

Research and Evaluation

Organization and Reporting of Public Financial Accounts: Insights and Policy Implications from the Singapore Budget

Chang Yee Kwan

Xiamen University Malaysia & National Chengchi University

Azad Singh Bali

National University of Singapore & Murdoch University

Mukul G. Asher

National University of Singapore

This paper analyses the Singapore government budget's organization and reporting structure, and draws lessons and policy implications for improving public financial management practices. The paper finds that Singapore's fiscal marksmanship record has been poor with consistent underestimates of revenue and overestimates of expenditure. Second, subtle divergences from international reporting standards limit the information available and constrain the budget's analytical usefulness in international comparisons. Third, current reporting conventions of the budget fail to provide an adequate representation of the government's fiscal position. Fourth, revised estimates of budgetary balances in line with international reporting standards show a considerable increase in the fiscal space available. The policy implications of these findings are discussed, as well as some reporting changes which can help improve the fiscal marksmanship record, increase public sector transparency and accountability, and facilitate better quality discourse among all stakeholders on public financial management.

Key words: *fiscal marksmanship, public financial management, fiscal space, budgetary forecasts, transparency and accountability*

Introduction

A government's annual budget statement and the accompanying documents present estimates of the public sector's available financial resources, its current and future liabilities, and its ability to meet expenditure needs in the coming financial year. Besides a key source of information about the government's fiscal position, the

annual budget also spells out the forthcoming policy agenda and realization prospects (Kioko et al. 2011). However, current reporting practices of most government's budgetary accounts often provide too little, or even hinder, understanding of public finances (Chan 2003; Prowle et al. 2012).

This is cause for concern as, besides ensuring the continued functioning of the government, the annual budgeting exercise also carries the potential to influence the economy's future allocative and redistributive outcomes. Thus,

Conflict of Interest: All authors declare they have no competing interests in any way for the work done in this paper.

accurate representation and understanding of the government's fiscal position is critical for effective policy discourse and implementation.

This paper examines the organization and reporting of Singapore's public budgetary accounts as an illustrative case to better expose these issues. Asher et al. (2015) had previously reviewed the broader historical characteristics of Singapore's public financial management. The focus here is on the accounts presented for Years of Assessment 2006 to 2016 in the *Budget Highlights* document – operating revenue and its components, total expenditure,¹ special transfers, net investment returns contribution, and the primary and overall budget balances.

Despite the country-specific focus, it should be stressed that the analytical and policy implications of the paper apply broadly to all budgetary authorities. In particular, developing economies need to be mindful of the importance of greater accuracy and integrity in their revenue and expenditure estimates, and better understanding of the implications in what is being reported.

Analytical focus on the Singapore government budget ('the budget' henceforth) has largely been on its role in facilitating economic development (Huff 1995) and, more recently, the potential for enhancing social protection, e.g. Asher et al. (2015). Expenditure on social protection in the form of social pensions and insurance has been historically low in budgetary spending allocations. However, changes to the existing ideology and practice of public financial management will be necessary to meet increasing expectations for better economic security, lower expected growth prospects, and a rapidly aging population (Asher et al. 2015).

The *Budget Highlights* forms the main basis for the fiscal policy debates which are conducted subsequent to each budget reading. Understanding its reporting and informational limits has direct bearing on the type and quality of discourse that is possible on public financial management. In particular, its reporting caveats holds considerable significance as even (seemingly) minor differences or deviations from internationally accepted guidelines can raise misleading impressions about the government's true fiscal position. In turn, this could

lead to the introduction of inappropriate public policies, with considerable socioeconomic effects.

The primary conclusion of this paper is that the Singapore budget falls considerably short in being able to facilitate the conduct of a sound and/or informed policy discourse. In particular, subtle divergences from international reporting standards limit the quantity and quality of analytically useful information available, and these possess a strong liability to influence perceptions about the public sector's actual fiscal standing. This also undermines perceptions of transparency and public sector accountability.

Broadly, the current reporting scope and structure presents an inadequate/incomplete representation of the Singapore government's fiscal position, and need to be reviewed and remedied. The key findings of this paper are as follows.

Firstly, regular budget deficits are forecasted by typically underestimating expected revenues for the coming year and overstating expenditures. The realized budget balance however, exhibits a surplus or, at least, a considerably smaller deficit than what was initially presented. This is typically justified by policymakers as a 'prudent' fiscal policy practice, but consistent (and persistent) unidirectional forecast errors cannot be considered to be such. Rather, this creates fiscal illusions about the true revenue and expenditure capacity of the public sector to Parliament and other stakeholders.² As will be discussed later in the paper, this practice can elicit considerable economic impact.

Secondly, several long-standing reporting practices for certain transactions further serve to deflate the reported budget balances. These include the categorization of income from the lease of land as capital income when it should be treated analytically as a complicated excise tax (this aspect will be further discussed later in the paper), and labelling budgetary transfers to endowment and investment funds as expenditure. Revising the budget balances in accordance with international reporting classifications and standards suggests that Singapore's fiscal space is considerably larger than what is reported by the budget. This is notwithstanding the considerable absence of disclosure on

the (financial) size of activities undertaken by various ministries and statutory boards, and the assets and liabilities of the government.

It should also be noted that current reporting protocols do not conform to the International Monetary Fund's (IMF) *Global Financial Statistics Manual* (GFSM) 2001 which Singapore formally subscribes to.³ Subsequently, broader implications of these reporting inconsistencies vis-à-vis international norms include: (1) compromising the validity of policy inferences or recommendations from cross-country studies which use officially reported data prodigiously; (2) inadequate disclosure about the availability of resources for social policies such as the provision of intergenerational transfers and the introduction of social risk pooling without the need to raise taxes; and (3) an implicitly higher level of political risk than what may be perceived on the basis of broad sociomacroeconomic surveys and statistics.

Finally, simple amendments and additions to Singapore's existing budgetary reporting practices will serve to raise its informative content considerably. These include greater disaggregation in the reporting of various stocks and flows by individual ministries and statutory boards with their respective uses; disclosure of the actual size of investment income (or proportion used) from state-affiliated investment entities; and closer adherence to the reporting definitions in the GFSM. A tax expenditure statement will improve the government's fiscal marksmanship performance and reduce the potential for disruption to business planning from (plausibly) unforeseen or unanticipated tax liabilities/reliefs.

The rest of the paper is organized as follows. Section Fiscal Marksmanship, 2006-2014 evaluates the fiscal marksmanship performance between 2006 and 2014 using the official revenue and expenditure reports, and discusses some of the potential effects. A detailed examination has not been undertaken for the Singapore budget in recent years and this paper fills the gap in the literature. In Section Fiscal Space, the budget's reporting idiosyncrasies are first discussed, followed by a (limited) revision of the budgetary estimates in the spirit of the GFSM.

The influence of the budget's reporting practices in shaping policy discourse is then illustrated by considering the case of providing a social pension in Singapore. Section Concluding Observations concludes the paper with a brief summary of the main findings, recommended changes to the budget's current reporting practices, and key policy lessons.

Fiscal Marksmanship, 2006–2014

Data

Fiscal marksmanship performance is assessed by the size of the errors between revenue and expenditure forecasts and the actual realized amounts. It provides an indication of the government's accuracy and efficiency in planning and resource acquisition for its policy objectives. Regular fiscal marksmanship exercises will serve to ensure that both the forecasting model and the assumptions used for budgetary planning remain relevant.

Budget documents from 2002 are publicly available on the Singapore government budget website at <http://www.singaporebudget.gov.sg/>. Since 2005, the documentation for each edition consists of the budget speech, the *Budget Highlights* which reports the key policy initiatives and revenue and expenditure data, and the *Budget Book – Revenue and Expenditure Estimates* which reports the breakdown of revenues by source and expenditures by department or aggregate purpose.

Data for this paper are obtained primarily from the *Budget Highlights* and, because of some organizational restructuring, supplemented by the *Budget Book*. For international comparisons, data from the IMF's *Fiscal Monitor* and the Statistical Database System (SDBS) of the Asian Development Bank (ADB), which follow the budget's fiscal year reporting of April to March, are used. Data from IMF Article IV consultations are not included here as these are reported on a calendar year basis. The analysis begins from 2006 to align with the reporting period in the *Fiscal Monitor*.

The reporting structure for each edition of the budget presents the anticipated fiscal position

for the forthcoming year of assessment, revised estimates for the current year, and the revenue and expenditure outturns of the previous. Cash accounting is used in presentation of the budget to the Parliament and all revenues and expenditures are reported in nominal terms.⁴

Budget Aggregates – Macro Implications

From the accounts reported in the *Budget Highlights*, the following errors: (1) the difference between the budget outturn and initial forecasts; and (2) the difference of the outturn with the revised estimates, can be calculated for operating revenue, total expenditure, the primary balance, special transfers, net investment returns contribution, and the overall budget balance.

The first validates the structural and behavioral assumptions underpinning the forecast model. As revised estimates incorporate all new and available data and information since the budget's initial preparation, the second set of errors provides inference as to the extent that all relevant information is included in the estimation process. *A priori*, errors of the revised estimates-outturn are likely to be smaller than from the initial forecasts. However, systemic forecast biases may be inferred if there is persistence in the signs and/or sizes of the errors.

Table 1 reports the estimation errors of the main budget aggregates in absolute terms and as a share of GDP for 2006 to 2014.

The classification of these aggregates adheres to the official organization and reporting in the *Budget Highlights*. The general trend in Table 1 indicates that preliminary forecasts of the budget balances were consistently underestimated by up to almost 3.1% of nominal GDP. Revised estimates were more accurate but with a systemic bias towards the reporting of budget surpluses.⁵

Analytically, assuming that public spending leads to a Keynesian-type expansion in output and public and private consumption are substitutes, a higher level of public sector consumption raises aggregate output and welfare. Subsequently, a smaller realized expenditure suggests lower consumption of final goods and services by the public sector,

and both the short-run expansionary effects and welfare gains of public spending are likely to be smaller than anticipated.⁶

Furthermore, the composition of operating revenue can be broadly classified into: income tax, the Goods and Services Tax (GST), asset and other taxes, and nontax revenue. Between 2006 and 2014, taxes contributed approximately 89% of operating revenue. By itself, taxation necessarily imposes welfare costs from a reduction in disposable income (consumption) and a deadweight loss to society (Browning and Liu 1998). Together with lower-than-planned public expenditure, the substantial proportion of taxes to operating revenue and higher outturn suggests that any postulated short-run Pareto improvements of the budget will be considerably muted.

A note of caution is needed here. Forecast errors as reported in Table 1 are often indiscreetly referred to the budget as having been more expansionary (contractionary) than planned. However, such inferences are underpinned by an implicit (and stringent) *ceteris paribus* assumption. Failing which, conclusions about the budget's effects on economic activity are potentially spurious.

Instead, the extent of the budget's influence on economic activity can only be determined by an appropriate functional specification of the economy and its overall impact – the fiscal impulse – depends on the simultaneous interactions of public expenditure with various factors such as the elasticity of substitution between goods, the income elasticity of demand, the source, and/or the focus of the stimulus, etc. Assessment also needs to be done relative to a benchmark, such as the previous year's economic performance.⁷

Operating Revenue Forecasts – Distributive Implications

Claus et al. (2014) review the distributional impacts of various government expenditures by purpose but considerable aggregation in the composition of public spending in the budget – reported as just operating expenditure and development expenditure – prevents any useful analysis about the optimality and overall

Table 1. Fiscal marksmanship (official measures), 2006–2014

	(Budget outturn) – (initial budget estimate)			(Budget outturn) – (revised budget estimate)		
	As percentage of GDP in current prices ^a			As percentage of GDP in current prices		
	In billion SGD	Range	Mean (SD)	In billion SGD	Range	Mean (SD)
Operating revenue	+1.25 to +8.02	+0.34 to +2.96	1.19 (0.89)	-0.51 to +1.29	-0.13 to +0.55	0.52 (0.54)
Total expenditure	-1.73 to +0.64	-0.61 to +0.23	-0.22 (0.26)	-1.11 to -0.32	-0.35 to -0.12	-0.79 (0.27)
Primary balance	+0.62 to +8.03	+0.23 to +2.96	1.41 (2.64)	+0.04 to +1.97	+0.01 to +0.82	1.31 (0.67)
Special transfers ^c	-0.67 to +1.94	-0.24 to +0.62	0.16 (0.32)	-0.47 to -0.01	-0.12 to 0.00	-0.16 (0.15)
Net investment returns contribution ^d	-0.66 to +2.12	-0.24 to +0.78	0.33 (0.83)	-0.71 to +0.69	-0.30 to +0.25	0.04 (0.42)
Overall budget balance	+1.04 to +8.40	+0.38 to +3.08	1.38 (2.64)	+0.70 to +2.60	+0.18 to +0.92	1.57 (0.64)

Source: Authors' calculations.

^aGDP in current prices is the appropriate base as the budget is reported in cash (nominal) terms.

^bPositive errors indicate an underestimation while overestimates yield negative errors.

^cSpecial transfers include budgetary transfers to both individuals and to various endowment funds.

^dNet Investment Returns (NIR) contribution comprises of investment income from the government investment agencies such as GIC Private Limited and statutory boards, such as the Monetary Authority of Singapore. Statutory provisions limit its withdrawal for budgetary purposes to 50% of real investment returns, i.e. including inflation. From 2016, NIR contributions include returns from Temasek Holdings Private Limited.

impact of current spending practices on distributive outcomes.

In comparison, greater disaggregation in the reporting of revenue sources offers some scope for intuition of the budget's distributive impact. Table 2 reports the forecast errors for the four broad revenue groups. Unlike the budgetary aggregates, no clear indications of systemic forecast errors emerge from any revenue source. But income tax and the sum of asset and other taxes appear the most pertinent in the forecast errors of operating revenue.

Disaggregated, underestimation of corporate income tax accounts for the largest share of income tax revenue errors while stamp duty shows the largest fluctuations in asset and other taxes.

Following Das-Gupta (2015, Table 6.1), personal and corporate income taxes are typically progressive while stamp duty and nontax revenues are assessed to have no direct effects on income distribution. However, the latter can still affect income inequality if they impinge on allocative efficiency. In this case, the choice of revenue instruments suggests (some) progressivity by design in resource acquisition. This impression is enhanced by the higher resulting corporate income tax collection. However, regular higher corporate tax outturns potentially disrupt business and investment planning and affect allocative efficiency. The latter is exacerbated by the lower-than-planned expenditure of the public sector (Table 1), with (indirect) consequences to inequality.

Asher et al. (2015) argue that, as a whole, the tax system is (implicitly) regressive due to: (1) tax exemptions to capital gains and dividend and interest income; and (2) wealth effects, particularly on retired households, from the erosion in real asset and savings values following the introduction of the GST in 1993. Furthermore, while personal (labor) income tax rates are progressively structured,⁸ the number of personal income tax payers is approximately 37% of the total labor force in 2013, a significant number of whom are not resident Singaporeans – referring specifically to Singapore citizens and permanent residents.

Thus, the majority of the resident Singaporean workforce is unaffected by the progres-

sively designed tax treatment of personal labor income.

Next, despite the higher corporate income tax revenue collection, the tax incidence is unclear. Clausing (2012) reviews the literature on corporate tax incidence and, despite some inconclusiveness, suggests that capital owners are more likely to bear the tax burden than labor.⁹ However, capital income – capital gains and dividends – which typically accrues more to higher income groups is tax exempt in Singapore. The absence of corresponding increases in government expenditure with higher corporate tax revenues implies that the overall distributive impact of the budget is arguably regressive.

Instead, progressivity is likely to be better achieved by (regular) budgetary transfers to households (Heijdra and Ligthart 2002) – an expenditure feature that is conspicuously absent in the budget – than from the design of revenue instruments. However, greater disaggregation of revenue and expenditure by source and purpose, and a longer time span of data than what is presently available are required for a more conclusive analysis.

Fiscal Space

Accounting Caveats

Classification idiosyncrasies of a budget may be argued to reflect country-specific nuances, but they can compromise the informational integrity and comparability of the data vis-à-vis international standards. Reasons of political economy and cross-country comparability also compel the need for the reported data to adhere to international standards such as the GFSM.¹⁰

Nomenclatural differences of the budget include the labeling of the (GFSM's) overall fiscal balance as the primary balance by the budget, while the overall balance is the (approximate) equivalent of the GFSM's primary balance. A third balance – the basic balance – does not appear to have an international equivalent and its functional purpose for inclusion is unclear. For the rest of the paper, the terminology used follows that of the budget.

Table 2. Operating Revenue Forecast Errors, 2006–2014

	(Revenue outturn) – (Initial budget estimate)			(Revenue outturn) – (Revised budget estimate)		
	In billion SGD	As percentage of nominal GDP	Mean (SD)	In billion SGD	As percentage of nominal GDP	Mean (SD)
	Range	Range	Mean (SD)	Range	Range	Mean (SD)
Income tax ^a	-0.53 to +2.54	-0.15 to +0.91	0.39 (0.36)	-0.09 to +0.83	-0.02 to +0.30	0.25 (0.25)
GST	-0.20 to +1.32	-0.06 to +0.49	0.14 (0.17)	-0.08 to +0.30	-0.03 to +0.09	0.11 (0.14)
Asset and other taxes ^b	-0.55 to +3.61	-0.20 to +1.33	0.53 (0.45)	-1.00 to +0.70	-0.37 to +0.30	0.05 (0.50)
Nontax revenue ^c	-0.51 to +1.71	-0.19 to +0.63	0.14 (0.65)	-0.39 to +0.85	-0.17 to +0.31	0.05 (0.36)

Source: Authors' calculations.

^aIncome tax consists of corporate income tax, personal income tax, and withholding tax. Withholding tax was previously reported with personal income tax and disaggregated from 2009.

^bAsset and other taxes comprises of the sum of asset taxes, customs and excise, motor vehicle taxes, betting duties, and other (unclassified) taxes. Stamp duty was reported as a separate item from 2010.

^cNontax revenue includes statutory board contributions, vehicle ownership premiums, other fees and charges and other (aggregated) revenues.

Conceptual definitions of several key budgetary accounts also differ from the GFSM. Among others, the composition of operating revenue does not include investment and capital income. Net lending is also excluded in determining the budget balances.¹¹ Adding to the inaccuracy and misperception about the government's fiscal position, debt servicing (interest receipts and expense) is reported in the *Budget Book* but not included in determination of the overall balance.

Land Revenues

A long-standing reporting practice in the budget is to classify revenue from land sales as capital income¹² (and excluded from operating revenue). In line with the GFSM, proceeds from land sales are categorized as capital income *only* if there was a permanent transfer in ownership or depreciation in value. Otherwise, these are classified as rents and included as a component of operating revenue.

Constitutional arrangements in Singapore restrict transfers of land ownership. The sale of land refers primarily to the sale of land *use* rights in the form of long-term leases than actual ownership. These are de facto land rental payments which form a part of a cost of production, and potentially shifted to intermediaries and final consumers. As such, land revenue is better regarded (analytically) as a complicated excise tax (Asher et al. 2015). Furthermore, if there was transfer in land ownership, this should be reflected by a change in assets in the government's balance sheet.

However, reporting of the government's assets and liabilities comprises of a single sheet where assets consist of cash and four aggregated investment components – value of land is not reported – totaling (as of 2013) over 220% of GDP. Such 'parsimony' prevents verification of any land ownership transfers. It also raises considerable concern about accountability and transparency in the use and management of public finances and assets.

Budgetary Transfers

Classifying budgetary transfers to endowment and investment funds as expenditure is similarly discrepant with the GFSM. Such transfers

are considered as additions to national savings and, such as budget surpluses, accrue to the government's assets and liabilities and not be treated as expenditures. *Unless* part of such a sum, or the income generated, is used to procure final goods and services or other general government operating expenses, budgetary transfers to endowment and similar funds should not be reflected as an expense in the current account nor included in determining the budget balances.¹³

Transfers in the budget ('Special transfers' which do not include transfers endowment and trust funds) are excluded from the primary balance and only considered in the overall budget balance. These typically comprise of various rebates and one-off grants to households and firms. Transfers of resources from the government enlarge consumption opportunities and raise national income in the short-run (Chapter 4, IMF 2001). Thus, excluding the allocations to endowment and investment funds, transfers should be considered as a current expense and a determinant of the primary balance.

Budget Balance Revisions

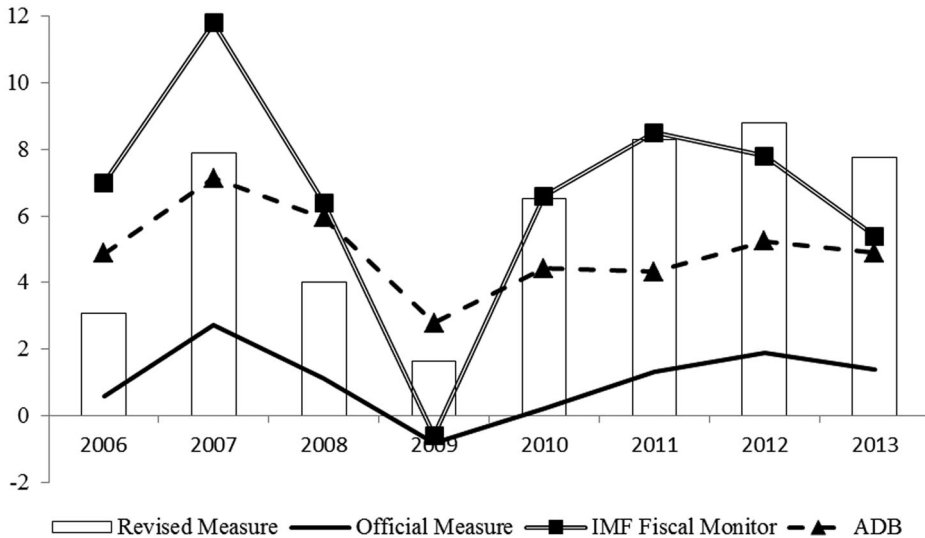
Adjustments to the data and/or the analytical interpretations are necessary if the budget is to be used as a basis for policy debates. For some comparability with international reporting standards, revisions to the officially reported budget balances require: (1) the inclusion of income from land sales to operating revenue; (2) adding special transfers to total expenditure; (3) including investment income (NIRC) in operating revenue; and (4) deducting transfers to endowment and investment funds from total expenditure.

Figure 1 presents the revised primary balance (revised measure) as a percentage of GDP, the officially reported balance in the budget (official measure), and the balances reported in the *Fiscal Monitor* (IMF 2015) and the ADB's SDDBS for 2006 to 2013. Data for the international comparators for 2014 were unavailable at the time of writing.

The primary balance offers a measure of the government's ability to meet its immediate expenditure needs. Unsurprisingly, the

Figure 1. Primary Balances, 2006–2013 (as a Percentage of GDP)

Sources: Authors' calculations, Budget Highlights, IMF – Fiscal Monitor, ADB – SDBS.



revised measure which includes revenue from the sale of land and the exclusion of endowment/investment fund transfers suggests a considerably larger primary surplus than what was officially reported.

Overall balances, which provide a preliminary assessment of the government's ability to service its medium- to long-term obligations, exhibit similar (Figure 2). Note that the revised primary and overall balances are identical in this case. This is not unusual, e.g. Das-Gupta (2015), and is largely, but not only, due to the lack of disaggregation in reporting.

Adjusting for operating revenue and expenditure with respect to income from land sales and various transfers, the revised measures were an average of approximately 6% of GDP over the period. This suggests a more optimistic fiscal position than what is reported by the official measures. Enhanced by the fact that net public debt in Singapore is a surplus (Asher et al. 2015), it is clear that the government has little difficulty in meeting both immediate and longer term fiscal obligations. This is in contrast to the implications of the near-balanced budgets as measured by the official measure.

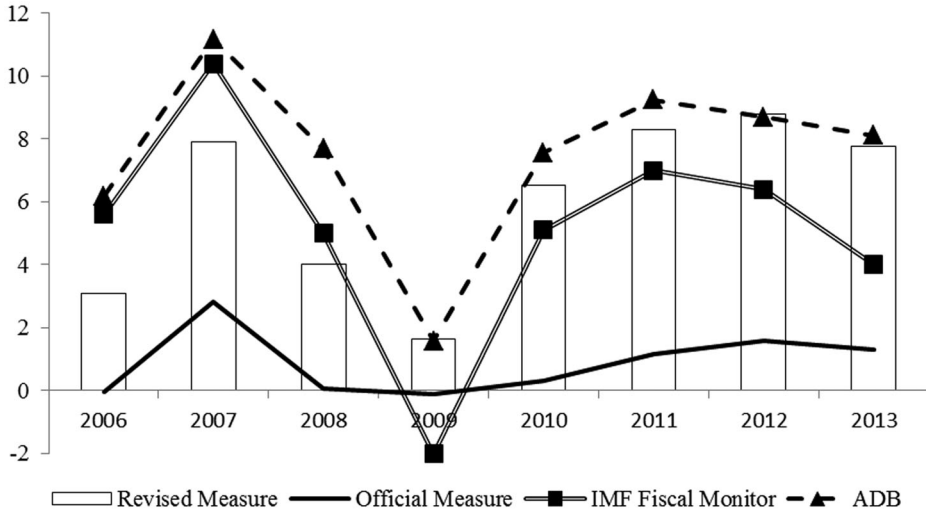
The revised measures are also in closer adherence to those reported by the IMF and ADB,

suggesting that the revisions undertaken are both plausibly appropriate and consistent with international reporting norms. However, some caution needs to be exercised when interpreting Figures 1 and 2 for policy discussions. Firstly, some incorrect inclusions/exclusions were unavoidable in the absence of a more detailed breakdown of revenue and expenditure. As mentioned, net lending, debt servicing, and capital income are not reported in the *Budget Highlights* and were not included in the revised measure. However, these transactions are small relative to the sizes of land sales income and transfers. In the broader scope of this paper, noninclusion has little impact on either the overall budget balance or the implications arising from the prevailing reporting practices.

Secondly, the budget per se is not a reliable indicator of the size of the public sector (Asher et al. 2015). Total (officially) reported expenditure has been below 15% of GDP between 2006 and 2013 but various ministries and statutory boards regularly hold mandates to undertake financially significant projects such the provision of public housing, infrastructural capacity building, and as investment vehicles for the government's surplus funds. These possess considerable autonomy in their

Figure 2. Overall Balances, 2006–2013 (as a Percentage of GDP)

Sources: Authors' calculations, Budget Highlights, IMF – Fiscal Monitor, ADB – SDBS.



(budget-financed) operations (Blöndal 2006). But current aggregation in reporting limits disclosure of their respective financial stocks and flows as there are no details corroborating expenditure by the source *and* its corresponding purpose in the budget.

The inaccuracy of reporting is enhanced by an ambiguity about the size of investment income. As neither total returns nor the specific percentage which is transferred are disclosed, the lack of disclosure also carries implications for governance, particularly as the NIR and related frameworks' portfolio of funds includes mandatory contributions for retirement savings¹⁴.

The lack of information with respect to how the revenue and expenditure estimates are computed presents a further source of error. This is unlike other developed economies such as the UK (Mosley 1985) where the forecast model is publicly available, or accessible on request from the relevant authorities. Thus, there is no possibility of verifying the appropriateness of the estimation methodology and validity of the base assumptions used.

Essentially, revisions as done here remove some inconsistency in reporting, but discrepancies between the reported and the true fiscal position should not, and cannot, be dis-

missed in any policy discussion predicated on the budget.¹⁵

Policy Significance

The budget's influence of in molding policy discourse is better illustrated by considering the capacity of the public sector to enhance retirement financing.

Retirement financing in Singapore is based on the premise that sufficient savings can be accumulated over the course of one's working life with a state-micromanaged provident fund – the Central Provident Fund (CPF). Asher and Bali (2014) assess and contend that the present reliance on mandatory savings is unlikely to be adequate for retirement needs and, in particular, to alleviate relative poverty. These are exacerbated by the absence of social risk pooling.¹⁶

There is a historical emphasis on reliance away from the state in retirement financing and little demonstrated willingness by the public sector to enhance retirement security by, for example, the provision of a budget-financed social pension. The analyses in Sections Fiscal Marksmanship, 2006-2014 and Budget Balance Revisions strongly suggest that official statements asserting the need for higher income taxes, which are a drag on economic

growth, to finance the additional expenditure are erroneous,¹⁷ e.g. Shanmugaratnam (2015).

Notwithstanding the ambiguity of tax increases on growth, e.g. Myles (2000) and Gale and Samwick (2014), static estimates for a universal social pension at 20% of the median wage suggest that a fiscal cost of approximately 0.78% of nominal GDP in 2012 (Asher and Bali 2014, Table 12.1). For a (more generous) benefit of 20% of per capita GDP, this increases to nearly 3.5% of GDP in 2030.¹⁸ From Figures 1 and 2, it is clear that, with closer reporting adherence of the official measure to international standards, there is sufficient fiscal space to finance the social pension without the need to make adjustments to existing tax rates.

Broadly, affordability assessments of a social pension (in this case) or other expenditure assessments are construed on the information available in the budget. This is dependent on the budget's organization and reporting, and the degree of understanding of the limitations imposed by the reporting structure. These impinge on the factual and perceptual validity of any policy analysis or discussion that is made on the basis of the budget's reporting. In particular, cross-country comparisons which fail to take differences in reporting practices into account are potentially misleading and unlikely to be valid.

In essence, the conduct of sound public financial management and administration requires, firstly, awareness of the unintended consequences arising from budgetary reporting practices such as over- or underestimating of budget forecasts. Secondly, the conduct of regular fiscal marksmanship exercises to assess the accuracy and efficacy of the underpinning budgeting processes. And thirdly, ready accessibility to better quality data, information about the budgeting practices, and its divergences from internationally accepted accounting standards to various stakeholders.

Concluding Observations

The annual budget plays an important role in establishing the policy intents and objectives of

the fiscal year. An examination of the documentation and reporting practices of Singapore's publicly available budgetary documents from 2006 to 2016 strongly suggests that the budget's current scope of reporting significantly misdirects and inhibits the quality of public policy debate and research.

The findings of this paper are broadly as follows. Firstly, fiscal marksmanship of the Singapore Budget has been poor with systemic underestimates of revenues and overestimation of expenditures. These impose implicit opportunity costs to society including, but not only, the welfare costs forgone from a reduction in consumption and investment and disruption to business planning. Besides focusing on the sizes of the budget balances, there is also need to pay attention to the signs and sizes of the *difference* between budget forecasts and outturns at both aggregative and disaggregated levels.

Secondly, there are clear inconsistencies in the classification of budgetary transactions from the GFSM, which Singapore officially subscribes to. This can impede discourse and the introduction of relevant policies to manage changing socioeconomic conditions, e.g. Singapore's demographic changes to an aged society. Budget balance revisions in line with the GFSM suggest there is potentially greater fiscal space available for reform initiatives, such as the provision of a budget-financed social pension, that were previously (and consistently) impeded by fiscal illusions of the public sector's resource availability.

Subsequently, using budgetary data *as is* without giving sufficient consideration to the specific reporting nuances and discrepancies from, for example, the GFSM potentially gives rise to misleading analyses. This is especially the case in the use of cross-country comparisons which make liberal (and indiscriminate) use of data without understanding the specific contexts and origins by which the data were obtained.

The idiosyncratic classifications of revenue and expenditure and insufficient disclosure of how Singapore's budgetary data have been constructed is particularly dysfunctional. Asher et al. (2015) contend that the shortfall in reporting, particularly about the actual size of

investment returns contributes to a higher (implicit) level of political risk than what may (often) be inferred from various economic and political assessment rankings such as the World Bank's Ease of Doing Business Index and the Global City Competitiveness Index by the Economist Intelligence Unit. In this case, risk arises from the perceived credibility of the budget's reporting as a result of the fiscal marksmanship performance, and variation in the size of the budget balances between sources.

An analysis of reporting reforms is beyond the scope of this paper but essentially, in any organization, transparency and accountability of allocations and transactions is necessary to ensure good governance. In this case, poor marksmanship and the lack of disaggregation and consistency in reporting by internationally recognized standards impact on the perceived transparency of the public sector.

Diminished confidence in the global macroeconomic environment following the 2008 economic crisis and global macroeconomic and capital market developments in late 2015 and early 2016 has renewed the importance of sound public financial management practices and in understanding the basis on which such discussions are made, e.g. Tanzi (2015). Public trust and credibility have become significantly more important for consensus-driven policy implementation. This emphasis is even greater for developing economies, where lapses in confidence of the public sector's credibility (perceived or otherwise) can have considerable socioeconomic effects.

What is needed is the general demonstrable commitment towards facilitating high-quality public debate and research on public financial management issues. As budgetary aggregates are typically used as the basis for policy discourse, a conscious awareness of the errors arising from aggregation (e.g. Morgenstern 1951) and the manner by which such public data are compiled is also necessary.

Greater disclosure of the various stocks and flows of the various ministries and statutory boards and of investment income, closer adherence to the GFSM and the reporting of a tax expenditure statement¹⁹ will serve to raise confidence and the analytical usefulness of the

budget. These are not necessarily difficult requirements to meet and can serve to raise the budget's informational content. They also serve to orchestrate and display effort towards greater transparency and disclosure.

Budgetary authorities will need to assess and adapt the necessary changes accordingly but it is clearly conceivable that a number of changes brought up in this paper can be incorporated easily into most existing reporting practices and structures, without needing substantial modifications.

Acknowledgements

The authors are grateful for comments from the Editor, Associate Editor, and two referees, which improved the clarity and exposition of the paper.

Endnotes

1. Total expenditure differs from total outlays in that the latter includes spending on land development and investment which accrue to the capital account. See Jacobs (2009) for a discussion of budgeting for the capital account.
2. Fiscal illusions typically refer to where governments impress on voters that the costs of government expenditure – taxation – is small and the government is able to raise taxes and spending with minimal increases in voter discontent. The reverse is the case here where the public sector consistently reports greater expenditure costs to *discourage* demands for increases in spending on public services.
3. A newer edition, GFSM 2014, was released at the time of writing. This paper follows GFSM 2001 in line with its use in the period examined. Also, migrating to the new edition requires a considerable transition period and evaluating current reporting practices against the GFSM 2014 is inappropriate.
4. A modified accrual accounting system was used since 1999, but reporting remains on a cash basis. See Blöndal (2006) and Asher et al. (2015) for discussions of the differences between cash and accrual accounting and also the

operational aspects of expenditure in the public sector.

5. International evidence suggests that systemic underestimation or overestimation is a regular occurrence in practice. Mosley (1985) and Rodgers and Joyce (1996) discuss some rationales for the practice. For empirical evidence, see Asher (1978) who examines India's budget estimates, Mosley (1985) for the United Kingdom, and Rodgers and Joyce (1996) who provide state-level evidence of the practice in the United States. Beetsma et al. (2013) decompose the budget balance forecast errors for the members of the European Union and, similarly, find the presence of systemic biases in budgetary estimates across the bloc.

6. Note that this deduction further rests on several other underpinning assumptions. See Heijdra and van der Ploeg (1996) for details. In contrast, Tan (2004) considers the case where a reduction in government spending is expansionary. The latter is left at the reader's discretion.

7. See de Castro et al. (2010) and Das-Gupta (2015).

8. In 2006, personal (labor) income tax rates start from 0% to the top marginal rate of 22%. The latter was subsequently lowered to 20% in 2007. The 2015 budget announced that the highest marginal rate will be raised to 22% from 2017. Corporate income tax rate was at 20% in 2006 and lowered to 17% over two stages in 2009 and 2011. GST was raised from 5 to 7% in 2009. Capital gains, dividends, and interest income are tax exempt.

9. Like the fiscal impulse, analyzing the tax incidence requires a fully specified macroeconomic model. See Fullerton and Metcalf (2002) for an in-depth discussion.

10. Political economy and policy-based arguments for internationally consistent and comparable reporting are covered by Smith (2001) and Chander (2014). They will not be discussed here.

11. See Box 4.1 of IMF (2001) in conjunction with the budget accounts in the *Budget Highlights*.

12. Before 2008, income from these transactions was reported in the *Budget Highlights*. Since then, these were consolidated into the *Budget Book*.

13. Claims (liabilities) against the government in the form of endowment funds increased from SGD 49.1 billion in 2012 to SGD 53.7 billion in 2013, close to the reported SGD 5.6 billion of transfers reported in the budget. While beyond the immediate scope of this paper, it is also worth noting that substantial cash is held by the government. For 2013, this was SGD123.4 billion, about 33% of GDP. This is more than twice the government expenditure of 13.7% of GDP. Lack of sound treasury management reflected by such a large cash holding is not a recommended international practice.

14. A discussion is out of the immediate scope here. Some governance implications of the current reporting practices for investment income were covered in Asher et al. (2015). The issues raised are likely to warrant even greater attention with the inclusion of returns from Temasek Holdings Private Limited in the 2016 budget.

15. Morgenstern (1951) made a similar point emphasizing the need for better understanding the manner in which observations and data are collected for sound policy analysis. Also see Chander (2014).

16. Existing arrangements compromise inter-generational equity and the longer-term livelihood sustainability of the current elderly who, on average, had shorter earnings lifecycles and lower incomes. Women are disproportionately affected as they are further subjected to greater longevity risk.

17. Some intent for change was symbolized by the introduction of the Silver Support Scheme in the 2015 budget. The benefits prescribed are between 2.65 and 6.63% of the 2014 median wage. Approximately 35% of the resident population aged 65 and over are eligible with a budgeted fiscal cost of the scheme is SGD 350 million, or just under 0.1% of GDP. However, the scheme's focus appears embedded in mitigating absolute than relative poverty, the

latter of which should be the focus of concern for high-income, developed economies.

18. Using data for 2014, a universal pension at 20% of median wage costs approximately 1% of nominal GDP, and 1.58% for a benefit at 20% of per capita GDP. However, fiscal costs are likely to be lower with means testing.

19. For instance, Australia is a high income country which regularly reports a tax expenditure statement. See Australian Government Treasury (2016).

References

- Asher, M. G. 1978. 'Accuracy of Budgetary Forecasts of Central Government, 1967–68 to 1975–76'. *Economic and Political Weekly* 13(8):423–432.
- Asher, M. G. and A. S. Bali. 2014. 'Singapore's Pension System: Challenges and Reform Options'. In B. Clements, F. Eich, and S. Gupta (eds.), *Equitable and Sustainable Pensions: Challenges and Experience* (pp. 239–253). Washington DC, USA: International Monetary Fund.
- Asher, M. G., A. S. Bali and C. Y. Kwan. 2015. 'Public Financial Management in Singapore: Key Characteristics and Prospects'. *Singapore Economic Review* 60(3):1550032.
- Australian Government Treasury. 2016. *Tax Expenditure Statement*. Canberra: The Treasury. Available from <http://www.treasury.gov.au/PublicationsAndMedia/Publications/2016/TES-2015> [Accessed 26 April 2016].
- Beetsma, R., B. Bluhm, M. Giuliadori and P. Wierds. 2013. 'From Budgetary Forecasts to Ex Post Fiscal Data: Exploring the Evolution of Fiscal Forecast Errors in the European Union'. *Contemporary Economic Policy* 31(4):795–813.
- Blöndal, J. R. 2006. 'Budgeting in Singapore'. *OECD Journal on Budgeting* 6(1):45–85.
- Browning, E. K. and L. Liu. 1998. 'The Optimal Supply of Public Goods and the Distortionary Cost of Taxation: Comment'. *National Tax Journal* 51(1):103–116.
- Chan, J. L. 2003. 'Government Accounting: An Assessment of Theory, Purposes and Standards'. *Public Money and Management* 23(1):13–20.
- Chander, R. 2014. *China's Statistical System: Three Decades of Change and Transformation*. Kuala Lumpur, Malaysia: University of Malaya Press.
- Claus, I, J. Martinez-Vazquez and V. Vulovic. 2014. 'Government Fiscal Policies and Redistribution in Asian Countries'. In R. Kanbur, C. Rhee, and J. Zhuang (eds.), *Inequality in Asia and the Pacific: Trends, Drivers, and Policy Implications* (pp. 173–201). Oxford, UK: Asian Development Bank and Routledge.
- Clausing, K. A. 2012. 'In Search of Corporate Tax Incidence'. *Tax Law Review* 65(3):433–472.
- Das-Gupta, A. 2015. 'Fiscal Resources for Inclusive Growth'. In D. Park, S.-H. Lee, and M. Lee (eds.), *Inequality, Inclusive Growth, and Fiscal Policy in Asia* (pp. 167–201). Oxford, UK: Asian Development Bank and Routledge.
- de Castro, F., J. Kremer and T. Warmedinger. 2010. 'How to Measure a Fiscal Stimulus'. *Presupuesto y Gasto Público* 2010 (59):103–116.
- Fullerton, D. and G. E. Metcalf. 2002. 'Tax Incidence'. In A. J. Auerbach and M. Feldstein (eds.), *Handbook of Public Economics*, Vol. 4 (pp. 1787–1872). New York, NY, USA: North-Holland.
- Gale W. G. and A. A. Samwick. 2014. *Effects of Income Tax Changes on Economic Growth*. Economics Studies Program at Brookings. Washington DC, USA: Brookings Institute.
- Heijdra, B. J. and F. van der Ploeg. 1996. 'Keynesian Multipliers and the Cost of Public Funds under Monopolistic Competition'. *Economic Journal* 106(438):1284–1296.
- Heijdra, B. J. and J. E. Ligthart. 2002. 'Tax Policy, the Macroeconomy, and Intergenerational Distribution'. *IMF Staff Papers* 49(1):106–127.
- Huff, W. G. 1995. 'The Developmental State, Government, and Singapore's Economic Development Since 1960'. *World Development* 23(8):1421–1438.
- International Monetary Fund (IMF). 2001. *Government Financial Statistics Manual 2001*. Washington DC, USA: International Monetary Fund.
- International Monetary Fund (IMF). 2015. *Fiscal Monitor – Now Is the Time: Fiscal Policies for Sustainable Growth*. Washington DC, USA: International Monetary Fund.
- Jacobs, D. F. 2009. *Capital Expenditures and the Budget*. PFM Technical Guidance Note No. 8. Washington DC, USA: Fiscal Affairs Department, International Monetary Fund.
- Kioko, S. N., J. Marlowe, D. S. T. Matkin, M. Moody, D. L. Smith and Z. J. Zhao. 2011. 'Why Public Financial Management Matters'. *Journal of Public Administration Research and Theory* 21(s1):i113–i124.
- Morgenstern, O. 1951. 'The Accuracy of Economic Observations'. In T. C. Koopmans (ed.), *Activity Analysis of Production and Allocation*, Cowles

- Commission Monograph No. 13 (pp. 282–284). New York, USA: John Wiley & Sons Inc.
- Mosley, P. 1985. 'When is a Policy Instrument not an Instrument? Fiscal Marksmanship in Britain, 1951–1984'. *Journal of Public Policy* 5(1):69–85.
- Myles G. D. 2000. 'Taxation and Economic Growth'. *Fiscal Studies* 21(1):141–168.
- Prowle, M. J., D. Harradine and R. Latham. 2012. 'Statutory Financial Accounting in the UK Public Sector: Relevance and Cost?'. *Journal of Financial Management in Public Services* 10(2):26–39.
- Rodgers, R. and P. Joyce. 1996. 'The Effect of Underforecasting on the Accuracy of Revenue Forecasts by State Governments'. *Public Administration Review* 56(1):48–56.
- Shanmugaratnam, T. 2015. 'The Economic Society of Singapore SG50 Distinguished Lecture', Available from <http://www.mof.gov.sg/news-reader/articleid/1522/parentId/59/year/2015?category=Speeches> [Accessed 22 August 2015].
- Smith, K. 2001. 'Comparing Economic Performance in the Presence of Diversity'. *Science and Public Policy* 28(4):267–276.
- Tan, K.-H. 2004. 'Expansionary Fiscal Contractions: Government Spending Financed by Lump-Sum Taxes'. *Singapore Economic Review* 49(2):225–232.
- Tanzi, V. 2015. 'Fiscal and Monetary Policies During the Great Recession: A Critical Evaluation'. *Comparative Economic Studies* 57(2):243–275.