Beyond the 13th Finance Commission:
Challenges for Fiscal Policy in India [*]

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1 Introduction and Summary

India's 13th Finance Commission (hereafter FC with no explicit reference to its number) was asked by the country's President to make recommendations in two main areas[1]:

- *Fiscal devolution.* The Commission was asked to propose a mechanism for the distribution between the Union and the States of the net proceeds of taxes which are to be, or may be, divided between them and the principles which should govern the grants-in-aid to the States and the sums to be paid to the States which are in need of assistance;

- *India's overall fiscal stance.* Departing for the tasks assigned to previous Finance Commissions, which were limited to the issue of fiscal devolution, the FC was asked to review the state of the finances of the Union and the States and to suggest measures for maintaining a stable and sustainable fiscal environment consistent with equitable growth.[2]

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[1]Finance Commissions, which are established under Article 280 of the Indian Constitution, have been appointed every five year since 1951.

[2]For a desctription of the essential features of of the Indian system of fiscal federalism, see Rajaraman (2006, 2007-08).

The FC made its recommendations in a report published in December 2009. The present paper, commissioned by the World Bank in the Spring of 2010, addresses two issues at the center of the FC recommendations. Section 2 discusses the design and the effectiveness of inter-state transfers. Section 3 discusses the fiscal path proposed by the FC for the years 2011-15, and in particular the design and implementation of the Golden Rule and the recommendation of "a fiscal strategy built around the idea of an expansionary fiscal consolidation with no compression of development expenditures". Since two years have gone by since the FC report was produced, I shall review the fiscal path proposed by the FC in the light of the evolution of India's main fiscal variables since it was published.

This analysis in this paper suggests four directions for the work of future Finance Commissions, for their mandate and for the stance of India's fiscal policy over the nearer term:

1. Future Finance Commissions, and their mandates, should not shy away from the question: What is the effectiveness of transfers and of tax devolution? The Indian system of inter-states transfers mobilizes about 5% of the country's GDP: future Finance Commissions should ask whether there might be a better way to use these resources;

2. The composition of the fiscal consolidation path recommended by the FC compares well with that of some successful consolidations. Really successful ones, however, would probably cut in half the increase in the tax burden and further reduce spending on subsidies. The proposal of a 50% increase in capital spending is in line with what we learn from expansionary stabilizations;

3. The Golden Rule should be applied correctly, recognizing that capital consumption is part of current expenditure. The FC has taken as a given India's public accounting rules that do not—as far as I understand—allow for a correct accounting of capital depreciation. Future Finance Commissions should be more ambitious and explicitly recommend a change in accounting rules so that capital consumption is correctly included among current expenditures. Depreciation is a critical variable in the design of a golden rule. The speed at which capital depreciates depends on the quality of maintenance: maintenance expenditure should be highlighted and its relation to the average life of public capital made explicit. A mechanism should also be designed to introduce incentives to increase expenditure on maintenance. Once the right incentives are in place, additional resources might still be needed for maintenance expenditure to in-

crease. An obvious possibility is to fund them through a reduction in subsidies, cancelling them entirely by 2015. The lack of knowledge on capital depreciation and maintenance, and the little attention dedicated to this important aspect of public investment, suggest that the next Finance Commission might be given a special mandate to investigate it;

4. Under the IMF February 2011 macroeconomic forecast for India over 2011-16, the fiscal path proposed by the FC implies that the ratio of the general government debt to GDP gradually decreases, eventually falling below the target set by the FC: about 0.70. If the Golden Rule was applied correctly, there is no reason why India should keep reducing its public debt ratio beyond that level. Keeping the debt ratio constant at around 0.70 opens the room for some increase in public investment, maybe as much as 2 percentage points of GDP per year. Investigating the feasibility of this option is the most significant macro challenge facing Indian authorities today. It requires (beyond a reallocation of current expenditure so as to create the room for an increase in maintenance) two steps: (i) an analysis of the risks associated with the IMF macro forecast; (ii) an analysis of where the additional investment expenditures should be directed;

   (a) macro risks. Over the past 20 years the main factor contributing to the stability of India's debt ratio has been a growth rate far in excess of the average interest cost of the debt. This has allowed the country to run primary deficits without significantly raising the debt ratio. It is the size of $g - r$ which suggests that India could speed up public investment while keeping the debt ratio constant. The IMF forecast assumes that the real rate, while rising, remains about half the growth rate of the economy: in Brazil, over the past decade, it was twice the growth rate. Financial liberalization and the adjustment of inflation expectations might change the outlook in India as well;

   (b) where should the additional investment be directed? To be productive, to be completed in time and to avoid corruption, public investment should be concentrated in a few, easy-to-monitor projects. The Delhi metro is a good recent example. This paper has little to say on this. A thought, however, is that the Delhi metro could also be a model for making Indian cities more efficient—an objective which requires the temporary shift of the population while degradated inner cities are rebuilt. Such shifts are only possible in the presence of an efficient public transport system.

2 The Design and Effectiveness of Fiscal Transfers

The task assigned to India's Finance Commissions is to compensate states for their fiscal disability—that is to propose transfers designed to offset the fiscal disadvantage of a state arising from its lower revenue capacity and its higher unit cost of providing public services.

A simple way to spell out this mandate (and one that does not do justice to the many dimensions of the tasks assigned to the FC) is as follows. Assume that the objective is for all states ($i = 1, ... N$) to offer their citizens the same level of per-capita spending on public goods $g_i = g^T$ for all i, where T stand for "target" spending. (I shall assume that g^T is computed so as to be compatible with the aggregate resources available, *i.e.* so that the overall budget constraint is satisfied). Assume for simplicity that there are only two states (i and j) and two groups in the population of each state, the rich, R, and the poor, P. The ratio of the revenue gap of state i to that of state j (defined as the ratio of the differences between the spending needed to provide g^T to each individual) and state's total tax revenue is

$$\frac{(\text{Re venue Gap})_i}{(\text{Re venue Gap})_j} = \frac{N_i}{N_j} \left[\frac{g^T - \left(t_i^R n_i^R y_i^R + t_i^P n_i^P y_i^P\right)}{g^T - \left(t_j^R n_j^R y_j^R + t_j^P n_j^P y_j^P\right)} \right]$$

where t_i^R is the tax rate of the rich in state i (assumed constant, that is $t^R = T^R/Y^R$), n_i^R is the population share of the rich in state i, and y_i^R is the income share of the rich in state i, and the same for the poor. If the two states were identical ($t_i^R = t_j^R$, $y_i^R = y_j^R$, $n_i^R = n_j^R$ and the same for P), they would have the same per capita revenue gap. To fill it, revenue should be distributed according to population shares. If instead the two states differ—in the distribution of the population, or of income, or in the average tax rates they apply, or in their effectiveness at raising revenue—these parameters will also enter the formula designed to fill the two revenue gaps

The FC addresses its mandate as follows: *"In our formula for horizontal devolution, the highest weightage amongst all the variables is for correcting the fiscal disability of a state vis-à-vis those of the top-ranked states."* FC Report, p. 22). The weights used to reallocate tax revenue across states are[3]: fiscal capacity (47,5%), population (25%), area (10%), fiscal discipline (17,5%). While fiscal capacity and population enter the simplified expression shown above, area and fiscal discipline do not. But they are both very reasonable criteria. Fiscal discipline is important to give states the right incentives. Area recognizes that states with a larger area incur additional costs to deliver a comparable standard of services to their citizens.

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[3] The note at the end of Chapter 8 of the FC Report describes how these weights were computed.

An evaluation of the Indian system of fiscal devolution, however, cannot be reduced to computing a formula. The FC itself sets a more ambitious goal: *"Inclusive growth is the cornerstone of India's development project. [...] Growth must make a demonstrable difference in the lives of the poorest."* (FC Report, p. 22). It is true that in the tasks assigned to India's Finance Commissions there is nothing that formally targets stamping out inequality in per capita income levels across states. Still it seems natural to ask what is the effect of such an elaborate system of transfers and tax devolution (of which the transfers administered by the FC are only one of the elements) on inter-state inequality. In other words, can the purpose of devolution be limited to making sure that states are able to provide comparable levels of public services to populations whose relative income levels remain different, or even grow more distant? The quote reported above suggests the FC is more ambitious. In this Section I shall ask this question, recognizing that a perfectly legitimate objection is that inter-state inequality is not a task formally assigned to Finance Commissions, or to any other transfer mechanism that is in place in India, such as those administered by the Planning Commission.

Setting this objection aside, I start by asking how large are Indian fiscal transfers: obviously if they were tiny, as a fraction of GDP, it is unlikely that they could have any significant effect. I then ask how inter–state inequality has evolved over the past two decades. Finally I ask if Indian transfers are at least progressive, independently of their effect on inter-state inequality.

2.1 How large are Indian fiscal transfers?

The resources reallocated across states through various mechanisms amount about 7 per cent of India's overall GDP (see Table 1-a [4]). In the past decade the tax devolution scheme administered by Finance Commissions has amounted to 3 per cent at most of India's GDP. To this one should add the resources transferred through other programs (Finance Commission grants, State Plan Schemes, Central Plan Schemes, Centrally Sponsored Schemes, Special Plan Schemes and non Plan Grants): the total (I shall refer to this as 'total transfers') comes to about 5 per cent of GDP. Subsidies represent another 1 - 2 per cent of GDP. Subsidies, however, can hardly be added because they are not designed so as to redistribute income across states. I shall therefore leave subsidies out of the picture.

Five per cent of the country's GDP is a relatively modest number. Still, if these resources were concentrated on a few states they could make a big difference in the

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[4] Tables 1-b and 1-c give more detail on the distribution of transfers.

poorest regions of the country. In the case of Bihar, India's poorest state, this seems to be the case. The resources transferred by the 11th and 12th Finance Commission to Bihar amount, respectively, to 20 and 15 per cent of that state's GDP, an amount that could make a significant difference. Bihar, however, is an exception. If we exclude border states and territories (to which I shall return), total transfers to states other than Bihar are in the range 5 - 9 per cent of state GDP, relatively small numbers.

2.2 Indian fiscal transfers and inequality among states

Defining a counter-factual against which evaluate a country's trend in inequality is not obvious. One possibility—a rather crude one—is to compare it with the evolution of inequality in a similar country. I have chosen Brazil (although its per-capita income is three times that of India) mainly because it is also a federal country with significant inter-state transfers, and because in the past decade Brazil has made a determined effort at reducing regional inequality.

Figure 1 is not encouraging. The Figure shows a Gini coefficient I have computed for Indian states and territories year after year since 2000 and compared it with the same coefficient for the 27 states of Brazil. This Gini coefficient uses data on aggregate per-capita income at the state level. The comparison is striking, particularly since the start of the Lula presidency in 2003.

Using per capita income measured on aggregate state data is not necessarily the best way to measure income inequality. Thus in Figure 2 I have computed (only for India because the corresponding Brazilian data were not available) income inequality among states using data from households' consumption surveys, averaged at the state level. (The data come from NSS 2004/05 and earlier comparable surveys.) I construct the Gini coefficients using data on consumption and on poverty rates, separately for rural and urban residents. Inequality among urban residents rises rapidly after 2000 on both measures. For rural residents the poverty-based measure of inequality decreases starting in 2000, while the consumption-based measure keeps rising. Thus, to the extent that transfers have (until 2005, the latest data available) a positive effect on inter-state inequality, this only shows up in the reduction of rural poverty rates.

2.3 Are Indian overall transfers progressive?

Are Indian overall transfers at least progressive, independently of their effect on inter-state inequality? Studying the progressivity of total transfers—those administered by the Finance Commission and by other bodies, such as the Planning Commission,

seems the correct way to evaluate India's system of inter-state transfers. Limiting the analysis to Finance Commission transfers would return a very partial picture since these could be undone or amplified by transfers originating from other parts of government. Figure 3 shows total transfers as a share of state GDP in the past decade (2000-10). States are ordered according to their per-capita GDP from the poorest (Bihar) to the richest (Goa)[5]. The figure doesn't show a clear pattern. The reason is that border states (Jammu and Kashmir, Himachal Pradesh, Manipur, Meghalaya, Nagaland, Sikkim, Tripura and Mizoram) are treated separately. Figure 4 reproduces Figure 3 excluding border states: per capita income and transfers (as a share of state GDP) now look inversely correlated. Thus, excluding border states (where transfers respond to different concerns), the level of total transfers appears to be progressive.[6]

Has the progressivity of inter-state transfers risen or fallen over time? I have asked whether total transfers (those administered by the Finance Commissions plus those administered by the Planning Commission) are becoming more or less progressive by running a simple regression of the growth rate of total transfers on the growth rate of states per-capita GDP. I use two data points: the yearly average of total transfers and per-capita GDP in 2000-05 and 2005-10, the periods covered by the 11th and 12th Finance Commissions. The states considered are the same 25 shown in Figure 3. I find

$$\Delta \left(Transfers/GDP \right)_i = -0.11th - 0.54 \Delta Y/N_i$$

the $P - value$ on the coefficient on $\Delta Y/N$ is $0,031$. A 10% increase in per-capita income is correlated with a $5,4\%$ reduction in total transfers. Not only the level of total transfers is progressive, but over the past decade progressivity appears to be rising.[7] [8]

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[5] The Figure includes only 25 out of 28 states. I did not have the necessary data (either on transfers or on state GDP per-capita) for three states: Chhattisgarh, Jharkhand and Uttarakhand.

[6] This confirms the finding in Rao (2004) who estimates a negative correlation (- 0.194) between aggregate transfers and per capita state domestic product in the late 1990s.

[7] I have checked whether this regression is driven by the transfers to Bihar. Excluding this state the results remain virtually unchanged.

[8] Howes (2005) (looking at the growth rate of Finance Commission transfers only, from the 11th to the 12th) shows that the growth rate of transfers which are associated with tax devolution—the largest component of the transfers administered by Finance Commissions—tends to benefit richer states more than poorer ones: in other words, tax devolution is becoming less progressive. Finance Commission grants, on the contrary, according to Howes, are becoming more progressive—but Finance Commission grants represent a relatively smaller fraction of total Finance Commission transfers (See Table 1-b). The view that Finance Commission trasfers have become less progressive over time

Although total transfers appear to be increasingly progressive, Figure 4 suggests that for most states they are too small to make a difference. Transfers could be more effective if they were concentrated on a few states. Total transfers to Orissa, for example, India's third poorest state, amount to less than 7% of that state's GDP. Bihar, the only non-border state receiving relatively large transfers ($15-20\%$ of its GDP), is also the state where poverty (both rural and urban) has fallen by a larger amount: -26% for urban residents, -29% for rural residents, between 1993 and 2005. In Orissa on the contrary, where total transfers (as a fraction of state GDP, over the same 12-year period) are half those received by Bihar, overall poverty rates have not changed, rising 6% for urban residents and falling 6% for rural residents. It is interesting to observe, in this respect, that the improvement in inequality across Brazilian states was to a large extent the result of resources being concentrated on a specific region: the north-eastern strip lying inbetween the forest and the ocean coast.

3   The Fiscal Path Proposed by the FC for 2011-15

The fiscal path proposed by the FC for the years 2011-15 is based on two premises:

- fiscal consolidation – if it provides the fiscal space to promote both public and private investment – promotes growth;

- overall budget plans should adhere to the Golden Rule.

In this section I first review what we know about the effects of fiscal consolidations. Under what conditions can they be expansionary? Then I shall discuss how close the fiscal path proposed by the FC is to the examples of expansionary fiscal consolidations. Finally I shall discuss the Golden Rule and how it is implemented in the FC's fiscal plan.

3.1   Expansionary Fiscal Consolidation

Can fiscal consolidations raise output and, as the FC's Report argues, does this result depend on the composition of the fiscal package ("promoting public and private investment")? A recent paper by Alesina and Ardagna (2010, AA in what follows) has investigated the evidence from "large" fiscal consolidations in OECD countries from roughly 1980 onward. They define a period of fiscal adjustment as a year in which the cyclically adjusted primary balance improves by at least 1.5 per cent of GDP.

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is frequent in the Indian debate. See for example, Chakraborty (2003) and Rao (2008, p. 14).

This definition selects 107 episodes of fiscal adjustments. Of these, 65 last only for one year, while the rest are multi-period adjustments.

The question AA ask is whether such fiscal adjustments are associated with an expansion in economic activity during and in their immediate aftermath, and whether they are associated with a reduction in the public debt-to-GDP ratio. AA define an episode of fiscal adjustment as *expansionary* if the average growth rate of GDP, in deviation from the G7 average (weighted by GDP) in the first period of the episode and in the two years after, is greater than the value of 75th percentile of the same variable's empirical density in all episodes of fiscal adjustments. They define a period of fiscal adjustment as *successful* if the cumulative reduction of the debt ratio three years after the beginning of a fiscal adjustment is greater than 4.5 percentage points (the value of 25th percentile of the change of the debt-to-GDP ratio empirical density in all episodes of fiscal adjustments).

The results show that spending cuts are much more effective than tax increases in stabilizing the debt and avoiding economic downturns. In fact, in several episodes, spending cuts adopted to reduce deficits have been associated with economic expansions rather than recessions. In the case of successful fiscal adjustments about 70 per cent of the adjustment came from spending cuts and in the case of expansionary almost 60 per cent. Instead, in the case of unsuccessful and contractionary adjustments, more than 60 per cent of the budget correction was on the tax side.

The finding that fiscal consolidations based on spending cuts more than on revenue increases are less contractionary—and thus more likely to be associated with an economic expansion—is broadly confirmed in IMF (2010) which also looks at a wide set of countries, but uses a different criterion to identify episodes of fiscal contraction. The study also finds that spending-based consolidations are less contractionary than tax-based consolidations: GDP falls by less and unemployment increases less. Domestic demand contracts significantly as a result of both spending-based and tax-based consolidation, but the contraction is sharper after tax-based adjustments.

Why are spending-based consolidations less contractionary? The IMF study argues that this happens, at least in part, because they tend to be accompanied by a monetary stimulus, whereas tax-based adjustments are typically accompanied by monetary tightening. The channel through which monetary policy dampens the effect on output of a fiscal contraction based on spending cuts appears to be net exports. Net exports increase following all fiscal consolidation, but while in spending-base consolidations the export boom is driven by a surge in exports, after a tax-based consolidation, net exports rise mainly because imports fall. This finding is consistent

with the finding of a different response of the real exchange rate to the two types of fiscal consolidation: the real exchange rate depreciates in spending-based consolidations, while it does not move significantly in revenue-based consolidations. This also suggests that external conditions matter: it makes a big difference whether a fiscal consolidation is pursued by a single country, or by many countries simultaneously. Since exports cannot increase everywhere, simultaneous consolidations are less likely to be expansionary. [9]

According to the IMF (2010) study "these findings are in line with the notion that central banks view spending-based deficit cuts more favorably, possibly because they interpret them as a signal of a stronger commitment to fiscal discipline, and are therefore more willing to provide monetary stimulus following spending-based adjustments. It is also plausible that an increase in taxes, if it involves indirect tax hikes (sales and excise taxes, VAT), raises inflation on impact, making interest rate cuts by an inflation-averse central bank less likely".

Does what you cut in spending-based consolidations make a difference? A consolidation based on cuts to government transfers appears to be less contractionary than one based on cuts to government consumption and, particularly, to government investment.

What explain these differences? The key idea is that cutting politically sensitive items, such as transfers, signals a credible commitment to long-term deficit reduction. In these cases, positive "non-Keynesian" confidence effects can offset the negative "Keynesian" impact on aggregate demand. On the other hand, cuts to less politically sensitive items, such as government investment, might have weaker confidence effects. In this sense the evidence seems to confirm the FC's view that "fiscal consolidation — if it provides the fiscal space to promote investment – promotes growth".

3.2   The composition of the fiscal adjustment proposed by the FC

For the period 2010/11–2014/15 the FC (see Table 2) envisages, at the central government level, a reduction in the primary deficit of 2.2% of GDP. The recommendation is that this correction be achieved raising taxes and reducing non-capital spending by

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[9]Giavazzi and Pagano (1990) have studied the two most famous expansionary consolidations: Ireland and Denmark in the 1980s. In the Danish case monetary policy played an important role in dampening the effects on the economy of the fiscal consolidation. It is also true, however, that a rather accommodative shift in monetary policy was made possible by the credibility of fiscal policy which produced a sharp fall in the country's risk premium. In the Irish case the shift in fiscal policy was accompanied by a real depreciation.

approximately the same amount, about 2% of GDP each (one half of the reduction in non-capital spending is obtained by cutting subsidies, which drop from 2 to 0.9% of GDP). Of the room thus created, 3.7% of GDP, 1.5% is used to increase capital spending, 2.2% to cut the primary deficit.

The composition of the fiscal consolidation path recommended by the FC compares well with the lessons from successful consolidations discussed above. Really successful consolidations, however, would probably cut in half the increase in the tax burden and further reduce spending on subsidies. The proposal of a 50% increase in capital spending is in line with what we have learned from expansionary stabilizations.

3.3 The Golden Rule

Chapter 9 of the FC Report states that a long term target for the Central government should be to maintain zero revenue deficit. This means that the government should only borrow to finance public investment, *i.e.* follow what is called the "Golden Rule". In this Section I first show what a golden rule implies for the long run debt target and how it should be implemented. In the following paragraph I observe that the FC plan differs from a "correct" golden rule in an important way. Then I shall review the fiscal path proposed by the FC in the light of the budgetary developments since the FC report was published. The arguments pro and against a golden rule, and the experience of U.S. states that implement such a rule, are discussed in Appendix 1.

3.3.1 The Golden Rule and the arithmetic of public investment [10]

Let r be the cost of debt service, n the growth rate of GDP, δ the rate of capital depreciation, e the expenditure on capital maintenance (per unit of capital) and ϑ the gross financial rate of return on public capital. (For simplicity let's assume inflation is zero, otherwise fiscal variables should be adjusted for inflation). In general $\vartheta < r + \delta$: public investment is worthwhile from a social point of view although its net financial rate of return, $\vartheta - \delta$, may be lower than the financing cost, which in turn we expect to be smaller than the social rate of return on government projects. Let k be the stock of public capital, i gross public investment, so $i = \dot{k} + (n+\delta)k$, and b the stock of public debt, each as a fraction of GDP.

The government's budget constraint is

$$\dot{b} = g - t + i - \vartheta k + ek + (r - n)b$$

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[10]This point is developed in Blanchard and Giavazzi (2007).

where t and $(g+i)$ denote, respectively, taxes and government spending including gross investment but net of interest.

If the country runs an *overall budget balance*

$$g - t + i - \vartheta k + ek + rb = 0$$

so that

$$\dot{b} = -nb$$

the debt ratio will eventually drop to zero.

The rate at which public capital depreciates, δ, is not exogenous: it depends on the level of maintenance, m, $\delta = \delta(m)$, with $\delta' < 0$, and possibly $\delta'' > 0$. By spending more on maintenance the government can lengthen the average life of public infrastructure, thus reducing δ. Expenditure on maintenance is an increasing function of the level of m that the government aims to reach, that is $e = e(m)$, $e' > 0$.

Suppose now, as is usual for firms, that only capital depreciation and maintenance expenditures are included in current spending (net investment is excluded), and *impose the rule that only current spending be balanced*. This implies:

$$g - t + [\delta(m) + e(m) - \vartheta]\, k + rb = 0 \tag{1}$$

so that

$$\dot{b} - \dot{k} = -n(b - k) \tag{2}$$

over time $b \Longrightarrow k$, no matter what the initial level of b is. Eventually the entire stock of public debt is backed by public capital. If the stock of public capital, as a fraction of GDP, is constant, the government will eventually run a deficit equal to nk. Note that (1) differs from the way the golden rule is normally implemented: to achieve (2) current spending must include capital depreciation and maintenance costs.

If a country follows the correct golden rule (1), in the transition to the steady state

$$t - g - rb = [\delta(m) + e(m) - \vartheta]\, k \tag{3}$$

tax revenues, net of $g + rb$, must be large enough to finance the excess of depreciation and maintenance expenditure over the financial return ϑ.

What is the optimal level of m? Assume for simplicity that both $\delta(m)$ and $e(m)$ are quadratic and let m_0 be the level of maintenance such that the expected lifetime of a piece of public capital would tend to be infinite: $\delta(m) = (m - m_0)^2$, $e(m) = m^2$. In this case $m^* = 1/2\ m_0$. In order to minimize the tax burden,

expenditure on maintenance should be one half of what would be necessary to bring physical depreciation down to zero. This is just an exercise, but it highlights an important channel: the effect that maintenance has on the average life of public capital.

3.3.2 The FC's Golden Rule and the correct Golden Rule

The FC defines the golden rule as a rule *"requiring the government not to use national savings to finance consumption."* (p. 128). However, when it implements the rule, it does not recognize that capital depreciation is part of government consumption. This assumption is not surprising: the FC takes as a given India's public accounting rules that do not—as far as I understand–account for capital depreciation. Future Finance Commissions should, however, be more ambitious and explicit recommend a change in accounting rules so that capital consumption is correctly included among current expenditures.

How far is India from the correct golden rule? I start, in Table 3 (which uses data for 2010-11 and where all numbers are expressed as per cent of GDP), by computing the overall deficit that would be compatible with the rule. To do this we need to make an assumption about capital depreciation. In 2010-11 gross public investment amounted to 5% of GDP. With low maintenance expenditures, and thus a high depreciation rate (assume 10%, the middle column of the table), this translates this into an increase in net public capital of 2% of GDP—in other words an amount of capital expenditure equivalent to 3% of GDP went to replace existing projects. As a result, the maximum deficit admissible under the correct golden rule would be 2% of GDP. The actual 2010-11 deficit (see Table 4) was four times as large, thus violating the golden rule. Assume instead $\delta = .05$ (the third column in Table 3). In this case the increase in the net capital stock, and thus the maximum admissible deficit, would be 3.5%, still smaller than the actual deficit, but closer.

Table 4 shows the golden rule as envisaged by the FC. The Commission's plan achieves *its definition* of the golden rule sometime between 2013 and 2015. In the last year of the plan capital expenditure exceeds the fiscal deficit by 1,5% of GDP, that is the government issues an amount of new debt smaller than the increase in the *gross* stock of public capital.

What about the *correct golden rule*? In the last year of the FC's plan (2014-15) the correct rule would be satisfied for a 5% depreciation rate: in this case the admissible deficit would be 6% of GDP, equal to the actual planned deficit. Thus, for the FC's plan to be consistent with the golden rule, maintenance expenditures need

to be such as to guarantee that the life of public projects is on average 20 years. With lower maintenance expenditures the FC plan is no longer consistent with the correct definition of the golden rule.

Assuming that this was the case—namely that capital depreciated too rapidly— India might need to reallocate current spending: increase expenditure on maintenance while cutting other items of the current budget. A change in public accounting rules might also be necessary. But there is also a political economy aspect to this. The fact that investment projects are often sponsored by the central government, while maintenance is the responsibility of individual states, suggests a reason why maintenance expenditure might be too low. Those who benefit from inaugurating a new bridge are not the same politicians who then are responsible for maintaining the bridge: maintenance involves no inaugurations. A simple board posted near each piece of public capital indicating the name of the politician responsible for its maintenenace might help.

Once the right incentives are in place, where could the additional resources for maintenance expenditure be found? An obvious suggestion is to find them through a reduction of subsidies, cancelling them entirely by 2015. More generally, the lack of knowledge of capital depreciation and maintenance, and the little attention dedicated to this important aspect of fiscal policy, suggest that the next Finance Commission might be given a special mandate to investigate it.

3.3.3 India's fiscal space under the Golden Rule: about 2% of GDP

How large is India's fiscal space? To answer this question I shall no longer use the data in Table 4, that is the data available at the time the FC issued its report. Since then conditions have changed: there have been good news on the debt, less good news on the budget. In building Table 5 I have used the fiscal path projected by the IMF in February 2011 (India: Country Report No. 11/50). This path (which covers the general government) starts from a larger 2010–11 deficit (9.4% of GDP instead of 8.3%) but a slightly lower debt level: 74% instead of 78.3%. The IMF projection still achieves the debt target set by the FC (67.8%), but a year later, in 2015-16. The only change I make, relative to the path projected by the IMF, is a slightly lower overall deficit in the last year: 6% as opposed 6.5%, so as to maintain the condition that in the last year the plan (for a 5% depreciation rate) this is consistent with the "correct" golden rule—maintaiing the FC assumption of an amount of gross public investment equal to 7.5% of GDP (the are no assumptions about public investment in the IMF plan.)

Could the stock of net public capital grow faster? In the two rows at the bottom of Table 5 I have computed the level of the primary deficit that would be consistent with a constant debt-to-gdp ratio (to do this computation I have used the IMF assumptions about the average cost of debt service, inflation and output growth). Since GDP is growing at 8%, and the real interest rate is around 5% (it is even lower in 2010-12), along the path converging to the golden rule the ratio of public debt to GDP is falling. This is because the actual primary deficit is smaller than the level that would be needed to keep the debt ratio constant. In the last row of Table 5 I refer to this difference as the *fiscal space* available.

In the five-year period considered by the FC (2010/11-14/15) this space is used to reduce the debt ratio. But once the debt target is achieved the available fiscal space amounts to 2.2% of GDP: the debt stabilizing primary deficit is 2.3%, while the actual primary deficit is virtually balanced (0.1%). In other words, in five years' time India could increase public investment by an amount equivalent to 2.2% of GDP, from 7.5 to 9.7% while keeping the debt ratio constant

With 5% depreciation, an amount of gross investment equal to 9.7% of GDP (7.5% plus 2.2%) would translate (since the stock of public capital is today about 30% of GDP) in an increase in the net capital stock (as a share of GDP) of about 8% per year. Are there reason why India should forgo this opportunity, especially if it were to follow the correct golden rule, so that over time $b \implies k$? Why should India not stabilize debt at around 70% rather than reduce it further? 70% is also far enough from the threshold (90%) where, according to the historical experience documented in Reinhart and Rogoff (2010), countries sometime encounter a non-linearity and debt becomes an impediment for growth.

3.4 Accelerating public investment: an opportunity, and the risks it entails

An acceleration of public investment would meet the objectives of India's 11th Plan (2007/08-2011/12). There are, however, two risks associated with this strategy. First, the attempt to speed up investment could run into a number of roadblocks: land acquisition, multiple clearances, capacity constraints, governance issues, along with various sectorial concerns[11]. I have nothing specific to say on these issues (they are clearly discussed in Annex 6 of IMF 2011), except that if this was the main source of

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[11]One might also be concerned by the possibility that an acceleration of public investment might drive up corruption .

concern it would call for policy action at the micro, not the macro level. The second concern is the macroeconomic risk associated with the IMF projections.

Over the past 20 years the main factor contributing the stability of India's debt ratio has been a growth rate in excess of the average interest cost of the debt (see the lower panel of Figure 5). This has allowed the country to run primary deficits year after year, without significantly raising the debt ratio. For how long can India rely on real interest rates so much lower than the growth rate. The upper panel of Figure 5 shows that China and India are two outliers: in most countries the real rate is close to the growth rate of the economy. Even in the United States, where monetary policy has been extremely loose for ten years, the growth rate has exceeded the real rate by only 2 percentage points, a fraction compared to India. If India had been similar to Brazil, in order to keep the debt stable it should have run primary surpluses of the order of 6 percent of GDP, a very large difference compared to India's actual fiscal stance.

What happens when the difference between the growth rate and the real rate of interest falls, while a country keeps following the golden rule? Both public debt and the long run level of public capital (both as a fraction of GDP) will increase. Beyond a certain level—maybe at the Reinhart and Rogoff 90% threshold—the golden rule would no longer be credible, since it would imply an incredible amount of public capital. The experience of some countries suggests that the difference between growth and the real rate can turn around pretty fast. When that happens, however, adjusting the budget to avoid an ever increasing debt level may take too long to prevent a large accumulation of debt.[12]

A reason not to take $g > r$ for granted is suggested by the Rajan (2007) report. The report notes that one of the reasons for the relatively low cost of debt service

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[12]Relying on the excess of the nominal growth rate over the cost of debt service is a risky strategy. Italy from the 1950s to the 1970s (see Giavazzi and Spaventa, 1988) used large primary deficits to finance an expansion in the welfare state. For three decades growth (mostly in the 50s and 60s), inflation (in the 1970s) and financial repression (in all three decades) kept the cost of debt service below the nominal growth rate of the economy, thus limiting the build-up of the debt. But in the early 1980s, when domestic financial markets were liberalized and world real rates jumped up, the debt started to increase rapidly: in just ten years the debt ratio raised from 60 to 12th0 per cent (see Figure 6). The reason is that when the real cost of debt service increased, fiscal policy took a long time to respond. It took ten years for the government to realize what was happening , cut the primary deficit and bring it to a level consistent with the higher level of $(r - g)$.

in India has been financial repression, in the form of the government inducing state-owned banks to absorb large quantities of public bonds at low interest rates. Using banks as a source of cheap debt financing through the statutory liquidity ratio, has long-term economic costs because it holds back efficient financial intermediation. "A roadmap for eliminating such elements of financial repression – notes the report – thus needs to go hand in hand with the restoration of fiscal health." (p. 38).

The Rajan report points to three reasons why in India the cost of debt service may be on the rise:

- the gradual opening of the capital account, which will eliminate the difference between foreign rates and domestic risk-adjusted interest rates. The report suggests that, given the latent demand among foreign institutional investors for government debt, this may be a good time to consider liberalization on this front. Financial liberalization would add depth to the government bond market but, notes the report, would also improve incentives for fiscal discipline by eliminating the implicit tax on domestic banks;

- the process of bank privatization with the (partial) transfer of ownership from the state to private shareholders will make it increasingly difficult for the government to induce banks to buy bonds at low interest rates. privatization will also need to be accompanied by a reduction on the Statutory Liquidity ratio to a level consistent with prudential need, thus eliminating another channel for cheap debt financing;

- finally, the creation of an independent Debt Management Office (DMO), which will provide an opportunity to think about and incorporate best practices in this field. Since independence of the DMO staff from the government is the linchpin of successful debt management this is another reason why the government will loose the ability to put pressure on banks. (Appendix 2 discusses the governance of the French Debt management office, Agence France Trésor, which could provide an example for the new Indian agency)

To these concerns I would add the observation that real rates in India are low also because the country has a tradition of low inflation. As inflation is on the rise, expectations and nominal rates will eventually adjust. The signs of a shift in the marginal cost of debt service have already appeared: in the last two years the interest rate on new issues has exceeded the average cost of debt service by about 2 percentage points.

For a given shift in $(g - r)$ the lower is the debt ratio the smaller is the shift in the primary balance required to keep it stable. This would suggest using the fiscal space available to reduce the debt ratio below the current 70% target. It is also true, however, that the ability to keep the growth rate around 8% depends on the availability of good infrastructure: airports, public transportation, more efficient cities. Giving upon on additional public investment for concerns about a slowdown of growth could be self-defeating.

This paper stops here. Thanks to prudent fiscal policies, some financial repression and high growth, India has created significant fiscal space that could be used to accelerate public investment and help consolidate high growth.[13]. Accelerating public investment could make high growth more sustainable and thus reduce the macro risk associated with a possible increase in $(g - r)$—reduce, but not eliminate: I see this as the main macroeconomic choice facing India today.

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[13] For this to happen public projects should be carefully targeted and accompanied by micro policies designed to clear bottlenecks. For instance, to be productive, to be completed in time and to avoid corruption, public investment should be concentrated in a few, easy-to-monitor projects As already mentioned in the introduction, the Delhi metro is a good recent example, and could also be a model for making Indian cities more efficient—an objective which requires the temporary shift of the population while degradated inner cities are rebuilt. Such shifts are only possible in the presence of an efficient public transport system.

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Appendix 1

Is the Golden Rule a good idea ? The debate and the experience of U.S. states

The idea of separating capital spending from the current budget runs up against three common objections.

- What matters is overall capital accumulation, not its distribution between private and public capital. Lower public capital will be compensated by a higher stock of private capital. What matters is the general equilibrium effect: there is no ground for giving privileged status to a specific spending item. The simple answer here is that all public investment projects with a sufficiently high social rate of return should be implemented. This is what the modified rule allows, since it eliminates cash constraints. So should all private investment, with a sufficiently high private rate of return.

- Capital budgets distort expenditure in favor of physical assets and away, for instance, from investment in human capital. Capital budgets are not a way to avoid difficult decisions concerning the choice among alternative forms of current expenditure: the choice whether to invest in school teachers or in office clerks is there whether or not the government runs a capital budget. Capital budgets cannot protect investment in school teachers, but they make it a bit less likely that useful infrastructure investment is sacrificed in order to raise wages in the public sector.

- Capital budgets remove the pressure to lower the stock of public debt. The answer to this objection is that a rule that forces the stock of public debt to zero and introduces a financing constraint on investment expenditure appears to be irrational. The modified rule too puts downward pressure on the stock of debt, but it doesn't drive it to zero: eventually the debt ratio approaches the stock of public capital-typically a smaller number than the current debt ratios in most countries.

Rules that allow net public investment to be financed by borrowing need to be complemented by rules that define what can be counted as public investment– something like ISA accounting rules. But this difficulty should not be an argument for justifying rules that may result in worthwhile projects not being undertaken because of cash constraints.

The FC is clearly aware of these risks, as highlighted in paragraphs 9.19 - 9.33 of its Report.

The idea of separating investment expenditure from the current budget, while considering capital depreciation as current government expenditure, has a long tradition in economics, dating back at least to Musgrave (1939). Proponents of capital budgets contend that unified budgets are biased against capital expenditure. Opponents argue that separate budgets raise the incentive to lobby for capital spending and result in inefficiently high expenditure on physical assets, at the expense of intangibles such as health or education. There is also an extreme view which states that accounting rules by themselves do not affect the level or composition of spending. What is the evidence?

U.S. states provide a good testing ground, since budgetary procedures differ from one state to the other. Poterba (1995) has studied this experience asking whether the level and composition of government spending is affected by the use of separate budgets for capital and current expenditures, and by the use of pay-as-you-go (PAYG) constraints in financing capital projects. The study has the drawback of using rather old data: the information on state budgets is for 1962, a year for which a detailed survey exists of budgetary procedures in individual states. The data allows to distinguish among states that make no budgetary distinction between capital and operating expenditures (at the time of the study there were 20 such states out of 50), and those that have separate budgets. Among the states that use separate budgets, the data also identify those using multi-year capital budgets, that is physical and financial plans for capital expenditures extending beyond the operating budget cycle. Twelve states in this group had delegated the administration of capital projects to specialized agencies.

The results suggest that state capital budgets are associated with higher levels of capital spending: about one third higher. The data refer to capital expenditures excluding highways, that is, primarily, institutions of higher education, health and hospital facilities, natural resource projects, such as parks, and state prisons. PAYG constraints on the financing of public projects are associated with lower levels of capital spending, some 20 per cent lower. There is no evidence that capital budgets affect the level of non capital spending—a finding which suggests that (i) the states with capital budgets are not those which spend more on all public goods, not only on investment, nor (ii) are these states simply re-defining non-capital spending as capital outlays.

Poterba's results run against the view that public accounting practices are simply a veil, with no impact on budget outcomes. They support a number of

recent studies[14] which suggest that fiscal institutions exert real effects on public policy outcomes.

Appendix 2

The governance of Agence France Trésor

The French public debt is managed by an independent agency, Agence France Trésor (AFT). The agency is tasked with handling public debt and treasury management. It was created (in 2001) in the form of a department of the Ministry of the Economy managed by a Chief Executive who reports to the Director General of the Ministry, a political appointee. The AFT website (www.aft.gouv.fr) illustrates how it is organized: what I wish to point out here is how the mechanism created to guarantee the independence of the agency. This happens through a Strategic Committee of nine independent experts (a majority of whom are non-French nationals) interposed between the agency and the Director General. The experts' task is described as "providing AFT with advice on the main lines of government issuing policy; offering its own interpretation of the principles underlying government issuing policy and treasury management and to state its views on existing practices and contemplated developments." In reality the main task of the committee – which meets twice a year – is to make sure that the Ministry has not exercised undue pressure on the agency forcing it to deviate from best practice in debt management. The AFT is also assisted by a few Primary Dealers, whose role is to advise and assist the agency on matters related to issuance policy and debt management, as well as on questions of a more general nature pertaining to workings of the market. Primary dealers are subject to certain obligations, which include participating in auctions, placing treasury securities and maintaining a liquid secondary market. In practice primary dealers are the main primary market participants. Since their group is a mix of domestic and international financial institutions, and auctions are run through a "bid price" system, it is impossible for the government to issue paper at below-market yields.

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[14]See e.g. Poterba and von Hagen (1999)

Table 1-a
RESOURCES TRANSFERRED FROM THE CENTER TO THE STATES
(% Indian GDP)

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Share of States in Central taxes	2.3	2.4	2.5	2.6	2.9	3.1	2.9	2.7
Grants from the Center to States and Union Territories (*)	1.8	1.8	1.7	2.0	2.1	2.2	2.2	2.3
Loans (gross) from the Center to the States and Union Territories	1.2	0.9	0.8	0.2	0.1	0.1	0.1	0.1
Repayment of loans by States and Union Territories	-1.2	-2.2	-1.8	-0.2	-0.4	-0.2	-0.2	-0.1
Gross transfers to States	**5.2**	**5.1**	**4.9**	**4.7**	**5.1**	**5.4**	**5.3**	**5.1**
Net transfers to States	**4.0**	**7.3**	**6.7**	**5.0**	**5.4**	**5.6**	**5.4**	**5.2**
Subsidies				1.2	1.2	1.3	2.2	1.7
Explicit and Implicit Transfers (%GDP)				**6.2**	**6.6**	**6.9**	**7.6**	**6.9**

(*) includes: State Plan Schemes.
Central Plan Schemes. Centrally
Sponsored Schemes. Special Plan
Schemes and non Plan Grants

Source: Indian Public Finance
Statistics 2009-2010

Table 1-b

BREAKDOWN OF TRANSFERS: 1984-2010
Source: 13 Finance Commission. Annex 4.1

		1984-89	1989-95	1995-00	2000-05	2005-10
Finance Commission Transfers	Share in Central Taxes	53.5	53.0	62.1	58.4	56.5
	Grants	6.7	8.5	6.6	11.0	11.6
	Total	60.1	61.5	68.6	69.4	68.0
	Plan Grants (*)	35.8	35.9	29.5	28.7	28.6
	Non-Plan Grants	4.1	2.6	1.9	2.0	3.4
Other Transfers	Total	39.9	38.5	31.4	30.6	32.0
Total Transfers		100.0	100.0	100.0	100.0	100.0

(*) includes: State Plan Schemes. Central Plan Schemes.
Centrally Sponsored Schemes. NEC/Special Plan Schemes

Table 1-c

RESOURCES TRANSFERRED FROM THE CENTER TO THE STATES
(% of total central revenues)
Source: 13 Finance Commission. Annex 4.2

	1984-89	1989-95	1995-00	2000-05	2005-10
Finance Commission Transfers	22.8	24.8	24.6	24.5	26.2
Other Transfers	15.1	15.6	11.2	10.8	12.3
Total Transfers	37.9	40.3	35.8	35.3	38.5

Table 2 - The 13th FC Fiscal Consolidation Plan: General Government (% GDP)

	2010/11	2011/12	2012/13	2013/14	2014/15	Change: 14/15-10/11
Interest payments	3.5	3.5	3.4	3.3	3.1	**-0.4**
Primary deficit	2.6	1.6	1.2	0.2	0.4	**-2.2**
of which:						
tax revenue	11.4	11.8	12.2	12.7	13.2	**+1.8**
non-plan expenditure	6.5	6.0	5.4	5.0	4.6	**-1.9**
of which						
subsidies	1.7	1.5	1.3	1.1	0.9	**-1.1**
capital expenditure	3.0	3.1	3.8	3.9	4.5	**+1.5**
Debt-GDP	53.9	52.5	50.5	47.5	44.8	**-3.6**

Source: FC Report. Table 9.3

Table 3 - Admissible deficit under the Golden Rule with two different assumptions about the depreciation of public capital   (data for 2010-11)

(Source: author's computations)

depreciation rate (public capital)	10%	5%
gross government investment	5%	5%
capital depreciation	3%	1.5%
net fixed public capital stock (Centre for Monitoring Indian Economy. Business-Beacon. *Net fixed capital stock by institution*. 2008-09)	30%	30%
net increase in public capital = admissible overall deficit under the GR	2%	3.5%

Table 4 - The 13th FC Fiscal Consolidation Plan: General Government (% GDP except otherwise indicated)

(Source: Thirteenth Commission Report. Table 9.3 for the Centre and Annex 9.3 for the states)

|	2010-11	2011/12	2012/13	2013/14	2014/15
Fiscal deficit	8.3	7.9	7.3	6.0	6.0
Capital expenditure of which net increase in capital:	5.0	6.0	6.7	6.8	7.5
- 10% depreciation	2.0	3.0	3.7	3.8	4.5
- 5% depreciation	3.5	4.5	5.2	5.3	6.0
Debt-GDP	78.3	76.6	74.3	70.8	67.8

Table 5 - The 13th FC Fiscal Consolidation Plan: General Government (% GDP except otherwise indicated)

	2010-11 as envisaged by the FC Fall 2009	2010-11 as envisaged by the IMF 02/2011	2011/12	2012/13	2013/14	2014/15	2015/16
Fiscal deficit	9.4	9.6	9.0	8.1	7.4	6.9	6.0
Capital expenditure of which net increase in capital:			6.0	6.7	6.8	7.5	7.5
- 10% depreciation			3.0	3.7	3.8	4.5	4.5
- 5% depreciation			4.5	5.2	5.3	6.0	6.0
Debt-GDP:							
- IMF		74.0	73.3	72.8	71.5	69.9	67.8
- FC path	80.6		76.6	74.3	70.8	67.8	
Debt-stabilizing primary surplus assuming growth and debt service costs as forecasted by the IMF							
Average nominal cost of debt (%)		7.7	7.7	10.6	10.3	10.1	9.9
Real GDP growth (%)		9.0	8.1	8.1	8.1	8.1	8.1
Inflation (GDP deflator) (%)		9.0	6.0	5.2	5.2	5.2	5.2
Ex-post average real cost of debt		- 1.3	1.7	5.4	5.1	4.9	4.7
(g – r)		10.3	6.4	2.7	3.0	3.2	3.4
Primary deficit		4.6	4.2	1.3	0.7	0.5	0.1
Debt-stabilizing primary deficit (*)		7.9	4.7	2.0	2.2	2.2	2.3
Fiscal space available (debt-GDP constant at previous year's level)		3.3	0.5	0.7	1.5	1.7	2.2

Source: Thirteenth Commission Report. Table 9.3 for the Centre and Annex 9.3 for the states and IMF. India – 2009 Article IV Consultation.
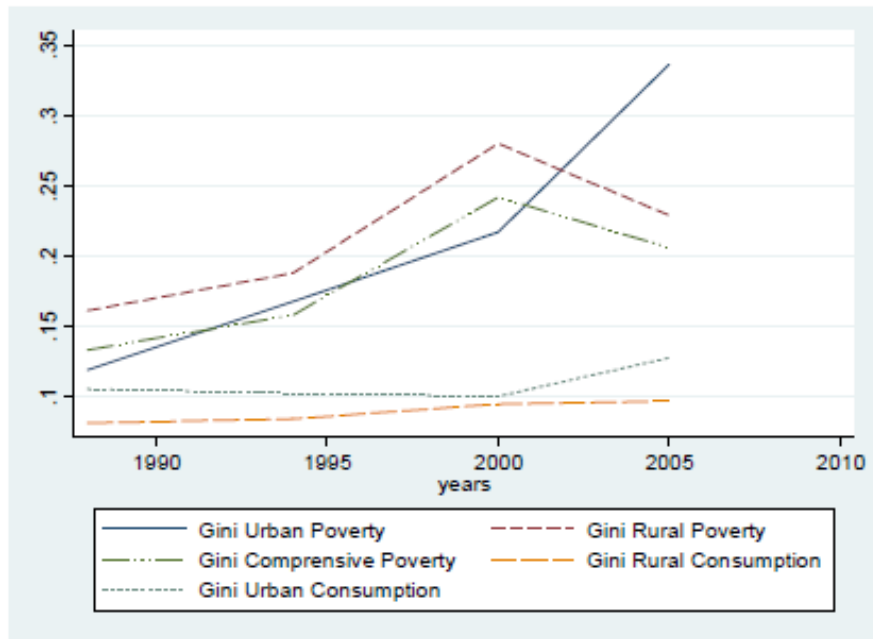
Country Report 10/73. Table I.1

(*) $(g – r)\, b_{t-1}$
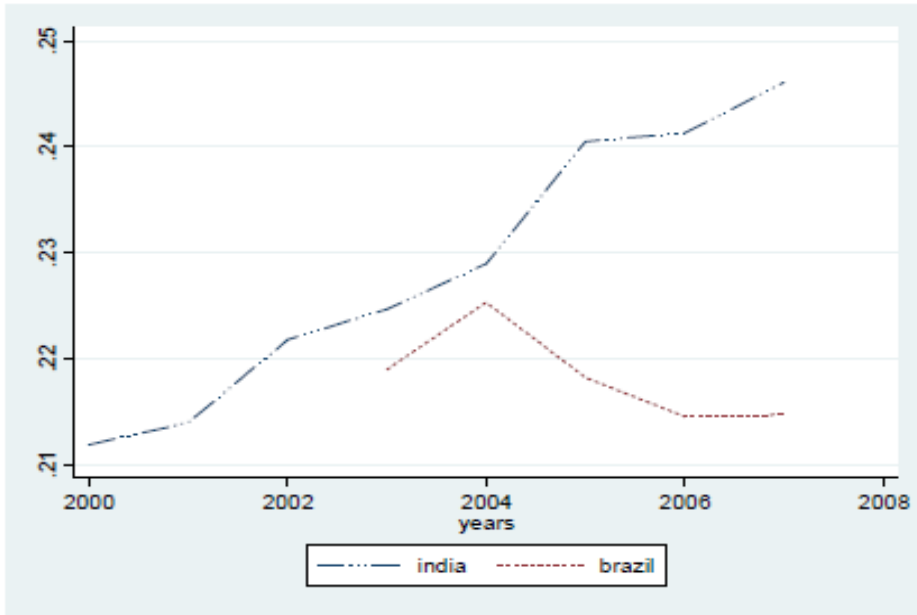
Figure 1

Gini index computed on the per-capita income of Indian and Brazilian states

Figure 2

India: Gini indexes computed on the per-capita consumption and poverty rates of Indian states and territories
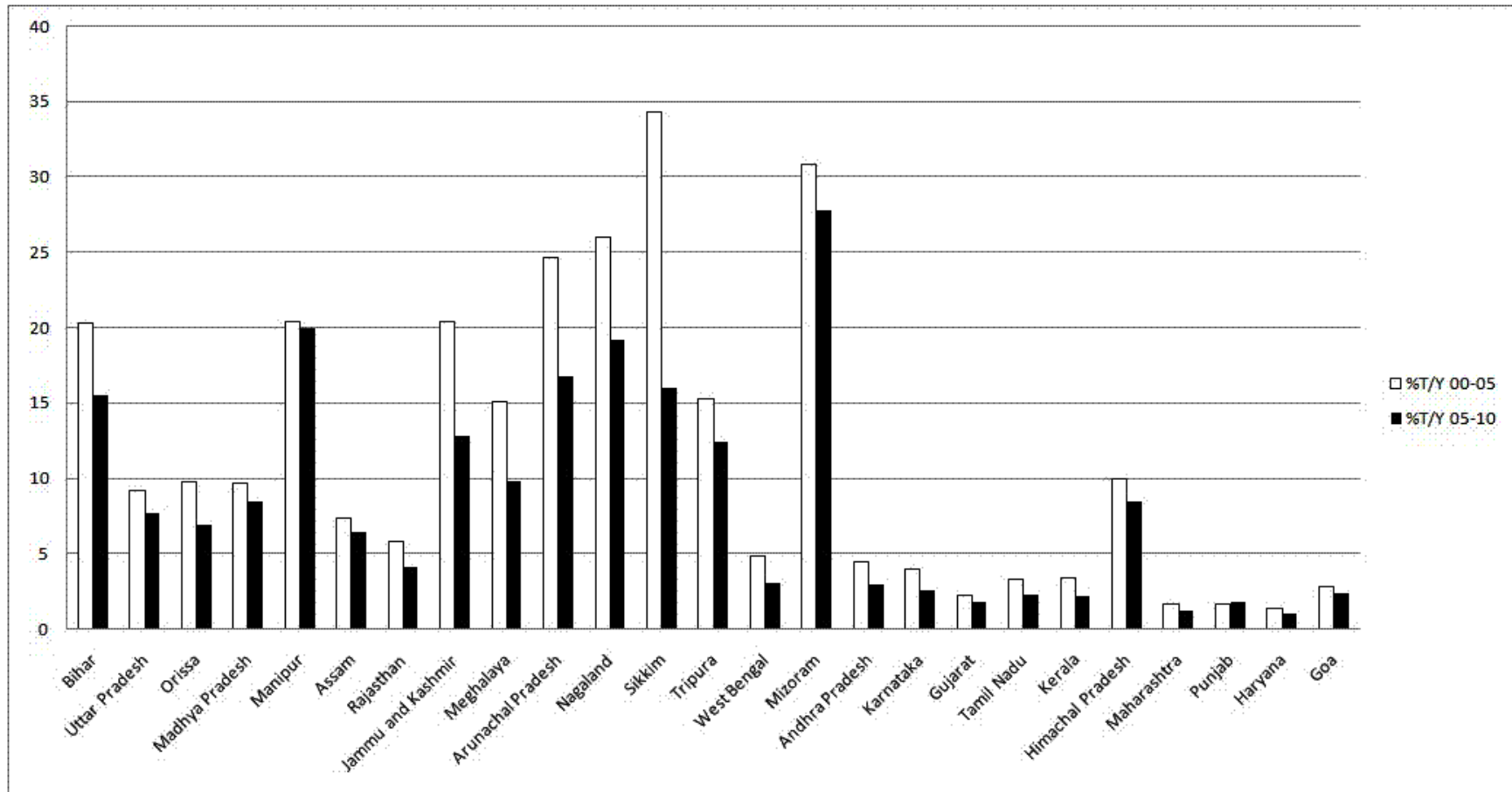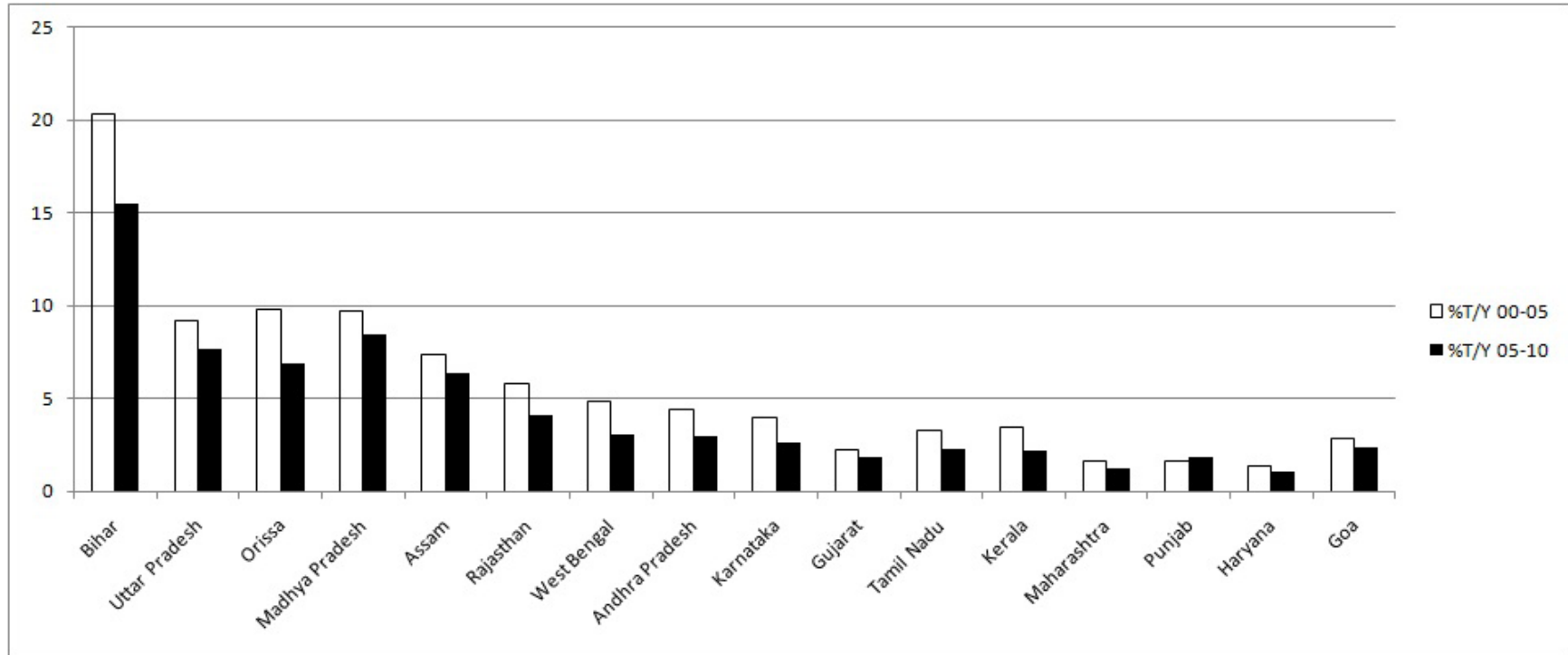
Figure 3

Total Transfers (% of state GDP). 25 out of 28 states (see footnote 5)
States are ordered according to per-capita GDP, poorest states first

Figure 4

Total Transfers (% of state GDP). Border states are excluded (See footnote 5)
States are ordered according to per-capita GDP, poorest states first
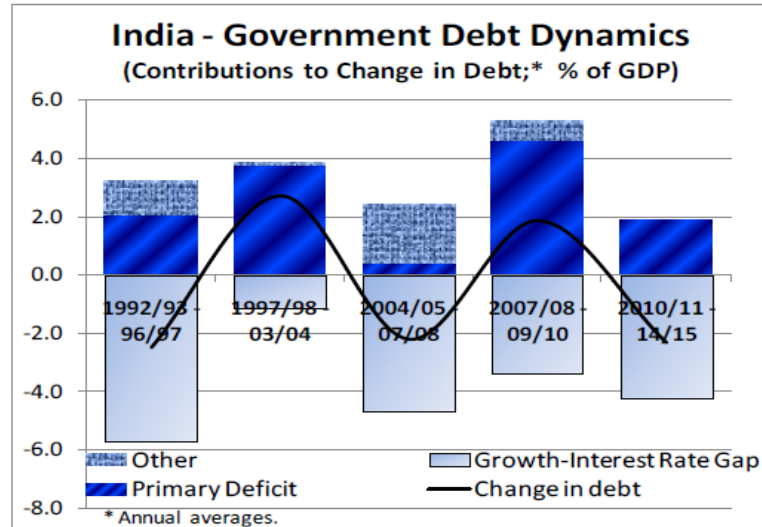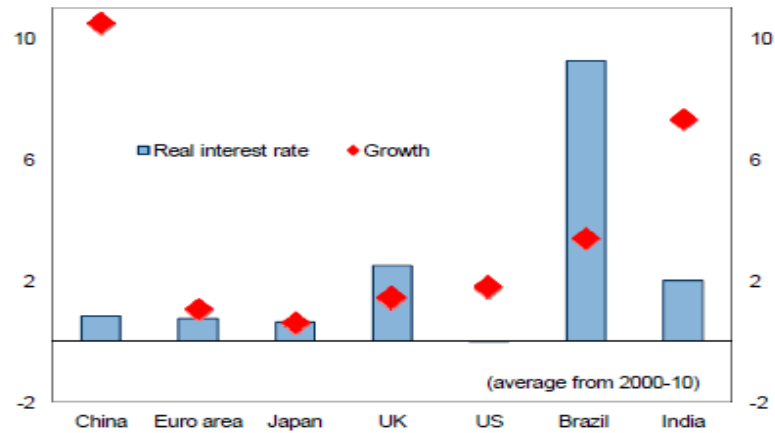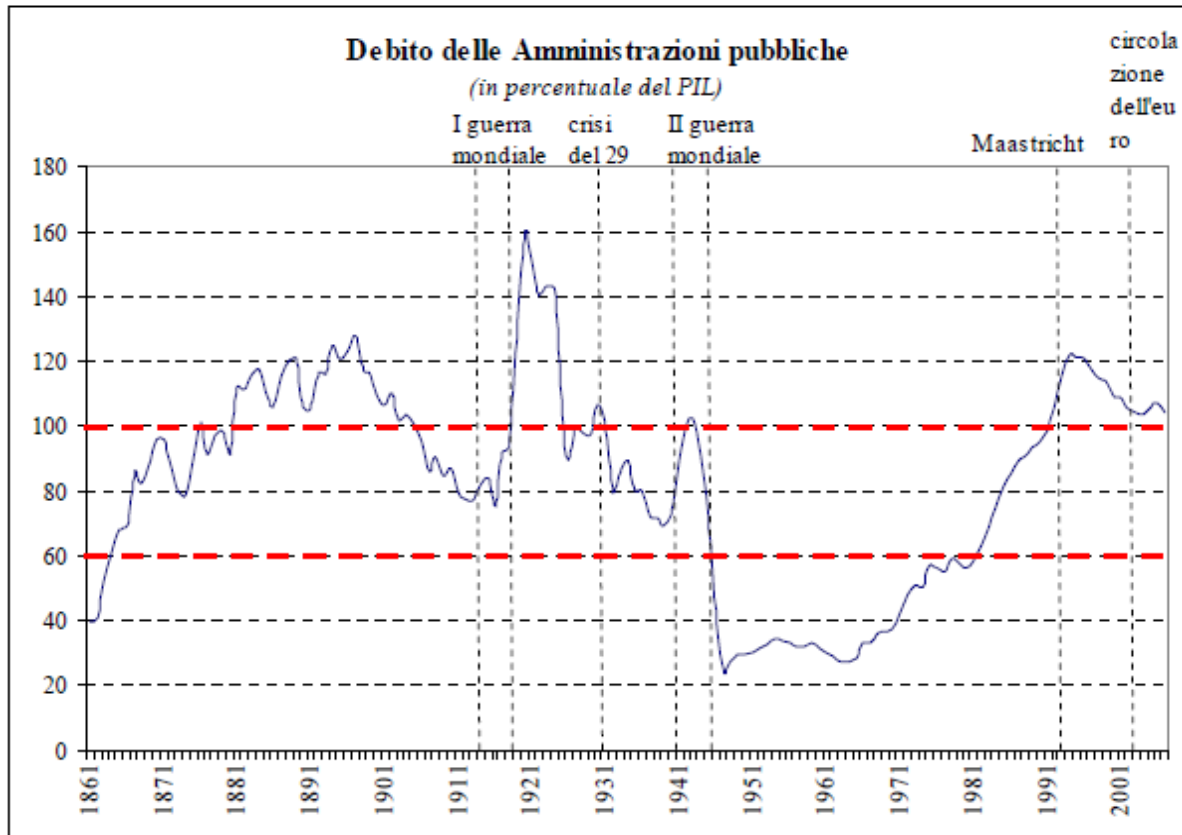
Real interest rates are well below the growth rate.

Legend: □ Real interest rate ◆ Growth

(average from 2000–10)

China   Euro area   Japan   UK   US   Brazil   India

India - Government Debt Dynamics
(Contributions to Change in Debt;* % of GDP)

1992/93 – 96/97   1997/98 – 03/04   2004/05 – 07/08   2007/08 – 09/10   2010/11 – 14/15

Legend:
▦ Other   □ Growth-Interest Rate Gap
▨ Primary Deficit   — Change in debt

* Annual averages.

Figure 5

Debito delle Amministrazioni pubbliche
(in percentuale del PIL)

I guerra mondiale · crisi del 29 · II guerra mondiale · Maastricht · circolazione dell'euro

Figure 6
Italy - Ratio of Public Debt to GDP, 1861-2005
Source: Bank of Italy