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CONFIDENCE AND THE TRANSMISSION OF GOVERNMENT EXPENDITURE
SHOCKS: THE CASE OF PORTUGAL

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Abstract

This thesis investigates the confidence channel through which shifts in government expenditure can affect the Portuguese economic activity, using a linear structural Vector Autoregressive model from 1995 to 2016. The impulse responses are constructed to analyze the impact of government spending measures on output, in a model where confidence is not included, to isolate the direct effect of government expenditure on output, and in a model with confidence, to account for an indirect effect through confidence. Overall, the findings suggest that neither consumer confidence nor business confidence play a crucial role in the propagation of public spending shocks into output.

Keywords: Consumer and Business Confidence; Government Expenditure; Output; Portugal.

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1. Introduction

The impact of fiscal policy on the economic activity is an ongoing concern of policy makers. While fiscal policies generally exert an important, commonly studied in the literature, “direct” effect on real macroeconomic variables¹, they may also have a crucial impact through a confidence channel, as shown by Bachmann and Sims (2011). The idea that the sentiment of households and businesses plays a key role in the propagation of policy shocks into the economy is not new, however lacks supporting empirical evidence.

In the context of the recent financial and sovereign debt crisis, many economists, policy makers, governments and international organizations emphasized the importance of implementing expansionary fiscal policies in order to improve the confidence of both consumers and firms on the economy and, thus, mitigate the risk of recession.

In fact, the relevance of sentiments of optimism and pessimism to understand economic fluctuations was emphasized by Keynes (1936). Confidence indicators provide insights about the perspectives of households and businesses regarding the current and future states of the economy. As noted by Spilimbergo et al. (2008, pp. 6-7), in uncertain environments, like the one of a recession, consumers increase their precautionary savings and firms delay their investment expenditures contributing to a fall in aggregate demand. Furthermore, as these qualitative indices are readily available, they may be considered by policy makers when conceiving future policies.

The research question of this study is “Is there a role for confidence on the transmission of government expenditure shocks into aggregate output, in Portugal?”. The objective is to understand the indirect confidence channel through which public spending shocks can affect economic activity. For example, as a result of the crisis, Portugal adopted a series of austerity measures, under the Economic and Financial Assistance

¹ See for example Fatás and Mihov (2001), Blanchard and Perotti (2002), Perotti (2002), Mountford and Uhlig (2008) and Afonso and Sousa (2012).

Program, through expenditure cuts and increases in taxes, which contributed to the fall of disposable income and the decline of domestic demand. Small businesses in Portugal and overall economic activity were, consequently, impacted negatively, as noted by Gurnani (2016, p. 11). This period was dominated by a pessimistic outlook of both consumers and businesses about the present and future states of the economy. In more recent years, budgetary impulses increased in Portugal as well as the gross domestic product and it seems relevant to consider whether the upward trend in overall confidence levels contributed to the recovery of the economy.

The present study seeks to provide more insights into the relation between confidence and the impact of fiscal policies in Portugal, thus extending and complementing existing studies. We begin by analyzing the relation between shifts in government spending, changes in the prospects of economic agents and how this affects output. The next step is to understand if systematic movements in consumer and business confidence have an impact in the transmission of government expenditure shocks on output, in the framework of a vector autoregressive model (VAR), generally used in the literature to analyze the impact of budgetary shocks, with and without confidence, applied to the Portuguese economy for the period from the first quarter of 1995 to the second quarter of 2016.

Our findings suggest that confidence does not play a crucial role in the transmission of public spending shocks into the economy, in normal times, considering that, under the two different estimated systems, including and excluding confidence, the estimated impulse responses of output to a government expenditure shock are very similar.

The remainder of the paper is structured as follows. Section 2 makes a review of the literature. Section 3 describes the data and methodology employed in this study. Section 4 presents and discusses the results on the importance of confidence in the transmission of government shocks into output. The last section concludes.

2. Literature review

2.1. Confidence and Economic Activity

The literature concerning the role of confidence in the economic activity is relatively limited and is dominated by two main ideas, which Barsky and Sims (2008) refer to as the “animal spirits” view and the “information” view. The first view suggests that exogenous shifts in sentiment exert an independent causal effect in the economy and are, thus, key to understand economic fluctuations. Following this idea, an improvement in overall sentiment would stimulate aggregate demand and promote temporary movements in economic activity. According to the second view, shocks in consumer and business confidence have merely predictive power of future consumption and investment patterns of expenditure, meaning that they reflect important information about the current state of the economy and future economic fundamentals, namely productivity.

Economic research has focuses predominantly on the second belief, i.e. on the ability of consumer sentiments and shifts in expectations to forecast economic activity. Empirically, the work of Bram and Ludvigson (1998) is one of the most recognized in this area. They investigate how consumer expectations affect private spending in the US, by using survey based indices. Their results suggest that consumer confidence can indeed help forecast consumption, and that consumer attitudes may lead to economic fluctuations. Other authors, such as Carroll, Fuhrer and Wilcox (1994), Fuhrer (1993) and Matsusaka and Sbordone (1995) also find evidence that unexpected improvements in sentiment imply rises in consumption and growth of spending.

Although business sentiment has not received much attention in the literature, Bodo et al. (2000) and McNabb and Taylor (2007) note that measures of business confidence may also play an important role in predicting economic activity in the future.

2.2. Confidence and Fiscal Policy

Despite the fact that many studies investigate the “direct” effects of fiscal policy measures on the real macroeconomy, the literature involving the relation between confidence and fiscal policy is relatively small.

Fiscal policies might influence confidence of economic agents in several ways. As Bachmann and Sims (2011, p. 4) note, shocks in fiscal policy “might signal a commitment to aggregate stability, thereby raising sentiment”. Consequently, if households and firms have positive perceptions of the current and future general economic conditions, they might be more willing to consume and make investments, which stimulates aggregate demand and the economy through an “indirect” transmission mechanism.

Another perspective presented by the above mentioned authors is related with the inability of economic agents to observe the improvement of macroeconomic fundamentals, especially after a recession when the beliefs of agents are slow to move. In this case, by enacting expansionary fiscal policy, governments “may convince agents that fundamentals have changed, thereby facilitating recovery” (Bachmann and Sims (2011, p. 5)).

Another idea, in line with the “information” view in Barsky and Sims (2008), is that budgetary measures such as investments in infrastructure or R&D may change positively the beliefs of economic agents about “future fundamentals” and impact confidence.

Nevertheless, Gordon and Leeper (2005) argue that a rise in government expenditure may not be able to induce positive sentiment or translate into additional spending, as forward-looking economic agents recognize that such spending is temporary and contributes to public debt and end up anticipating future tax rises. Therefore, and in face of uncertainty and a pessimist outlook, precautionary savings increase and investment decisions are delayed, leading to deepened recession.

Konstantinou and Tagkalakis (2010) are the authors of one of the few papers that investigate the effect of fiscal policies on confidence, namely the view that expansionary fiscal policy can lead to improved consumer and business confidence, using a single-equation approach. Regarding public expenditure, one of their main findings is that higher non-wage government consumption has a significant, positive impact in both consumer and business confidence. Nonetheless, their results suggest that higher wage expenditure and government investment worsen confidence.

Bachmann and Sims (2011), on the other hand, analyse whether consumer and business confidence are relevant channels of the transmission of fiscal shocks into output, in the U.S., in the context of a linear VAR, as well as a non-linear VAR to distinguish the effects in normal times and periods of recession. Overall, they conclude that, in normal times, the response of confidence to unexpected rises in public spending is not significant for the propagation of government spending shocks into output. However, during periods of economic contraction, the increases in confidence are significantly larger.

2.3. Portugal

Among the few papers that address confidence in Portugal, Mendicino and Punci (2013) investigate the effects of shocks to economic confidence on cyclical fluctuations. By considering the inflation rate, the nominal interest rate and industrial production or the unemployment rate in their estimated VAR models, they find that shocks to confidence explain a considerable variation in economic activity and, particularly, that unexpected positive changes in confidence lead to a macroeconomic expansion. In a different study, Caleiro and Ramalho (2009) conclude that unemployment rate, entrance in the Eurozone and electoral environment are key elements explaining consumer confidence in Portugal.

While literature has shown that fiscal policy impacts output and the aggregate economy (e.g. Pereira and Wemans (2013)), and that consumer confidence can affect output, the relation between confidence indicators and fiscal policy is to be explored. This thesis follows the arguments of Bachmann and Sims (2011) and expands the analysis to the Portuguese economy, using a linear VAR approach.

3. Data and Methodology

3.1. Descriptive Data

We use quarterly data comprising the period from 1995:1 to 2016:2, for Portugal.²

Concerning the confidence variables, the consumer confidence index and business confidence index were obtained from the Organization for Economic Co-operation and Development (OECD) – Main Economic Indicators (MEI) database, which covers several indicators for consumer opinion and business tendency surveys. These surveys reflect the opinions of consumers and enterprises about the current state of the economy as well as expectations for the future. The opinions are compared to opinions on a “normal” state and the difference between answers which are positive and negative is made, corrected for seasonality and, then, used to construct the qualitative, leading, confidence indicators that reflect the perception and expectations of economic agents.³

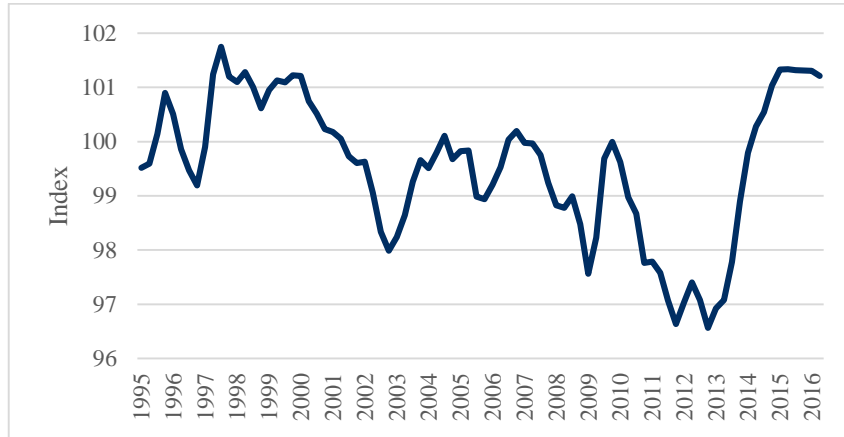
The consumer confidence index is based on households' current view of their financial situation and expectations for the immediate future and plans for big purchases or savings. Figure 1 outlines the time-series of consumer confidence levels for Portugal. The indicator presents some volatility over the sample period. As Caleiro and Ramalho (2009, p. 4) note, the series follows an “inverted u-shaped trajectory” until 2003. Consumer

² Appendix A provides an overview of the variables used in this thesis and respective sources.

³ Please refer to Appendix B for further details on the data source, questions and methodology employed on the consumer opinion and business tendency surveys.

confidence, as measured by the surveys, achieved its lowest values in 2003, 2009, and 2012.

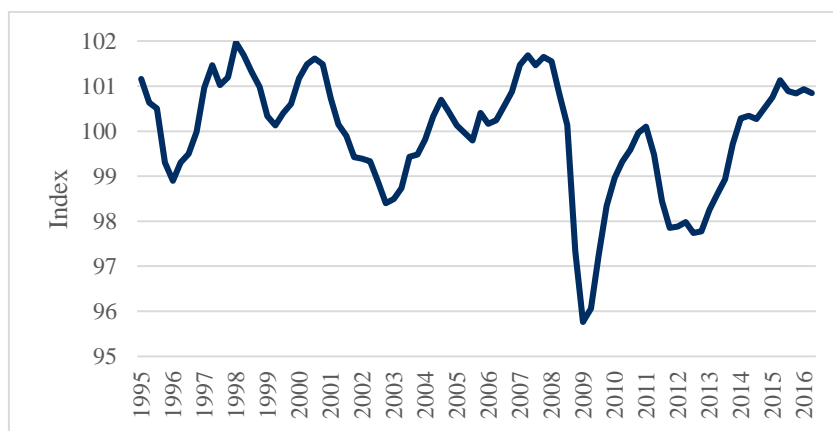
Figure 1. Consumer Confidence Index



Consumer confidence index in Portugal over about 22 years ending June 2016. Data source: OECD – Main Economic Indicators Database. The index is presented with long-term average equal to 100. Values above 100 indicate level above mean.

The business confidence index is constructed from the assessment of businesses of trends in production, orders and stocks, in addition to their current position and prospects for the future. Figure 2 plots the business confidence indicator against time. In general, this indicator presents a relatively more stable behavior than the consumer index. Business confidence registered its lowest value in 2009.

Figure 2. Business Confidence Index



Business confidence index in Portugal over about 22 years ending June 2016. Data source: OECD – Main Economic Indicators Database. The index is presented with long-term average equal to 100. Values above 100 indicate level above mean.

In the context of VAR models involving fiscal policy variables, one of the critical concerns is the availability of data. The quarterly fiscal variables used in this study were obtained from the Statistics of the Bank of Portugal. The total government expenditure corresponds to the sum of government non-wage spending, government wage spending and government investment. In particular, these variables are defined in the following way: government wage expenditure corresponds to the compensation of employees and non-wage expenditure refers to other sources of spending, namely consumption of goods and services and current transfers, as commonly divided in the literature. Furthermore, investment expenditure concerns the purchase of capital goods or capital transfers.

Finally, data on the quarterly gross domestic product (GDP) is collected for the Portuguese economy, for the relevant period. This variable expresses the value of final goods and services produced by a country during a period minus the value of imports. The source of the data is the Bank of Portugal and the series is measured as chain linked volume data.

The fiscal and aggregate output variables are divided by population with 15 years and over. Moreover, the variables are corrected for seasonality using the Census X12 Autoregressive Integrated Moving Average (ARIMA) and presented in real terms, namely deflated using the consumer price index.

3.2. Confidence and the transmission of government spending shocks

The empirical approach to model the relationship between government expenditure, output and either the consumer or the business confidence index relies on a Structural Vector Autoregressive (SVAR) model.

For each confidence indicator, an aggregate 3-variable VAR model is estimated with the general structural form of order p :

$$BY_t = B_0 + \sum_{j=1}^p B_j Y_{t-j} + u_t \quad (1)$$

where Y_t represents the vector of endogenous variables at time t , Y_{t-j} is the vector of endogenous variables at time $t - j$, B_0 is the vector of constants, B is the 3×3 matrix of structural coefficients, p is the lag length and u_t is a vector of structural innovations.

Following the argument of Bachmann and Sims (2011) about the importance of confidence in the propagation of fiscal policy shocks into the economy, a linear structural VAR model, similar to the one presented by these authors, is estimated including output, which can be written in the following way:

$$\begin{bmatrix} 1 & 0 & 0 \\ b_{2,1} & 1 & 0 \\ b_{3,1} & b_{3,2} & 1 \end{bmatrix} \begin{bmatrix} g_t \\ conf_t \\ y_t \end{bmatrix} = B_0 + \sum_{j=1}^p B_j \begin{bmatrix} g_{t-j} \\ conf_{t-j} \\ y_{t-j} \end{bmatrix} + \begin{bmatrix} u_{1,t} \\ u_{2,t} \\ u_{3,t} \end{bmatrix} \quad (2)$$

As stated by Stock and Watson (2001, p. 103), “structural VARs require “identifying assumptions” that allow correlations to be interpreted causally”. Therefore, the problem of identification is to translate the reduced-form errors obtained directly from the VAR estimations, e_t , into economically meaningful shocks, u_t , where $u_t = B^{-1}e_t$. In this study, the identification of fiscal shocks is made following a recursive identification, specifically through a Cholesky decomposition of the variance-covariance matrix of residuals.

The vector of endogenous variables, in the aggregate model, is $Y_t = [g_t \ conf_t \ y_t]$, where g is the measure for government expenditure, $conf$ refers to the consumer or

business confidence indicator depending on the estimated model and y is included as a measure of output in Portugal.

Regarding the Wold order, one key assumption is that government spending is ordered first meaning that it is not affected contemporaneously by innovations in other variables. This assumption is consistent with the widely accepted identifying restriction present in Fatás and Mihov (2001) and Blanchard and Perotti (2002), for instance. The latter argue that there are approval and implementation lags in fiscal policy decision making. Hence, within the period, discretionary measures of government expenditures are predetermined relatively to the confidence indicators or other macroeconomic variables.

Moreover, confidence indicators are allowed to react directly to shocks in government expenditure, considering that the spending for the following year is generally defined in the public budget and agents have some information about this through news.

The final assumption is that output depends contemporaneously on its own structural shock, confidence and government spending. Given that the results of the surveys are collected on a monthly basis, we assume that households and businesses do not have information about aggregate output when they fill the survey.

As Bachmann and Sims (2011) argue, on the one hand, the direct impact effect of government expenditure to output is given by $b_{3,1}$. On the other hand, by assuming that confidence reacts immediately to government expenditure ($b_{2,1} \neq 0$) and that output reacts on impact to confidence, then the indirect impact effect through the confidence channel is the result of $b_{2,1} * b_{3,2}$.

Besides that, the above mentioned authors note that independently of the impact effect, “confidence can operate as a propagation mechanism of spending shocks” (Bachmann and Sims (2011, p. 7)).

In this study, the impulse response functions (IRFs) of the estimated VAR models including the confidence measures are compared to the IRFs from a system including solely the government spending measure and aggregate output. The aim is to verify if confidence plays a significant positive or negative role on the transmission of public spending shocks to the economic activity.

The existence of stationary VAR models in levels was verified, with all roots in the systems lying inside the unit circle. Regarding the choice of the optimal number of lags to use in the model, we followed the lag length recommendations of the Akaike information criterion and of the Final Prediction Error. The models with household and business confidence were estimated with three and four lags, respectively. The autocorrelation LM test was performed and it did not show signs of serial correlation in either model. For all the estimated VAR models, the specification included a constant. Structural breaks were not accounted for simplicity of analysis.

4. Confidence and the transmission of government spending shocks

In this section, linear VAR systems including the logarithm (log) real public spending, the log real GDP and the confidence indicator are estimated in levels, in line with the systems estimated by Bachmann and Sims (2011).

The IRFs are computed with one standard deviation innovation in the fiscal variable and presented over the horizon of sixteen quarters.

4.1. Consumer Confidence

Figure 3 shows the impulse responses corresponding to the model specifications where confidence is included and reacts to shocks in government spending and where confidence is excluded, thus showing the direct effects of public spending on output.

The blue lines in the figures represent the responses to the shock in public spending and the red lines delimit the regions of the 95 percent confidence bands.

We note that the dynamic responses of government expenditures and output are similar under both specifications. Specifically, output increases on impact and declines gradually after a few quarters. Government expenditures follow a similar behaviour. Both responses are fairly persistent.

When considering the estimations without confidence, we conclude that the response of output to a positive shift in public spending is higher. This indicates that confidence has a negative role in the transmission of government expenditure shocks into output. The result goes in line with the Gordon and Leeper's (2005) interpretation that after a few quarters, households recognize that such spending is temporary and will have to be repaid in the future through higher taxes or, alternatively, through a decrease in productive spending, thus contributing to public debt. It is also important to consider that this conclusion contrasts with the one of Bachmann and Sims (2011), who find a positive

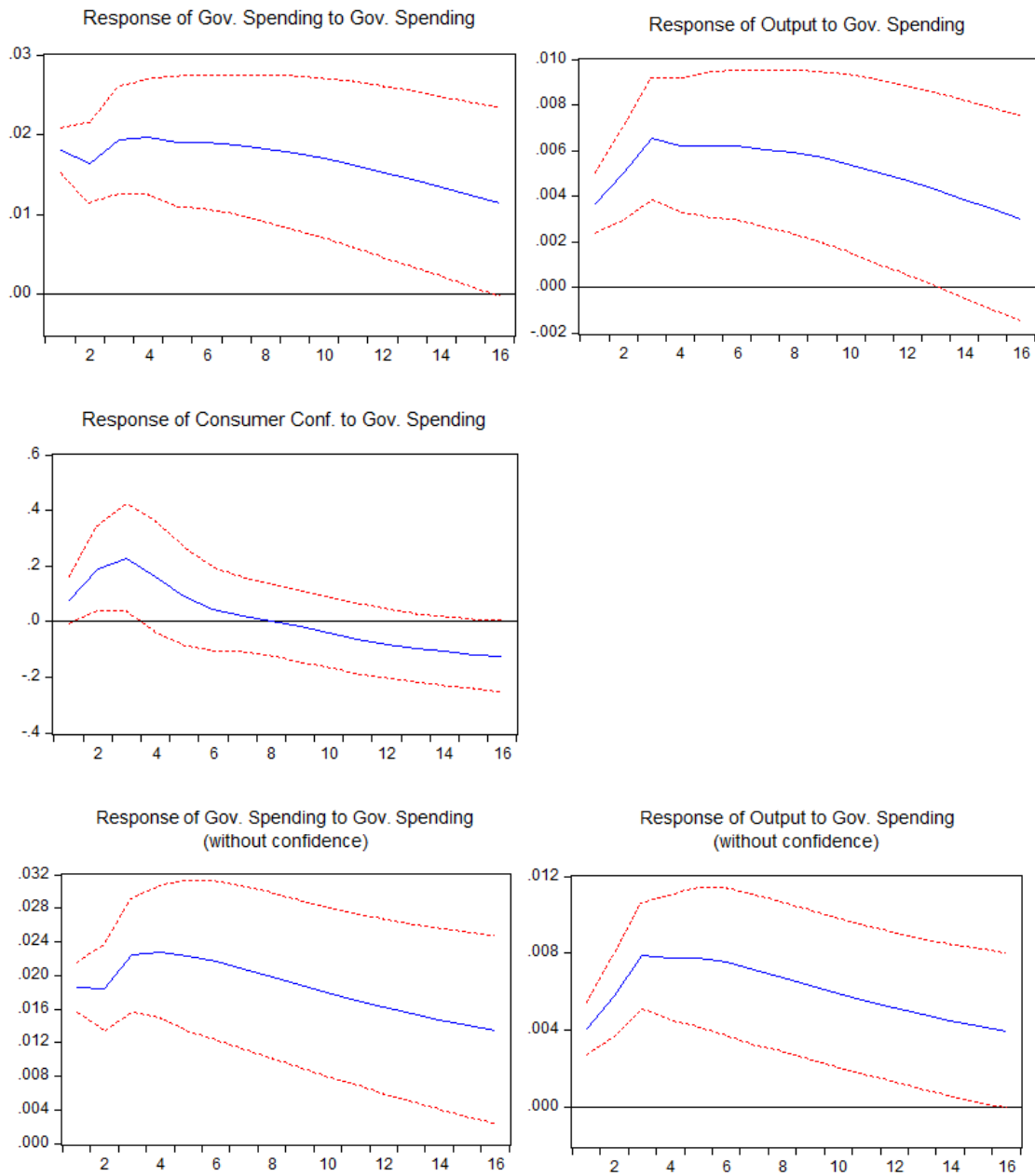
effect of confidence on the transmission of public spending shocks. Nevertheless, in both cases, there is not a significant difference between the impulse responses.

In order to measure this, we present the estimated impact and maximum multipliers for the models with and without confidence on table 1, following the definitions presented by the above mentioned authors. Firstly, the impact multiplier corresponds to the impact response of aggregate output to a government expenditure shock divided by the impact size of the shock in public spending. The maximum multiplier is obtained in a similar way, by using the maximum responses over the 16 quarter horizon instead of the impact responses.

Regarding the estimation with consumer confidence, we computed multipliers around unity. In particular, the impact multiplier is about 0.75 and the maximum multiplier is approximately 1.22. These multipliers are presented in euro terms, by multiplying them by the sample average of output to government expenditure. In fact, as Bachmann and Sims (2011) note, not doing this procedure, would imply that the multipliers are interpreted as elasticities, given that output and government expenditure enter the VAR models in logarithms. As such, the impact multiplier of 0.75 indicates that given a one euro increase in expenditure, output will increase by an extra 75 cents.

Furthermore, we can conclude that the multipliers in the linear model that does not include consumer confidence are very similar, although slightly higher than in the model including confidence. Overall, this suggests that consumer confidence has a negative, however not crucial role in the transmission of expenditure shocks into output, in Portugal.

Figure 3 – Consumer Confidence: Impulse response functions



The first three figures show the impulse response functions corresponding to the model with government expenditure, output and consumer confidence. The two figures on the bottom present the impulse responses of the model excluding consumer confidence. The blue lines in the figures represent the responses to the shock in government spending and the red lines delimit the regions of the 95 percent confidence bands.

Table 1 - Consumer confidence: Multipliers

	Model with confidence	Model without confidence
Impact multiplier	0.75	0.81
Maximum multiplier	1.22	1.28

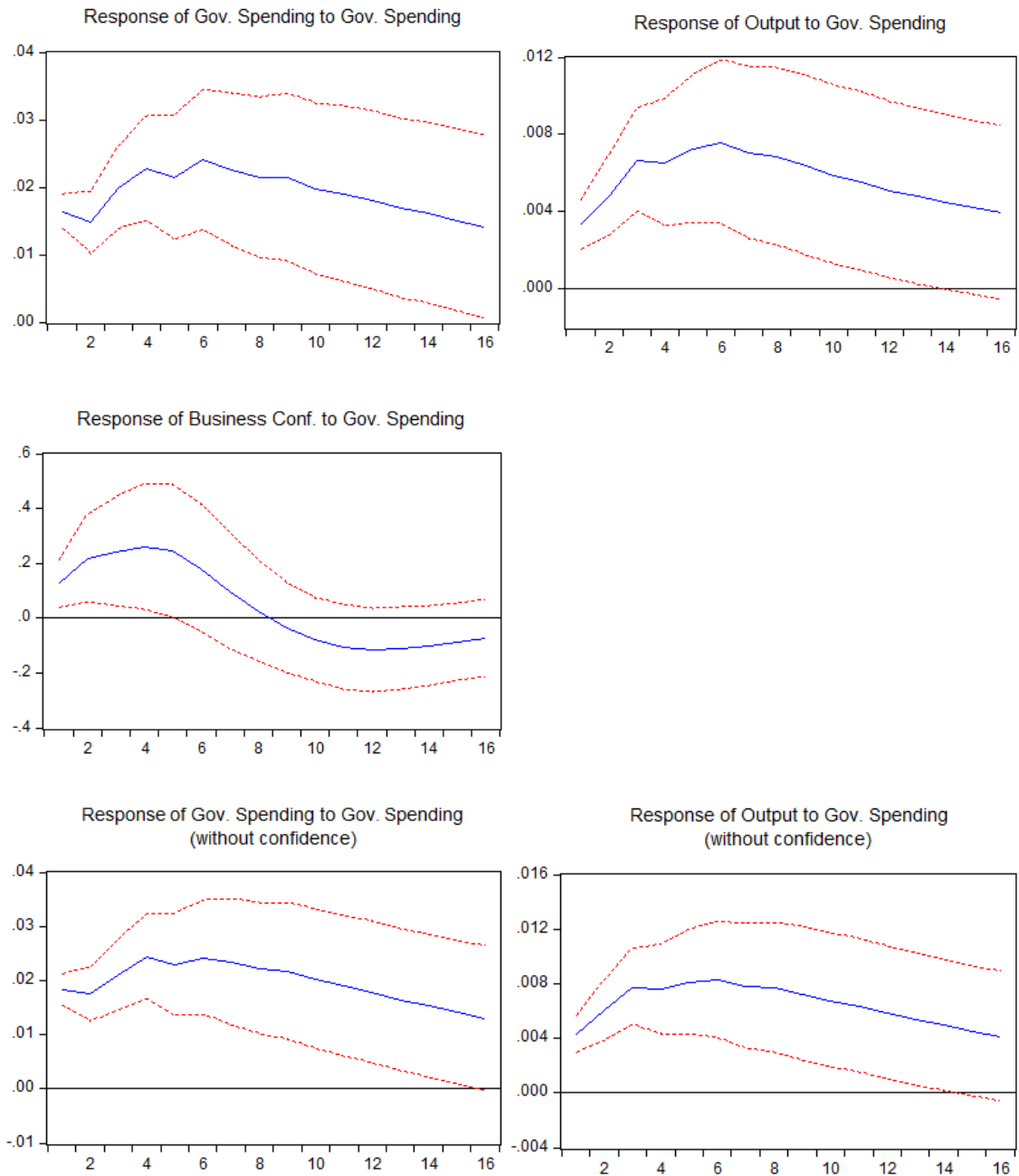
4.2. Business Confidence

A similar analysis is carried out for the business confidence index. The impulse responses using this indicator are shown in figure 4. As in the case with consumer confidence, the sentiment of firms rises on impact in face of a positive shift in public spending and starts to fall after about 8 quarters. Likewise, the responses of output and public spending are higher on impact and over the next quarters in the system excluding the qualitative indicator. This also implies that business confidence has a negative impact on the transmission of the spending shocks into output. Once more, we find that the impulse responses under the two specifications are very similar and that the difference between them is not statistically significant.

In a similar manner, we employ the definitions of impact and maximum multipliers and compute them for the models with and without business confidence. The resulting multipliers are shown in table 2. They are similar to the ones obtained in the consumer confidence case, which means that the multipliers in the model without confidence are slightly higher than the ones in the model including the measure of business confidence in Portugal, but there is not a significant difference between the two model specifications. On the other hand, Bachmann and Sims (2011) find multipliers relative to consumer confidence that are lower than the ones referring to business confidence. Despite this, they argue that such difference in multipliers derives mainly from the different sample sizes used in each system, as a result of data availability.

Taken together, we obtain little evidence suggesting that either consumer or business confidence are important transmission channels of government expenditure shocks into output, in normal times. These results are largely robust to different lag lengths and the main conclusion is in line with the one obtained by Bachmann and Sims (2011) under the linear VAR specification employed by the authors.

Figure 4 – Business Confidence: Impulse response functions



The first three figures show the impulse responses functions corresponding to the model including government expenditure, output and business confidence. The two figures on the bottom present the impulse responses of the model excluding business confidence. The blue lines in the figures represent the responses to the shock in government spending and the red lines delimit the regions of the 95 percent confidence bands.

Table 2 - Business confidence: Multipliers

	Model with confidence	Model without confidence
Impact multiplier	0.75	0.87
Maximum multiplier	1.17	1.26

5. Conclusion

The present study investigates the effects of government expenditure shocks on both consumer and business confidence, as well as the role of confidence on the transmission of these shocks into the aggregate output, in Portugal, using a recursive VAR approach based on quarterly data from 1995 to the second quarter of 2016.

We obtain little evidence suggesting that either consumer or business confidence are important transmission channels of government expenditure shocks into output, in normal times. In fact, the estimated impulse response functions of aggregate output to a government expenditure shock, under the specification excluding the confidence indicators for the Portuguese economy and intended to give the direct effect of expenditure on output, are similar to the ones for the system including confidence. This is also verified by looking at the multipliers, which are similar across both systems.

Even in the cases where the relationship between fiscal policy measures and consumer and business confidence is found not to be significant, the results provide important insights about the indirect effects that the fiscal policy might have in confidence, in the behaviour of economic agents and, thus, on the economic activity.

Some methodological limitations are inherent to the use of the SVAR models. Due to the small dimension of the VAR, the assumptions that are imposed to make the underlying shocks orthogonal maybe be fairly restrictive. The linear structure of the estimated model is also a limitation. Another drawback is related with the ordering of the variables analyzed, as a different order could have resulted in different estimated structural parameters. On another note, the use of indicators based on consumer opinion and business tendency surveys impose important limitations as well. Surveys have pros and inherent cons. Although they provide a forecast of movements in economic activity and are available rapidly, there are questions concerning the construction and wording of the

surveys which may not be clear to respondents, the response rate to the questionnaires and the sample of respondents itself. Besides, the results may be exposed to sampling and non-sampling errors.

Directions of future research include employing a similar methodology to explore the relation between confidence, government revenues and output or other relevant macroeconomic variables, such as consumption. Also, it is particularly relevant to explore the non-recursive identification used in Bachmann and Sims (2011) and estimate the impact of fiscal policy in confidence in periods of expansion and recession in Portugal. In an international level, extending this analysis to a number of comparable European countries would also be interesting.

6. References

- Afonso, António, and Ricardo M. Sousa. 2012. "The Macroeconomic Effects of Fiscal Policy." *Applied Economics*, 44(34): 4439-4454.
- Bachmann, Rüdiger, and Eric R. Sims. 2011. "Confidence and the Transmission of Government Spending Shocks." *NBER Working Paper* 17063.
- Barsky, Robert B., and Eric R. Sims. 2009. "Information, Animal Spirits, and the Meaning of Innovations in Consumer Confidence." *NBER Working Paper* 15049.
- Blanchard, Olivier, and Roberto Perotti. 2002. "An empirical characterization of the dynamic effects of changes in Government Spending and Taxes on Output." *Quarterly Journal of Economics*, 117(4): 1329-1368.
- Bodo, Giorgio, Roberto Golinelli, and Giuseppe Parigi. 2000. "Forecasting Industrial Production in the Euro Area." *Empirical Economics*, 25(4): 541-561.
- Bram, Jason, and Sydney C. Ludvigson. 1998. "Does Consumer Confidence Forecast Household Expenditure? A Sentiment Index Horse Race." *Economic Policy Review*, 4(2): 59-79.

- Caleiro, António, and Esmeralda A. Ramalho. 2009. "Consumer Confidence in Portugal: what does it really matter." *CEFAGE-UE Working Paper* 2009/13.
- Carroll, Christopher D., Jeffrey C. Fuhrer, and David W. Wilcox. 1994. "Does Consumer Sentiment Forecast Household Spending? If So, Why?" *American Economic Review*, 84(5): 1397-1408.
- Fatás, Antonio, and Ilian Mihov. 2001. "The Effects of Fiscal Policy on Consumption and Employment: Theory and Evidence." *CEPR Discussion Paper* 2760.
- Gordon, David B., and Eric M. Leeper. 2005. "Are Countercyclical Fiscal Policies Counterproductive." *NBER Working Paper* 11869.
- Gurnani, Shaan. 2016. "The Financial Crisis in Portugal: Austerity in Perspective." *The Libraries Student Research Prize Paper* 9.
- Keynes, John. 1936. *The General Theory of Employment, Interest and Money*. London: Palgrave Macmillan.
- Konstantinou, Panagiotis, and Athanasios Tagkalakis. 2010. "Boosting Confidence: is there a role for Fiscal Policy?" *Bank of Greece Working Paper* 113.
- Matusaka, John, and Argia Sbordone. 1995. "Consumer Confidence and Economic Fluctuations." *Economic Inquiry*, 33(2): 296-318.
- McNabb, Robert, and Karl Taylor. 2007. "Business Cycles and the Role of Confidence: Evidence for Europe." *Oxford Bulletin of Economics and Statistics*, 69(2): 185-208.
- Mendicino, Caterina, and Maria T. Punzi. 2013. "Confidence and economic activity: the case of Portugal." Banco de Portugal, *Economic Bulletin – Winter*, 19(4): 43-53.
- Mountford, Andrew, and Harald Uhlig. 2008. "What are the Effects of Fiscal Policy Shocks?" *NBER Working Paper* 14551.
- Ludvigson, Sydney C. 2004. "Consumer Confidence and Consumer Spending." *Journal of Economic Perspectives*, 18(2): 29-50.

- Pereira, Manuel C., and Lara Wemans. 2013. "Output Effects of Fiscal Policy in Portugal: a structural VAR Approach." Banco de Portugal, *Economic Bulletin – Spring*, 19(1): 7-34.
- Perotti, Roberto. 2002. "Estimating the Effects of Fiscal Policy in OECD countries." *ECB Working Paper* 168.
- Spilimbergo, Antonio, Steve Symansky, Olivier Blanchard, and Carlo Cottarelli. 2008. "Fiscal policy for the Crisis." *IMF Staff Position Note* 2008/01.
- Stock, James. H., and Mark W. Watson. 2001. "Vector Autoregressions." *Journal of Economic Perspectives*, 15(4): 101-115.
- Tagkalakis, Athanasios. 2008. "The Effects of Fiscal Policy on Consumption in Recessions and Expansions." *Journal of Public Economics*, 92(5-6): 1486-1508.
- OECD. 2016. "Consumer opinion surveys – Data and Methods". Accessed November 25. <http://stats.oecd.org/mei/default.asp?lang=e&subject=7>
- OECD. 2016. "Business tendency surveys – Data and Methods". Accessed November 25. <http://stats.oecd.org/mei/default.asp?lang=e&subject=6>