation, volume, OECD EO 97. Note: for AUT(missing 78-94), IRL, ITA, PRT, ESP, we used data from AMECO (Gross fixed capital formation at current prices: general government, deflated with correspondent deflator series in AMECO dataset-Price deflator gross fixed capital formation: total economy ). For PRT we deflated the series in 2011 prices and for IRL in 2012 prices. |
| **ggdeficit** | Government net lending as a percentage of GDP. Source: OECD Economic Outlook n. 97. |
| **CPI** | Consumer price index-all items, IMF International Financial Statistics database. |
| **CC** | Dummy=1 if currency crisis. Source: Reinhart & Rogoff. |
| **IC** | Dummy=1 if inflation crisis. Source: Reinhart & Rogoff. |
| **SMC** | Dummy=1 if stock market crash. Source: Reinhart & Rogoff. |
| **BC** | Dummy=1 if banking crisis. Source: Reinhart & Rogoff. |
| **rec\_index** | NBER for US and OECD for others indicators of recession (=1 if recession). Monthly data, aggregated in the following way: if in a year there are more than 6 months in recession then the dummy is 1. |
| **EPL** | Employment Protection index, sample 1985-2013 (2014 for GBR). Data are from OECD, downloaded 28/06/2016. Computed as the average between EPR\_v1(individual dismissals-regular contracts) and EPT\_v1(temporary employment). |
| **PMR** | Product Market Regulation - Network Sectors, All Sectors, 1975-2013. Data are from OECD, downloaded 28/06/2016. |
| **rexr** | Real effective exchange rate index calculated as the yearly average. Source: Bank of International Settlements. Note that before 1994 we use the narrow index and from 1994 onwards we use the broad index. |
| **debti** | General Government Debt/GDP ratio. Source: IMF Historical Public Debt Database - A few missing observations are replaced by linear interpolation. |
| **debta** | Government Debt/GDP ratio AMECO (for Australia OECD) |
| **debt\_new** | General Government Debt/GDP ratio - IMF Global Debt Database |
| **sfa\_a\_value** | Stock-flow adjustment - AMECO |
| **netint** | Net interest expenses as a percentage of GDP - OECD Economic Outlook |
| **deficit** | General Government net lending as percentage of GDP - OECD Economic Outlook (positive value: deficit; negative value: surplus) |
| **primary\_def** | Primary deficit (deficit-net interests) - OECD Economic Outlook |
| **dis** | Total government disbursements - OECD Economic Outlook |
| **receipts** | Total government receipts - OECD Economic Outlook |
| **cap\_transf\_paid** | Capital transfers paid and other capital payments - OECD Economic Outlook |
| **gov\_cons\_fixedcap** | General government consumption of fixed capital - OECD Economic Outlook |
| **captrans\_gdp** | Capital transfers paid and other capital payments as a percentage of GDP - OECD Economic Outlook |
| **govconscap\_gdp** | General government consumption of fixed capital as a percentage of GDP - OECD Economic Outlook |
| **oecd\_exp\_resid** | . |
| **currentdisb** | Current disbursements of general government excluding gross interest payments - OECD Economic Outlook |
| **currentdisb\_gdp** | Current disbursements of general government excluding gross interest payments as a percentage of GDP - OECD Economic Outlook |
| **igaa** | General government fixed capital formation, appropriation account - OECD Economic Outlook |
| **cgaa** | General government final consumption expenditure, appropriation account - OECD Economic Outlook |

1. The only exception to this rule is made for Portugal for year 2001. Due to currency change and our data choice, the normalized value for the previous year is not available and in our case is approximated by the value of the GDP for the current year. [↑](#footnote-ref-1)
2. **X1** = max (**Indirect Tax Tot** + abs(**NYC Tax Tot**)**;** **Cons-Inv Tot; Transfers Tot; Transfers Tot** + **NYC Spend Tot; Cons-Inv Tot** + **NYC Spend Tot**). [↑](#footnote-ref-2)
3. **X2 =** max (**Direct Tax Tot** + abs(**NYC Tax Tot**)**;** **Cons-Inv Tot; Transfers Tot; Transfers Tot** + **NYC Spend Tot; Cons-Inv Tot** + **NYC Spend Tot**). [↑](#footnote-ref-3)
4. **X3 =** (**Transfers Tot** + abs(**NYC Spend Tot**)**;** **Indirect Tax Tot; Direct Tax Tot; Indirect Tax Tot** + **NYC Tax Tot; Direct Tax Tot** + **NYC Tax Tot**). [↑](#footnote-ref-4)
5. **X4 =** (**Cons-Inv Tot** + abs(**NYC Spend Tot**)**;** **Indirect Tax Tot; Direct Tax Tot; Indirect Tax Tot** + **NYC Tax Tot; Direct Tax Tot** + **NYC Tax Tot**). [↑](#footnote-ref-5)
6. **X5** = max (**Cons-Inv Tot + NYC Spend Tot + ½ Other Spend Tot; Cons-Inv Tot + ½ Other Spend Tot; Transfers Tot + NYC Spend Tot + ½ Other Spend Tot; Transfers Tot + ½ Other Spend Tot**). [↑](#footnote-ref-6)
7. **X6 =** max (**Tax Tot; Transfers Tot + ½ Other Spend Tot**). [↑](#footnote-ref-7)
8. **X7** = max (**Tax Tot; Transfers Tot + NYC Spend Tot + ½ Other Spend Tot**). [↑](#footnote-ref-8)
9. **X8** = max (**Tax Tot; Cons-Inv Tot + ½ Other Spend Tot**). [↑](#footnote-ref-9)
10. **X9 =** max (**Tax Tot; Cons-Inv Tot + NYC Spend Tot + ½ Other Spend Tot**). [↑](#footnote-ref-10)