to be estimated for the different federal entities. Due to lack of data, for the subnational levels this may require some less than perfect but workable technical conventions, especially for calculating and distributing depreciation between subnational governments. However, the German council of economic experts in his Golden Rule proposal recommended merging financial accounts and national accounts as a pragmatic solution in the absence of dual accounting. Values for gross investment could be taken from the financial accounts and values for depreciation from the national accounts. Depreciation could then be distributed to the different federal states according to its share in gross investment (SVR 2007: 77). If the technical difficulties of estimating depreciation are assessed to be overwhelming, as an alternative, a certain percentage of gross public investment, e.g. in the range of 20 per cent to 50 per cent, could be used as a proxy of net investment.

After all, one should not exaggerate the conceptual and technical problems of implementing the Golden Rule. It should be kept in mind that the current fiscal framework in the EU relies to a large extent on complex non-observable concepts that are constantly under revision like the output gap and the cyclically adjusted budget balance (Barbiero and Darvas 2014: 10). If despite all their shortcomings these concepts are accepted as workable there is no reason to be more critical when it comes to the operationalization of the Golden Rule. After all, it is certainly technically easer to implement and leads to more accurate and stable results. This was also decidedly the position of the German council of economic experts when defending his concept for the Golden Rule:

> “Despite these limitations it would be exaggerated to completely discard the Golden Rule with recourse to the inconveniences of reality. Investment related borrowing may meet the requirements of the Golden Rule but in an imperfect manner so that a really convincing concept cannot be realized in its pure form. However, a complete ban of investment related borrowing cannot even be underpinned by a theoretically plausible argument.” (SVR 2007: 80; author’s translation)

3.6 Conclusion: A pragmatic proposal for a European Golden Investment Rule

According to what has been presented in the previous section, a Golden Rule for public investment should be introduced in Europe. As a pragmatic first step this Golden Rule should apply for government fixed capital formation as defined in the national accounts with small modifications: Military spending on weapons systems should not count as investment whereas public investment grants to firms or non-profit organisations should be counted. The rule should apply to net investment, i.e. depreciation should be deducted for the rule to measure properly increases in the net public capital stock.

The Golden Rule can then be applied within the current fiscal framework of the SGP and the fiscal compact by deducting net public investment as defined above from member states' relevant deficit measures, i.e. from the government deficit under the corrective arm and the structural deficit under the preventive arm of the pact and the fiscal compact. In effect, this means that the threshold for an excessive deficit as well as the medium term budgetary objective would be increased by the amount of net public investment. In order to prevent a conflict between the Golden Rule of public investment and the goal of stabilizing public debt below 60 per cent of GDP an upper limit for deductible net investment spending could be set at 1 or 1.5 per cent of GDP.[4] The limit might not be set as a threshold above which all net investment will be fully relevant for the public deficit but rather as a limit to the percentage of net investment that is deductible from the deficit measures in order to provide incentives for public investment as a whole and prevent the category as a whole from cuts. This may seem like a rather academic question given the fact that most member states' net investment was typically below 1.5 per cent of GDP even before the crisis (see table 2). It might, however, gain relevance if a gross definition of public investment would have to be used for the Golden Rule or if additional expenditure categories would be classified as public investment.

[4] Barbiero and Darvas (2014: 10) propose the introduction of an asymmetric Golden Rule in order to prevent excessive incentives for public investment and deficits. In recession, member states would be allowed to apply the Golden Rule by deducting public investment from the deficit measures, whereas in good times the standard SGP procedure is applied. However, this would raise difficult questions as to the timing of business cycles and might destabilize public investment over time.

Table 2: net government investment (ESA 2010), budget balance, structural balance and MTO in the EU in per cent of GDP in 2015 (EU Commission estimate)

	net investment			budget balance (2015)		MTO
	Average 1995-2007	2015	difference	headline	structural	
European Union (28 countries)	**0.7** [1]	**0.3** [2]	**-0.4**	**-2.6**	**-1.7**	**-0.3** [3]
Euro area (19 countries)	**0.7** [4]	**-0.1** [5]	**-0.7**	**-2.2**	**-1.0**	**-0.2** [6]
Belgium	0.0	-0.3	-0.3	-2.6	-2.1	0.75
Bulgaria	1.2	3.0	2.2	-3.0	-2.7	-0.5
Czech Republic	-0.4	-0.3	-0.5	-2.0	-1.7	-1
Denmark	-0.1	0.6	0.6	-2.8	-1.8	-0.5
Germany	0.0	0.0	0.0	0.2	0.7	-0.5
Estonia	2.9	2.2	-0.8	-0.6	-0.8	0
Ireland	1.6	0.0	-1.7	-2.9	-3.4	0
Greece	2.3	-0.5	-2.8	1.1	1.7	
Spain	1.9	-0.5	-2.4	-4.5	-2.3	0
France	0.8	0.1	-0.3	-4.1	-2.6	0
Croatia		1.7		-5.5	-4.3	
Italy	0.5	-0.5	-1.0	-2.6	-0.6	0
Cyprus	2.7	0.5	-2.2	-3.0	-1.4	
Latvia	-2.6	0.6	3.6	-1.1	-1.6	-1.0
Lithuania				-1.4	-1.7	-1.0
Luxembourg	2.4	1.7	-1.0	-0.4	0.4	0.5
Hungary	-0.5	1.2	1.4	-2.7	-2.6	-1.7
Malta	1.9	1.0	-1.0	-2.0	-2.4	0
Netherlands	0.9	0.2	-0.6	-2.2	-0.9	-0.5
Austria	0.5	0.3	-0.2	-2.0	-1.0	-0.45
Poland	0.5	1.8	1.1	-2.9	-2.7	-1.0
Portugal	2.2	-1.2	-3.2	-3.2	-1.7	-0.5
Romania	2.2	2.5	0.4	-1.5	-1.2	-1.0
Slovenia	1.7	2.5	0.5	-2.9	-2.2	0
Slovakia	-0.1	-0.4	-0.1	-2.8	-2.0	-0.5
Finland	0.7	0.5	-0.1	-2.5	-1.0	-0.5
Sweden	1.0	1.4	0.3	-1.6	-1.0	-1.0
United Kingdom	0.8	1.1	0.0	-4.6	-4.6	

1) 26 countries: no data for Croatia and Lituania;
2) 27 countries: no data for Lituania
3) Weighted average of available data
4) 17 countries: no data for Croatia and Lithuania;
5) 18 countries: no data for Lithuania
6) weighted average of available data

Source: European Commission (2015a; 2013b and 2014c); author’s calculations.

Conceptual advantages apart, the focus on net investment has the further advantage of providing a strong incentive for those governments that are currently providing negative net public investment, i.e. whose public capital stock is decreasing, because compared to the status quo their fiscal constraints would otherwise tighten (see table 2). Although this is a welcome incentive in the medium term, countries should in the short term be given some time to adjust their net investment.

The Commission and member states should over the medium term actively promote ways of improving the statistical measurement of public investment and of improving the government accounts, in particular as concerns the calculation of depreciation. Furthermore, research and debate should also be directed towards identifying other expenditure categories that could qualify as public investment and where applicable towards how to include them under the Golden Investment Rule.