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Article

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Intereconomics

Suggested Citation: Döring, Thomas; Oehmke, Ruven D. (2019) : About the Economic Psychology of Public Debt, Intereconomics, ISSN 1613-964X, Springer, Heidelberg, Vol. 54, Iss. 5, pp. 297-303, <https://doi.org/10.1007/s10272-019-0842-z>

This Version is available at:

<https://hdl.handle.net/10419/213234>

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Thomas Döring and Ruven D. Oehmke

About the Economic Psychology of Public Debt

Among the various means of public financing, public debt is a significant as well as controversial instrument. Previous economic research has mainly focused on different politico-economic explanations for the continuous increase in public debt in many countries during the last decades. However, economic research has not conclusively answered why the excessive increase in public debt is so rarely challenged by citizens and politicians despite the resulting budgetary burden. The answer to this question lies to some degree in economic psychology and the findings of behavioural economics.

From an economic point of view, public debt is a significant yet problematic instrument when it comes to generating government income. This insight is not solely based on the European government debt crisis, which followed the latest global economic and financial crisis in 2008/2009. Government debt crises are actually a recurring phenomenon throughout history affecting countries worldwide.¹ Looking only at crises, it is easy to overlook the fact that public financing through borrowing is daily business. In fact, public debt is an attractive way to expand government activities. It allows policymakers to increase the fiscal scope for government spending beyond the current revenue generated by taxes and charges. Nevertheless, repayments and interest payments, which inevitably accompany government borrowing, can only be covered in the long run by increased tax revenues, especially if prolongation is not an option anymore. Therefore, public finance does not classify public debt as definitive government revenue such as taxes, fees and other non-tax revenue, but as a way of postponing taxation.

Table 1 demonstrates the development of the public debt ratio for selected (industrial) countries. The public debt ratio increased in most countries over the course of more than 20 years (1995–2017). Only a few countries (e.g. Denmark and Sweden) show a lower public debt ratio in 2017 compared to 1995. Other countries like Belgium or the Netherlands have managed to decrease their public debt ratio only temporarily –

it increased again since 2005. Furthermore, around half of the countries have a public debt ratio that is just below or clearly above the 100% mark (e.g. Belgium, France, Greece, Italy, Japan, Portugal, Spain and the US).

The following aims to provide an economic explanation for the usage of public debt. For this purpose, we will start with a brief description of the most prominent economic explanations for the development in public debt. We will also consider the phenomenon of public debt by applying psychological insights and more recent theories in the field of behavioural economics. Subsequently, inferences will be drawn about possible measures to limit public debt.

Public debt from the public finance viewpoint

Considering the constant growth of public debt in almost every industrial country during the last four decades, it is important to explain why public debt is on the rise. There is widespread consensus in the public finance literature that the accumulation of public debt in representative democracies is especially influenced by politico-economic factors. Thus, the economic analysis of public debt focuses on the politically relevant actors (citizens, politicians).² In general, there are three politico-economic explanations that can be distinguished. The first one assumes a very evident polarisation across the political parties. According to this explanation, public debt is used by the present government as a strategic tool to restrict the financial leeway of the future government and consequently limit its political scope. Therefore, this approach is also referred to as ‘strategic debt’. It is this strategic interaction between the government and the opposition that leads to a lack of accountability for the costs caused by public debt. Simultaneously, the political decision-makers tend to compensate their limited

1 For an analysis of financial crises and government debt crises during the last eight centuries, see C.M. Reinhart, K.S. Rogoff: *This time is different: eight centuries of financial folly*, Princeton 2009.

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2 See R.M. Salsman: *The political economy of public debt*, Cheltenham and Northampton 2017, pp. 153; T. Persson, G. Tabellini: *Political economics*, Cambridge MA 2000.

scope of action through additional borrowing, which results in rising public debt over the course of time.

Another politico-economic explanation for increasing public debt considers the political process of reaching a consensus within multi-party coalitions to be a main reason for rising public debt. This approach supposes that there is barely any stimulus for the coalition partners to pay off public debt and that they are rather inclined to avoid cost saving in their own field of competence, passing this burdensome responsibility instead to other partners. This dilemma paralyses the budgetary policy of the coalition government, whereas excessive spending is funded by debt further on. Both of these politico-economic explanations for public debt can be backed up by empirical evidence from different studies. Accordingly, the public debt of OECD countries is all the higher, if the parliamentary parties are more polarised, the government's average period in office is comparatively short, the government is more likely to be voted out of office, the polarisation of the parties within a multi-party coalition increases as does the number of coalition partners within the government.³

Nevertheless, both approaches fail to provide a comprehensive explanation for public debt because they only analyse the behaviour of politicians. The question remains why citizens in democratic societies still approve of political behaviour like this instead of sanctioning the officials for it. However, a politico-economic explanation can be provided by looking at the dissolution of the 'principle of intertemporal integration'. According to Buchanan and Wagner, the dissolution of this principle stems from the cost illusion associated with public debt and leads to the emergence of common interests between the government and its citizens.⁴ In order to secure their position of power, governments in office are inclined to choose a strategy that increases spending for noticeable benefits using financing that goes unnoticed. The citizens, however, observe only the benefits of additional spending without noticing the

Table 1
Development of public debt ratio for selected countries, 1995-2017

Country	1995	2000	2005	2010	2015	2017
Austria	68	66	68	82	86	79
Belgium	131	109	95	99	106	103
Croatia	no data	33	39	53	87	78
Denmark	71	52	37	43	40	36
Finland	57	42	40	47	64	61
France	55	58	67	81	96	97
Germany	54	59	67	81	71	64
Greece	93	99	98	146	179	181
Italy	109	105	102	115	132	131
Japan	95	144	186	216	238	236
Lithuania	no data	24	18	36	43	37
Netherlands	76	54	52	59	65	57
Portugal	58	48	61	96	129	126
Sweden	70	51	48	37	44	41
Switzerland	54	58	67	47	46	43
Slovenia	17	29	26	38	83	75
Spain	63	58	42	60	100	99
United Kingdom	47	39	42	76	89	87
United States	47	60	65	95	106	108

Note: Level of public debt in relation to the respective GDP in percent.

Data Source: International Monetary Fund: Report for Selected Countries and Subjects, World Economic Outlook Database, April 2018, available online at <https://www.imf.org/external/pubs/ft/weo/2018/01/weo-data/index.aspx>.

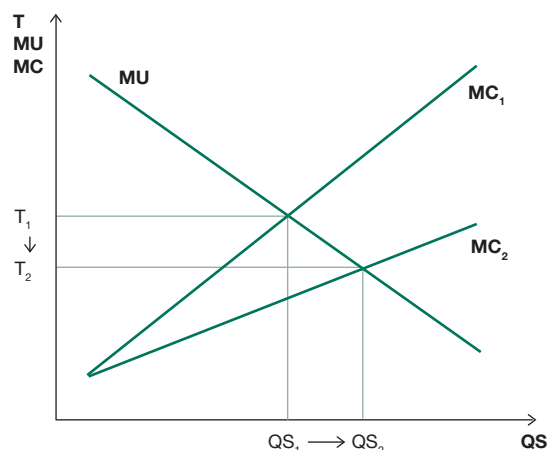
resulting financial obligations over the long term. Consequently, voters experience – rather than a tax financing of public expenditures – a so-called 'debt illusion'.

This illusion, presented in Figure 1, can be described as follows: If citizens were fully informed about the financial obligations caused by public services, the supply of public services would amount to the level of QS1 because at this amount the effective marginal cost (MC1) is equivalent to the marginal utility (MU). The cost for the supply of public services (QS1) would be fully financed by the corresponding tax level (T1). This scenario requires that the financial cost of public services is subjectively noticeable for citizens. If less noticeable means of financing (such as government borrowing) are used, citizens will fail to correctly evaluate the marginal cost and marginal utility of public services. In accordance with this distorted perception of financing costs that comes with government borrowing, citizens demand public services based on the experienced marginal cost (MC2) that is lower than the effective marginal cost (MC1). This effect gives citizens the impression that there is a lower tax level (T2) and leads them to demand a higher amount of public services (QS2) instead of the optimal amount (QS1).

3 For empirical results, see N. Roubini, J.D. Sachs: Political and economic determinants of budget deficits in the industrial democracies, in: *European Economic Review*, Vol. 33, No. 5, 1989, pp. 903-933; V. Grilli, D. Masciandaro, G. Tabellini: Political and monetary institutions and public finance policies in the industrial countries, in: *Economic Policy*, Vol. 13, No. 13, 1991, pp. 341-392; J.E. Alt, R.C. Lowry: Divided government and budget deficits, in: *American Political Science Review*, Vol. 88, No. 4, 1992, pp. 811-828; A. Alesina, G. Cohn, N. Roubini: Electoral business cycles in industrial democracies, in: *European Journal of Political Economy*, Vol. 9, No. 1, 1993, pp. 1-23; J.M. Poterba: State response to fiscal crisis, in: *Journal of Political Economy*, Vol. 102, No. 4, 1994, pp. 799-821; A. Alesina, S. Ozler, N. Roubini, P. Swagel: Political instability and economic growth, in: *Journal of Economic Growth*, Vol. 1, No. 2, 1996, pp. 189-211; A. Alesina, R. Perotti: Income distribution, political instability, and investment, in: *European Economic Review*, Vol. 40, No. 6, 1996, pp. 1203-1228.

4 See J.M. Buchanan, R.E. Wagner: *Democracies in deficit*, New York 1977; see also R.D. Tollison, R.E. Wagner: *Balanced budget, fiscal responsibility, and the constitution*, Washington DC 1980.

Figure 1
Debt illusion as result of subjective misperception of the costs of public services



Source: Authors' own illustration.

Public debt from an economic psychology perspective

It was noted early on by Günter Schmolders that the 'noticeability' of public financing instruments significantly influences the subjective experience of objective fiscal burdens.⁵ His research was motivated and influenced by Amilcare Puviani who introduced the aforementioned psychological effect to public finance using the broader term 'fiscal illusion' in the beginning of the last century.⁶ Moreover, it can be assumed that the considerations of Paul Szende as well as Edgar Schorer made a relevant impact on his economic psychological research.⁷ Both pointed out that public finance theories should be based on a psychological foundation. Within the field of public finance, Schmolder's early considerations received very little attention for decades. But as interest in behavioural economic analyses increased, economic psychology approaches regarding the mechanisms of public financing began to attract more attention.⁸ The variety of publications on taxation psychology has significantly increased, whereas articles dealing

with the psychological aspects of public debt remain a rarity. This is all the more astonishing as private debt is covered by a wide range of psychological studies.⁹ Private debt behaviour is described as a sub-category of intertemporal decision-making behaviour that differs significantly from rational behaviour according to economic theory. Therefore, the following considerations will break new ground to some extent.

According to the theory of psychological reactance, people react to punitive stimuli through avoidance behaviour. The heavier the fiscal burden related to public financing instruments that is consciously perceived by the involved actors ('noticeability'), the higher the punitive stimulus. The original theory of psychological reactance attempts to explain how people respond to a subjectively experienced loss (unexpectedly) of behavioural freedom. Reactance describes the response to this restriction and can be understood as an attempt to regain the lost behavioural freedom.¹⁰ By extending the theory, the restriction of monetary resources can be counted as a loss of behavioural freedom. In the case of consciously perceived taxation (e.g. income tax), reactance can lead to legal tax avoidance (e.g. moving the tax base abroad) as well as illegal tax evasion. The phenomenon of 'loss aversion', as described within the prospect theory by Daniel Kahneman and Amos Tversky, enhances the effects of the punitive stimulus. According to their research, people experienced losses twice as powerful as equivalent gains.¹¹

Degree of noticeability and lacking learning processes

With that in mind, the different public financing instruments can be sorted by their degree of noticeability and the corresponding potential for reactance. Consequently, both of these characteristics are rated high for direct taxes compared to indirect taxes (e.g. value added tax, specific excise duties). In the latter, taxes are already included in the price and most taxpayers do not consider taxes a relevant determinant for prices in everyday life. From this perspective, public debt is

5 See G. Schmolders: *Das Irrationale in der öffentlichen Finanzwirtschaft*, Hamburg 1960.

6 See A. Puviani: *Die Illusion in der Finanzwirtschaft*, in: *Finanzwissenschaftliche Forschungsarbeiten*, Neue Folge 22 (1903/1960), pp. 1-53.

7 See P. Szende: *Steuerpsychologie*, in: *Zeitschrift für die gesamte Staatswissenschaft*, Vol. 93, 1932, pp. 427-464; E. Schorer: *Allgemeine Steuerpsychologie*, in: *FinanzArchiv*, Vol. 9, 1947, pp. 338-368.

8 For the influence of behavioural economics on public finance, see W.J. Congdon, J.R. Kling, S. Mullainathan: *Policy and choice: public finance through the lens of behavioral economic*, Washington DC 2011; S. Mullainathan, J. Schwartzstein, W.J. Congdon: *A reduced-form approach of behavioral public finance*, in: *Annual Review of Economics*, Vol. 4, 2012, pp. 17.1-17.30; B.D. Bernheim, A. Rangel: *Behavioral public economics*, in: P. Diamond, H. Vartiainen (eds): *Economic institutions and behavioral economics*, Princeton 2007, pp. 7-77.

9 See for example, S.E.G. Lea, P. Webley, R.M. Levine: *The economic psychology of consumer debt*, in: *Journal of Economic Psychology*, Vol. 14, 1993, pp. 85-119; B. Stone, R.V. Maury: *Indicators of personal financial debt using a multi-disciplinary behavioral model*, in: *Journal of Economic Psychology*, Vol. 27, 2006, pp. 543-556; R. Ranyard, L. Hinkley, J. Williamson, S. McHugh: *The role of mental accounting in consumer credit decision processes*, in: *Journal of Economic Psychology*, Vol. 27, 2006, pp. 571-588.

10 For the fundamentals of psychological reactance theory see, C.B. Wortmann, J.W. Brehm: *Responses to uncontrollable outcomes*, in: L. Berkowitz (ed.): *Advances in experimental social psychology*, Vol. 8, New York and London 1975, pp. 277-336; M.L. Snyder, R.A. Wicklund: *Prior exercise of freedom and reactance*, in: *Journal of Experimental and Social Psychology*, Vol. 12, 1976, pp. 120-130.

11 See D. Kahneman, A. Tversky: *Prospect theory*, in: *Econometrica*, Vol. 47, No. 2, 1979, pp. 263-291; see also D. Kahneman, A. Tversky: *Advances in prospect theory*, in: *Journal of Risk and Uncertainty*, Vol. 5, No. 4, 1992, pp. 297-323.

clearly the least noticeable instrument of public financing i.e. it normally does not cause immediate resistance from citizens. This does not imply that there is no resistance to public debt. However, government bonds are usually traded in markets so that people are free to decide if they want to purchase government bonds or not. Thus (and in contrast to taxation), there is no immediate punitive stimulus causing reactant behaviour. Therefore, government borrowing comes closest to public fees because both means of public financing are built on the economic equivalence principle (*quid pro quo*). Nevertheless, selling government bonds is not the same as charging public fees because it comes along with the aforementioned 'postponed taxation', meaning that it causes future financial burdens that are not presently experienced. Resistance against public debt, similar to the resistance of taxation, can arise if the "psychological borders of public debt" are crossed. According to Otto Ganderberger, these psychological borders are crossed if the public believes that public debt is at a level that threatens the ordered continuance of society.¹² The private willingness to purchase additional government bonds decreases drastically in such situations.

Putting aside this exceptional case, it can be concluded that the debt illusion and misperception of public service expenses endures as long as citizens believe that taxation costs them personally more than government borrowing.¹³ In the event of a sustained debt illusion, it has to be assumed that the general public does not learn about the economic effects of public debt. Therefore, "the illusion hypothesis [...] implies the absence of learning".¹⁴ Furthermore, political problems like enormous public debt only shape public opinion if people are aware of those problems and consider them relevant. Consequently, the subjective expectations and judgments play a major role in addition to the objective circumstances. Moreover, the individual subjective perception of a situation determines peoples' attitudes and voting preferences. As a consequence, growing awareness concerning the present impact caused by public debt (e.g. tax-funded expenses for current interest payments) should increase the public's willingness to strictly regulate politicians' borrowing behaviour.

Rational ignorance and the influence of tax compliance

Whereas liability of taxation in most cases is experienced directly by citizens in terms of a loss of their own assets, spe-

cific knowledge is required to be sufficiently informed about the impact of public debt. This required knowledge includes information about the dimension of future debt burdens. Moreover, people need to know when the burden will be compensated through tax increases or expenditure-cutting as well as how severe these interventions will be. Acquiring sufficient information is toilsome work requiring extensive research and analysis. This leads people to choose ignorance over sufficient information even if they have the cognitive capability to obtain it. Consequently, the debt illusion would be the result of peoples' 'rational ignorance'. For this assumption to be true, peoples' attitudes towards public debt should remain more or less the same over time. In contrast, representative surveys for Germany report that attitudes towards public debt have changed significantly between 1970 and 1997.¹⁵ Moreover, the same surveys show that public debt, tax increases and expenditure-cutting are judged negatively. However, this inconsistency cannot disprove the debt illusion. Looking at the situation in the US, we also observe similar survey findings. Indeed, Wallace Oates concludes the following in his well-known meta-analysis of empirical studies regarding the different forms of fiscal illusion: "Although all [...] cases entail plausible illusion hypotheses, none of them has very compelling empirical support".¹⁶ Contrarily, Guido Tabellini and Alberto Alesina point out that the survey findings for the US demonstrate the same pattern as the findings for Germany, i.e. if the majority calls for a reduction in public debt, the majority also opposes tax increases and expenditure-cutting.¹⁷ These findings, however, can be interpreted as an indication of a sustained debt illusion.¹⁸

From the perspective of economic psychology, there is a third determinant in addition to low reactance and lacking learning processes that correlates significantly with the level of public debt. This third determinant is the citizens' level of tax compliance which varies greatly from country to country. Tax compliance is defined as the general attitude of tax payers towards the fulfillment or non-fulfilment of their tax liabilities. Surveys of tax payers as well as experiments reveal that tax compliance is positively related to perceived tax fairness and a positive attitude towards the overall taxation system. Perceived fairness leads tax payers to view taxation as more legitimate

¹² See O. Ganderberger: Grenzen der Staatsverschuldung, Beihefte der Konjunkturpolitik, No. 27, 1980, pp. 9-18.

¹³ See also B.A. Abrams, W.R. Dougan: The effects of constitutional restraints on government spending, in: Public Choice, Vol. 49, No. 2, 1986, pp. 101-116.

¹⁴ O. Ganderberger: On Government Borrowing and False Political Feedback, Paper presented at the 40th Congress of IIPF, Innsbruck 1984, p. 94.

¹⁵ For more details, see T. Döring: Lässt sich ein Abbau der öffentlichen Verschuldung politökonomisch erklären?, in: Zeitschrift für Wirtschaftspolitik, Vol. 51, No. 2, 2002, pp. 142-171.

¹⁶ W.E. Oates: On the nature and measurement of fiscal illusion – a survey, in: G. Brennan, B.S. Grewel, P. Groenwegen (eds.): Taxation and fiscal federalism, Sydney 1988, pp. 65-82.

¹⁷ See G. Tabellini, A. Alesina: Voting on the budget, in: American Economic Review, Vol. 80, pp. 37-49.

¹⁸ For this interpretation of the data, see S. Weltring: Staatsverschuldung als Finanzierungsinstrument des deutschen Vereinigungsprozesses, Frankfurt a. M. 1997, p. 218.

and makes them more loyal towards their state.¹⁹ In this way, perceived fairness strengthens the loyalty and the emotional bond between taxpayers and their government. Thus, taxpayers become more willing to help finance necessary public expenses during financial crises through increased taxes in order to avoid public debt. In this context, the term ‘psychological tax treaty’ is used to describe the nature of the relationship between tax payers and their government.²⁰ Historically speaking, tax compliance and the level of trust in the political system is closely connected to public debt behaviour, as an analysis of international comparative studies about Europe shows.²¹ Thus, countries like Switzerland, Germany, Austria, the UK, the Netherlands or the Scandinavian countries are characterised by comparatively moderate fiscal policies. On the contrary, countries like Spain, France, Belgium, Italy or Greece are characterised by lower tax compliance together with a stronger tendency toward excessive government borrowing. Nevertheless, it would be false to conclude that the first group of countries is immune to the debt illusion. After all, they also use government borrowing to finance public expenses, albeit to a much lesser extent (see again Table 1).

Variants of debt illusion

There is not one debt illusion but different variants of it. It is possible to distinguish between these different variants depending on the psychological cause for the debt illusion. David Ricardo already pointed out that people tend to be (almost) unaware of future tax liabilities for repayments and interest payments that come along with government borrowing.²² Citizens who entertain this illusion consider themselves richer than they are if the government uses debt financing instead of tax financing (‘Ricardo Illusion’). This is because they ignore how government borrowing causes future tax liabilities to cover repayments and interest payments and therefore will re-

duce their future net income. In contrast to a rational decision-making process, people fail to consider future losses and do not perform a comprehensive cost-benefit analysis. From the viewpoint of economic psychology, this could be interpreted to imply that people file the benefits of government borrowing (i.e. temporarily lower tax rates) and its future disadvantages (i.e. higher tax rates to cover repayments and interest payments) in different ‘mental accounts’ that are not directly interrelated. Compared to public debt, disadvantages of taxation are realised immediately whereas their benefits (i.e. additional public services) are uncertain. This process, referred to as so-called mental accounting, has been highlighted by Richard Thaler with regard to the consumer behaviour of private households.²³ Nevertheless, mental accounting can also be applied to behavior with regard to public debt because the concept simply reflects the universal tendency of humans to deal with cognitive tasks in stages even if this contradicts rationality.

This irrationality of debt-based public financing causes people to behave less rationally. This is similar to Puviani’s reasoning that the debt illusion is not solely caused by a lack of awareness of future tax burdens related to public debt. He points out that public debt increases the assets of creditors and therefore comes with gains, whereas tax financing comes with losses in income and assets. Certainly, the public understands well enough that the increased assets come with future repayments and interest payments. Nevertheless, they prefer control over temporarily increased assets rather than taxation i.e. they entertain an illusion of wealth (‘Puviani Illusion’). From a psychological viewpoint, this variant of debt illusion can be explained by the endowment effect as well as the aforementioned loss aversion. The endowment effect describes the human behaviour of ascribing subjectively higher values to objects merely because they are owned. For public debt, this means that present increases in assets and future financial burdens related to public debt are evaluated asymmetrically. In combination, the endowment effect and loss aversion cause a behavioural tendency toward debt-based public financing.

Cognitive limitations and the threshold effect

Both variants of debt illusion are interpreted to be caused by misperception that stems from cognitive limitations. Thus, citizens systematically misperceive the burden related to public debt as well as the gain from debt-financed public services and therefore tend to persistently underestimate the net fiscal burden related to public debt. The discrepancy between the real and experienced burden of public debt suggests a perceptual problem (different to taxation where such a discrepan-

19 See F.A. Cowell: Tax evasion and inequity, in: *Journal of Economic Psychology*, Vol. 13, 1992, pp. 521-543; H.S.J. Robben, P. Webley, H. Elffers, D.J. Hessing: Decision frames, opportunity and tax evasion, in: *Journal of Economic Behavior and Organization*, Vol. 4, 1991, pp. 353-361; for the determinants of tax compliance see B. Torgler: Tax morale and institutions, WWZ-Discussion Paper 02-07, Basel 2003.

20 L.P. Feld, B.S. Frey: Tax compliance as the result of a psychological tax contract, in: *Law & Policy*, Vol. 29, No. 1, 2007, pp. 102-120.

21 Regarding the experiences of financial crisis and government debt crisis in Europe in the recent past, see H. Zimmermann: The deep roots of the government debt crisis, in: *The Journal of Financial Perspectives*, Vol. 3, No. 1, 2015, pp. 33-42, asserts: “Historically, it has been found that countries in which the relationship between the government and its citizens is good are able to finance themselves during difficult times comparatively well through taxes, whereas weaker or more authoritarian states have to resort to debt financing”. And with respect to the time stability of this relationship he states additionally, “that tax mentality and the concomitant borrowing habits are long-lasting attitudes that only change over a very long time period”.

22 D. Ricardo: *On the principles of political economy and taxation*, 3rd edition, London 1821; see also N. Churchman: *David Ricardo on public debt*, Houndmills 2001.

23 See R.H. Thaler: Mental accounting and consumer choice, in: *Marketing Science*, Vol. 4, No. 3, 1985, pp. 199-214.

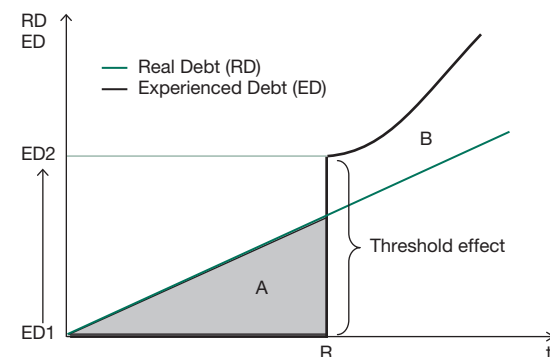
cy does not exist). This observation resembles the economic psychology view of the relationship between the depreciation of money caused by inflation and the so-called money illusion.²⁴ The perceptual pattern as depicted in Figure 2 can be derived by applying the insights from studies about the subjective anticipation of inflation-induced burdens.

Citizens may therefore anticipate the future fiscal burdens that come with continuous government borrowing. According to the Weber-Fechner law,²⁵ it should not be assumed that the real (statistically measured) level of public debt (RD) and the experienced (subjectively perceived) level of public debt (ED) – including consequential future payments – correspond with each other. In fact, they rather tend to differ from each other. The psychological phenomenon of debt illusion emerges if the real level of public debt remains practically unnoticed. The actual extent of the illusion is represented by the grey area (A) beneath the green line in Figure 2. In this case, the experienced level of public debt (ED1) stays constantly low even though the real level of public debt (RD) is constantly on the rise. Only if the real level of public debt rises above a certain threshold (R) will the experienced level of public debt increase rapidly (increase from ED1 to ED2). Henceforward, the experienced level of public debt grows disproportionately strong and can even lead to a panicky government debt crisis. The potential extent of such a crisis is represented by the white area (B) in Figure 2. This threshold effect may be caused by increased (critical) media reporting regarding public debt, strongly (negative) reactions to the reached level of public debt on capital markets or political exploitation of the issue for campaigning purposes. This can result in fundamental attitude changes among politicians and citizens that lead to a budgetary policy of ‘zero-debt’ as it happened on a federal level in Germany in the recent past. Nevertheless, there are some cases in which government borrowing is a reasonable solution from a public finance point of view. A budgetary policy of ‘zero-debt’ fails to appropriately take this option into account.

Debt illusion and the political actors' loss of control

Besides people's subjective perceptual errors regarding public debt, it should be mentioned that there are further psychological determinants which can cause political actors to lose control over public debt. First, habits can cause past governance to have a negative effect on present decision-making

Figure 2
Real debt, experienced debt, threshold effect, and debt illusion



Source: Authors' own illustration.

behaviour. Applied to public debt, this means that (successful) government borrowing to overcome financial constraints in the past has led politicians to the careless assumption that public borrowing can continue to be used without any concerns. This decision-making behaviour is described by Dieter Dörner as ‘methodism’.²⁶ It always occurs if people develop a system of thought and believe that it is able to solve all future problems. This is especially the case if the method has proven itself for a while. Nevertheless, it can lead people to overestimate the validity of their method.

With respect to psychological literature, political actors have a tendency towards such overestimation when it comes to the macroeconomic effects of public debt.²⁷ Politicians carelessly overestimate their locus of control believing they can solve economic problems through government borrowing (the so-called control illusion). A prominent example of such a control illusion is Japan. For years, Japan has tried to overcome economic stagnation by increasing public expenses through government borrowing. This fiscal policy of permanent deficit-spending failed to produce the desired results but caused the Japanese public debt ratio to hit new record highs.

Additionally, such an overestimation of the macroeconomic effects of public debt might be encouraged by universal perceptual biases. From a psychological point of view, there are a number of such biases that can help to explain this phenomenon further. First, there is the overconfidence bias i.e. the human tendency to overestimate one's own knowledge, skills and abilities. Moreover, the selective interpretation of information in accordance with one's existing preferences might be another reason for the overestimation of public debt's positive economic effects, i.e. the self-serving bias. Furthermore, it

²⁴ For an overview of research findings with respect to the divergence of real and experienced devaluation of money, see T. Döring: *Öffentliche Finanzen und Verhaltensökonomik*, Wiesbaden 2015, p. 299.

²⁵ For more details regarding the Weber-Fechner-Law and its application in the field of economics, see H.W. Sinn: Weber's Law and the biological evolution of risk preferences, in: *The Geneva Papers on Risk and Insurance – Theory*, Vol. 28, 2003, pp. 87-100; P.J.R. Mourao: The Weber-Fechner Law and public expenditures impact to the win-margins at parliamentary elections, in: *Prague Economic Papers*, Vol. 3, 2012, pp. 291-308.

²⁶ See D. Dörner: *The logic of failure*, Cambridge MA 1996.

²⁷ See G. Wiswede: *Einführung in die Wirtschaftspsychologie*, 5th edition, Munich 2012, p. 182.

cannot be ruled out that overproportioned weight is ascribed to debt-based financing of public expenses because it is assumed that the positive economic effects of it are certain, i.e. the certainty effect. In contrast to this overestimation, the political actors tend to underestimate the negative effects of increased public debt in the form of budget crowding-out. Both sorts of misjudgment point to a cognitive loss of control – also described as ‘learned carelessness’.²⁸ Although this term was originally used to explain the mental effects of repeatedly successful tax evasion, it can also be used to describe the habitual effects of public borrowing behaviour.

Similar to the motives behind the over-indebtedness of private households, increasing public debt can be interpreted as the collective disability to postpone the gratification of needs. In behavioural research, this phenomenon is referred to as either ‘melioration’ or ‘procrastination’ and is understood to be the cause for the time-inconsistency of preferences. Thus, politicians and citizens can easily favour the future limitations of debt-financing but fail to adequately anticipate that their plan might be compromised by unexpected changes (e.g. further expenditure proposals) in the future. Richard Thaler and Cass Sunstein describe this as a mixture of temptation and thoughtlessness and call such behaviour dynamically inconsistent.²⁹ This myopic effect is enhanced because the expected long-term costs of public debt are significantly discounted. Furthermore, peoples’ remaining lifetime plays a significant role in this behaviour. Thus, the shorter the remaining lifetime is, the stronger the tendency to focus on today instead of tomorrow, the consequence being that countries characterised by a high average population age usually demonstrate a higher level of public debt. Regarding the reduction of public debt, the history of debt policy is characterised by endless procrastination which can only be overcome by appropriate mechanisms of self-discipline.³⁰ In this light, the recently established balanced-budget amendment in Germany can be interpreted as a positive example of collective willingness to self-discipline.

Some implications for fiscal policy

Based on economic psychology observations, some conclusions can be drawn. First, citizens should be sufficiently educated about the long-term economic effects of public debt in order to develop a deeper understanding of present and future consequences. This information has to be provided on a regular basis and must be easily understood, framing the topic

negatively by emphasising the extent of losses associated with public debt. E.g. it could be more effective to show the level of public debt per capita on citizens’ yearly tax assessments. Furthermore, politicians could be obliged to inform citizens about the amount of debt that was used to finance a certain public service if they make use of this service. Additionally, indicators for a sustainable fiscal policy could be developed that demonstrate the expected burdens caused by public debt for present and future generations. In this regard, it does not matter which methodological basis these indicators are built upon.³¹ It is much more important that the indicators are communicated on a regular basis so that the public can offer sufficient feedback to induce the necessary learning processes.

While informing citizens about the consequences of public debt is fundamental to the reduction of government borrowing, it will most likely be insufficient to fundamentally change the borrowing behaviour established over years and decades if it is not supported by other measures. From an economic psychology point of view, additional measures should target melioration and procrastination within the context of public debt. For this reason, the political decision-making architecture needs to be changed through ‘nudges’ to help politicians (and citizens) resist the temptation of public debt and overcome their lack of self-control when it comes to debt-financing. An example for a relatively hard nudge is a constitutionally embedded balanced-budget rule that encourages positive decision-making behaviour regarding budgetary policy. Such an institutional commitment helps political actors to fight the cognitive loss of control. These strategies have been pursued in Switzerland and Germany where balanced-budget amendments were implemented.

Finally, compliance with debt restrictions requires measures for budgetary consolidation. According to Günter Schmolders, economic psychology studies reveal that expenditure-cutting and tax increases are functionally equivalent instruments for budget consolidation that differ from each other regarding the levels of reactance and loss aversion associated with them.³² In accordance with prospect theory, forgoing a gain (cutting public expenses) is considered less ‘painful’ by citizens compared to a loss of their own assets (tax increase). Certainly, the citizens’ approval of expenditure-cutting is also dependent on the level of its noticeability and the individual citizen’s involvement. Nevertheless, cutting public expenses should be preferred over tax increases when it comes to achieving a balanced out budget.

28 See D. Frey, S. Schulz-Hardt: Eine Theorie der gelernten Sorglosigkeit, in: H. Mandl (ed.): Bericht über den 40. Kongress der Deutschen Gesellschaft für Psychologie, Göttingen 1997, pp. 604–611.

29 See R.H. Thaler, C.R. Sunstein: Nudge, New York 2009.

30 For the relevance of appropriate mechanisms of self-discipline in order to avoid a procrastination behaviour see also D. Ariely, K. Wertenbroch: Procrastination, deadlines, and performance, in: Psychological Science, Vol. 13, No. 13, 2002, pp. 219–224.

31 For different methodological approaches to calculate public budget sustainability gaps, see, for example, O. Blanchard, J.-C. Chouaraqui, R.P. Hagemann, N. Startor: The sustainability of fiscal policy, OECD Economic Studies, No. 15, 1990, pp. 7–36; A.J. Auerbach, J. Gokhale, L.J. Kotlikoff: Generational accounting, in: Journal of Economic Perspectives, Vol. 8, No. 1, 1994, pp. 73–94.

32 See G. Schmolders: Finanz- und Steuerpsychologie, Hamburg 1970.