

Fiscal Policy for Growth: Identifying High-Value Fiscal Policies

Summary

The impact of fiscal policies on poverty and inequality depends not only on who receives what but also on the degree to which these policies support growth in the short and long run. The comprehensive valuation of a tax or spending policy considers the full impact of the policy on both direct and indirect beneficiaries, and will depend on the characteristics of the local economy.

This chapter considers the key elements of valuing fiscal policies and how information on the full value of policies can inform policy challenges of the current moment—challenges such as fiscal consolidation that minimizes impacts on poverty and inequality, and whether to respond to rising food prices with cash transfers or subsidies.

Drawing on recent evidence, the chapter discusses the knowledge about high-value policy choices. Three broad findings come out of this discussion: (1) policies that improve early life outcomes are generally of high value, across many contexts; (2) policies that bring transformative growth tend to be of high value; and (3) spending to address market failures is often of higher value than subsidizing behavior in the absence of positive externalities.

Despite the evidence, high-value policies can be hard to prioritize precisely because their benefits are not realized today but accrue over the long term. For politicians, this time frame does not align with political realities that require immediate results, and long-run benefits may also have less value to some households that are more present biased or governments that face high costs of borrowing. As a result, fiscal decision-making can often overlook long-run growth benefits.

The chapter concludes with a discussion on how improving the efficiency of spending can increase the value of spending.

Introduction

All government policies are made under tight resource constraints. This is particularly true in developing economies, where raising tax revenue is challenging, borrowing is costly, and government aid is limited. The trade-offs are particularly apparent today; even as governments decide which fiscal policies are most suitable for achieving an inclusive recovery and long-run growth, they must deal with inflationary pressures and rising fiscal deficits and debt burdens, with little space for fiscal

Chapter 6 online annex available at <http://hdl.handle.net/10986/37739>:

6A. Additional Material on the Marginal Value of Public Funds.

policy to support the recovery and prepare for ongoing and future crises. Many countries now confront the need to raise revenue, reduce spending, or both to escape debt distress.

Thus, governments face difficult fiscal trade-offs: Which policies should they spend scarce resources on? Should they reduce spending on cash transfers in order to finance spending on schools, or should they finance such spending by raising taxes, or by taking on more debt? Furthermore, which tax policies raise revenue most efficiently?

Historically, fiscal policy decisions in moments of tight fiscal space and debt crises have often hurt the poor, both in the immediate term and in limiting the opportunities later available to them. It is essential to navigate the current challenge in ways that do not further impoverish the poor today or reduce the opportunities they might enjoy tomorrow.

Making these difficult policy choices in a way that reduces poverty requires assessing both who benefits from a policy and the value of a policy in terms of its impact on growth or of the other outcomes it brings. The incidence analysis presented in chapter 5 explored who benefits from different policies and by how much, and gives a good indication of short-term impact. Often, a discussion of the impact of fiscal policies on poverty and inequality focuses only on those factors, but a full assessment also requires assessing the value of a policy. This chapter explores how to assess the value of tax and spending decisions in a way that counts both their immediate impact and their long-run impact on the growth of household incomes and subsequent government revenue. The value of a given policy needs to consider its full impact on beneficiaries, both the intended direct beneficiaries and indirect beneficiaries not directly targeted by the policy. The value will depend on the characteristics of beneficiaries and the nature of the local economy—see, for example, chapter 4’s discussion on the impacts of transfers during the pandemic—so an approach to policy valuation needs to consider these differences in context.

This information helps governments choose policies. For example, how can governments raise taxes or reduce spending in a way that minimizes impacts on poor people, or should they choose cash transfers or subsidies to address rising food prices? Choosing policies requires a welfare judgment as well: How much does a society value an additional dollar in the hands of the beneficiaries of one policy versus the beneficiaries of another? Choices will also reflect the challenge of incorporating long-run benefits into policy decisions or the specific political economy of a given country.

The chapter discusses current knowledge about *high-value policy choices*—that is, policy choices that achieve lasting benefits relative to their cost. It highlights three broad findings: (1) policies that improve early life outcomes are typically of high value, across contexts; (2) policies that bring transformative growth tend to be of high value; and (3) spending to address market failures is often of a higher value than subsidizing behavior in the absence of positive externalities (the presence of a positive externality, however, may justify a subsidy). The reality of fiscal decision-making is that it can be hard to prioritize these high-value investments, and the chapter also presents a brief summary of these constraints.

Because increasing the efficiency of spending likely also increases the value of spending, by freeing resources for other uses, the chapter concludes with a discussion of some aspects of how to increase efficiency.

Measuring the value of fiscal policies

A measure of a policy’s value needs to be comprehensive, measuring the extent to which a policy improves the lives of all those affected. The total benefits of a policy include benefits accruing to intended beneficiaries of the policy and to those who are not necessarily intended beneficiaries but are nevertheless affected by it. Ensuring the measure includes all those affected is important because, for some policies, impacts on nontargeted households can be large. These benefits include both short-term benefits and long-term benefits discounted back to today, which is key, because it can take many years for returns to public spending to materialize.

The value of a policy also needs to take into account government costs to implement it. The net cost to government includes direct spending on the policy (or revenue received, in the case of tax policies) plus any indirect impacts from this policy on the government’s budget—in both the short and long run. The indirect impacts of a policy on the government budget are referred to as the *fiscal externalities* of the policy. For example, if a policy increases worker wages, income tax revenues will increase, which will help offset the government’s initial up-front costs of the policy.¹ Accounting for fiscal externalities when calculating net costs can be critical.

In order for it to inform policy prioritization, the measure of a policy’s value is most useful if that measure has the following features:

- It is *comparable* across different types of policies. Different policy categories often have different measures to assess policy value (Hendren and Sprung-Keyser 2020). Health interventions may report the policy cost per life saved; education policies, the cost per student enrolled; and studies of tax policy changes, the implied marginal excess burden, or the marginal cost of funds. These varying measures of welfare make it very difficult for governments and policy makers to compare policies across sectors and, thus, to make informed fiscal trade-offs. It is also important that governments can compare the value of additional spending versus raising taxes.
- It is *context specific*. The private benefits from a fiscal policy will depend greatly on local context; for example, the private benefit to schooling will depend on the returns to schooling in a given country or for a given person in that country (depending on gender and ethnicity, for example). The degree to which a government benefits from implementing a given policy will depend on how much of that private return it subsequently taxes.
- It allows the possibility of *combining* the valuation of the policy for beneficiaries with social welfare weights applied to those beneficiaries. The purpose of calculating the value of a policy is to help make fiscal policy choices. The informed policy choice will also depend on identifying the beneficiaries of a policy and the value that society places on benefiting those people versus others. Doing so requires a valuation measure that can be combined with social welfare weights that capture the value to a society of benefiting one group over another (see the following discussion).

A number of different measures can capture the value of a policy in this way. The concept of the marginal value of public funds (MVPF), a systematic way of determining this value, has resurfaced in recent years and is being applied to a vast range of policies in the United States (Hendren and Sprung-Keyser 2020). It is now also being used more broadly, and this chapter applies it to selected interventions in low- and middle-income settings. The MVPF can be constructed, in principle, for any tax policy and any form of government expenditure.² The MVPF provides a measure of a policy’s “bang for the buck,” the total benefits accruing to all those affected by the policy relative to the net cost of the policy to the government. The MVPF takes into account all the benefits of a policy outlined earlier (namely, the long- and short-run benefits of the policy for intended beneficiaries and others affected by the policy) as well as the full costs of the policy (the direct costs and fiscal externalities). All benefits are measured in monetary units, allowing policy makers to compare policies across a wide variety of sectors that deliver different goods and services.³ The higher the MVPF, the higher the benefits generated for the marginal dollar of spending. An MVPF of 2 indicates that \$1 dollar of policy costs generates \$2 of total benefits. Box 6.1 provides further details, and online annex 6A provides an example of how to calculate the MVPF for a cash transfer in a low- or middle-income country.

Online annex 6A also discusses similar policy valuation measures and how the MVPF differs from them. The MVPF can be applied across a range of tax and spending instruments and has other nice features outlined in box 6.1. At various points in this chapter, the discussion of policy value provides examples using the MVPF.

BOX 6.1**Calculating the value of a policy using the MVPF****Calculating the MVPF**

One calculates the marginal value of public funds (MVPF) using evidence on policies' impacts and costs, using the calculation

$$MVPF = \frac{\text{Total benefits}}{\text{Net cost to government}}$$

Predominantly applied in the United States, the concept can have arduous data requirements, especially in the context of developing economies, but it is being increasingly used (for example, Bergstrom, Dodd, and Rios 2022). Even in the absence of the full range of data and evidence needed to accurately construct the MVPF, calculating it with the best available data and evidence can still provide clarity on what drives the value of different policies and the range of likely values for some relevant policies in a given context. At the bare minimum, it provides policy makers with a much-needed unifying framework to help guide the fiscal decision-making process. Online annex 6A provides a more detailed description of calculating the MVPF for a cash transfer. In some cases, the long-term impacts on future government revenue, discounted back to today, fully offset initial up-front costs. In these situations, a policy is said to pay for itself and thus to have an infinite MVPF.^a

One can calculate the MVPF for tax reforms as well as fiscal spending, which Hendren and Sprung-Keyser (2020) do for reforms to top personal income tax rates in the United States. Interestingly, the MVPFs of these reforms depend crucially on the pre-reform tax rate. For example, those authors find that a 1981 reform that lowered the top tax rate from 70 percent to 50 percent had an infinite MVPF because, in response to this large tax reduction, top earners substantially increased their reported income, leading to an increase in tax revenue. Thus, the tax reform paid for itself, generating an infinite MVPF. Conversely, they show that starting from a top tax rate of 39.6 percent and reducing it to 31.0 percent results in a much lower MVPF (1.85). When starting from a lower tax rate, the increase in earnings of top earners cannot fully compensate the government for its lost tax revenue. Thus, the MVPF is no longer infinite.

Because it focuses solely on the ratio of total benefits to net cost, the MVPF abstracts from how a policy's total cost will be financed. A particularly nice feature of the MVPF, it allows policy makers to explore different options to finance a particular expenditure, in direct contrast with other commonly used measures of policy value (see online annex 6A for further discussion). To account for the overall constraint in spending, one can compare the MVPF of spending on a particular policy with the MVPF associated with raising taxes or the MVPF of spending on an alternative policy.

Making fiscal policy choices using the MVPF

Consider a government deciding whether to spend an additional dollar on policy A. Suppose that, in order to fund this additional dollar, the government must reduce spending on policy B by \$1. Should the government spend this dollar on policy A at the expense of policy B? When the two policies affect the same group of individuals, it becomes much easier to answer this question. If the value of policy A is higher than that of policy B (that is, policy A generates more benefits per dollar spent), the government should spend the dollar on policy A at the expense of policy B. Rarely, however, do two policies affect the exact same group of individuals.

In a more realistic scenario (that is, policy A and policy B affect different groups of people), policy makers must decide how much they value a dollar in the hands of those affected by policy A relative to those affected by policy B. For example, consider the case where the value of policy B is twice that of policy A. If the government values giving \$2 to policy B beneficiaries

(continued)

BOX 6.1**Calculating the value of a policy using the MVPF (continued)**

less than it values giving \$1 to policy A beneficiaries, then redirecting money from policy B to policy A is worthwhile. Alternatively, if the government values giving \$2 to policy B beneficiaries *more than* giving \$1 to policy A beneficiaries, then it should not redirect money from policy B to policy A.

Because policies A and B can represent any two policies the government spends money on or receives money from, policy makers can compare spending across vastly different policies and consider various alternatives to finance spending on a particular policy. For example, if policy A represents spending on a cash transfer program and policy B on road construction, policy makers could then decide if they should increase spending on cash transfers or on roads. Alternatively, policy makers could consider alternative sources of financing for the cash transfer. For example, policy B could represent raising taxes on top earners (or reducing tax cuts on top earners) or increasing debt (that is, reducing spending on a future government program). A lower MVPF is better for raising revenue because it indicates a lower cost to households relative to the gain for governments.

a. When a policy has a negative net cost to the government and positive benefits accruing to those affected, it is said to “pay for itself.” In these special cases, the policy has an infinite MVPF and it is always beneficial for the government to fund such policies. As seen in Hendren and Sprung-Keyser (2020), in the United States, policies that invest in the health and education of low-income children often have infinite MVPFs because, as adults, beneficiary children pay back more than the initial cost of the policies through additional tax revenue and reduced transfer payments. A later section of the chapter conjectures that policies with large long-run benefits in developing economies will also likely have infinite MVPFs despite the reduced ability of developing economies to recoup costs via taxing increased earnings.

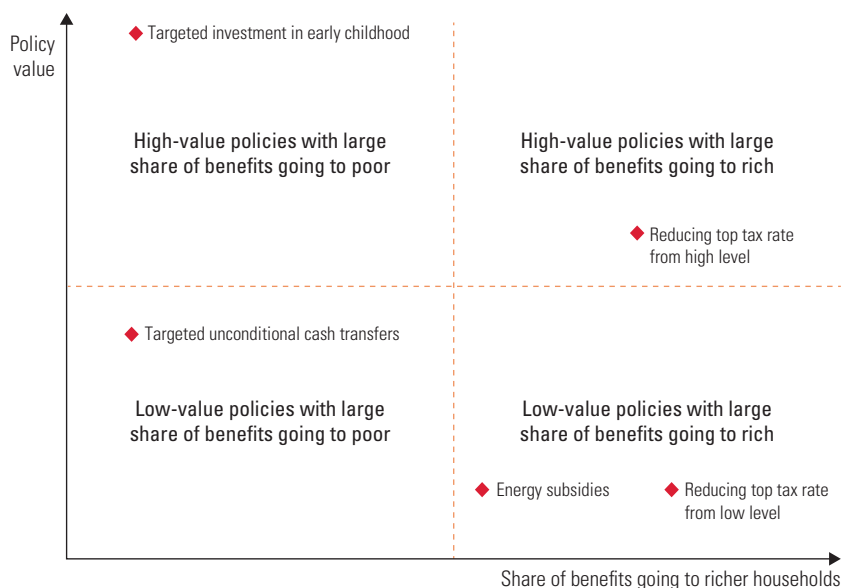
Using information on the value of policies to inform policy choices

The incidence and value of a policy can inform prioritization

Combining information on the value of a policy with information on who benefits can inform policy choices. Figure 6.1 shows how information on value and beneficiaries can be combined. The vertical axis shows the value of a policy, and the horizontal axis shows the share of a policy’s benefits accruing to rich households. If governments place a higher weight on giving to the poor relative to the rich, governments will opt for policies that fall in the top left quadrant of the figure (that is, high-value policies that predominantly benefit the poor) at the expense of policies in the lower right quadrant (that is, low-value policies that predominantly benefit the rich).

Figure 6.1 highlights where some stylized policies would likely fall. Investments in early childhood development targeted to low-income households can have very high value because they can bring income growth benefits to beneficiaries for all their adult learning years; thus, such policies would likely fall in the top left quadrant. Targeted unconditional cash transfers, although predominantly benefiting the poor, will likely generate less “bang for the buck” and could fall in the bottom left quadrant. As discussed later, energy subsidies—likely low-value policies with a larger share of benefits accruing to the rich—would fall in the bottom right quadrant. Finally, reducing the top labor income tax rate, despite benefiting only wealthy households, can result in a high-value policy if the starting top tax rate is high or a low-value policy if the starting top tax rate is low (Hendren and Sprung-Keyser 2020).

FIGURE 6.1
Fiscal policy trade-offs



Source: World Bank.

Although highly informative, this type of analysis is not enough for policy prioritization. When two policies affect different groups of people, policy makers must determine how much they value a dollar in the hands of the beneficiaries of one policy versus those of another. This setup also lacks some important factors. Governments often choose not between two policies but on a package of policies. And policies can have complementary effects. For example, as detailed in the example of cash transfers in online annex 6A, the value of cash transfers depends on the returns to education, which are influenced by many additional policy choices. Finally, a high value on its own does not provide the rationale for government financing. The decision will also depend on the ability to meet the same objective through purely private provision. Although it does not provide all the information needed for policy prioritization, the information contained in figure 6.1 provides key inputs to these decisions and allows for greater transparency about the choice of one policy over another.

Addressing rising prices: Cash transfers are of higher value and more targeted than subsidies

Chapter 4 points out that income support has been withdrawn too quickly for some vulnerable groups of people who still have much lower employment and earnings than before the COVID-19 crisis. Higher food and energy prices are hurting many of these same groups (for example, the urban poor). Some groups will likely need continued income support until growth recovers. Chapter 4 also documents that, despite the slower overall fiscal response in 2022 than in 2020, governments have tended to use subsidies more to combat increasing prices. This section considers the evidence on the value of specific commodity subsidies that are being considered as part of the fiscal response.

Given the current challenge of higher food and energy prices facing consumers, especially the poor, it may seem at first glance that subsidizing food and energy prices is a good option. As highlighted in chapter 5, a larger share of spending on subsidies goes to better-off households.

Thus, in figure 6.1, a subsidy policy would end up further to the right than a cash transfer. However, it is also important to consider the value of the two policies. The following paragraphs examine what is known about the value of subsidies relative to the value of cash transfers.

A relatively large and growing evidence base concerns the effectiveness of cash transfers, which allows the value of a cash transfer to be measured. In online annex 6A, this evidence is used to calculate the MVPF for a typical targeted unconditional cash transfer program in a low-income country (LIC) or middle-income country (MIC) setting. Beyond the value of the cash transfer itself, cash transfers have value when beneficiaries can increase their income as a result of the transfer, either because the transfer relieves liquidity constraints to income generation or because it enables increased investments in the education of children in the household (with benefits for their future earnings). This value is lowered if the transfer disincentivizes labor force participation. Using systematic reviews of likely impacts as well as estimates of the likely value of future earnings increases for children in the household, the benefit to beneficiaries of US\$1 of transfer is estimated to be US\$1.11–US\$1.61 in LICs and US\$1.65–US\$2.69 in MICs. The range of benefits and differences between LICs and MICs indicates the importance of context and other complementary policies that can increase or decrease the size of different channels of impact. Benefits to beneficiaries are larger in MICs, for example, in large part because MICs have a greater ability to tax the future gains in earnings of beneficiary children (which, in turn, lowers the overall net cost of the cash transfer program in MICs relative to LICs).

Increasingly, cash transfers are shown to have an impact also on nonbeneficiaries because beneficiaries spend (or in some cases share) transfer income in the local community or market. As discussed in online annex 6A, the initial literature suggests a likely positive impact but with a wide range of possible estimates. On the basis of this evidence, it is estimated that US\$1 of transfers to beneficiaries has an impact of US\$0 to US\$0.18 on nonbeneficiaries.

The cost of providing cash transfers is not negligible. Online annex 6A reports estimates from Kondylis and Loeser (2021), who review cash transfer programs primarily in Sub-Saharan Africa and indicate that the cost of providing a transfer is US\$0.18 for each US\$1 transferred. Some positive fiscal externalities, however, can reduce the net cost: governments receive value added tax paid on transfer income that is spent, and they receive taxes paid on additional earnings and the spending that results from those additional earnings. The ability of a government to tax earnings and spending determines the size of such revenues. LICs have lower tax rates (see chapter 5), so the positive externality is estimated to be US\$0.03–US\$0.05 for every US\$1 transferred compared to US\$0.12–US\$0.22 in MICs. Putting these estimates together implies that a typical cash transfer in a typical LIC setting has an MVPF of 1.0–1.6, and an MVPF of 1.6–3.0 in a typical MIC setting.

The value of a subsidy will vary with the type of subsidy. Take first a food subsidy. A key question to consider is whether the channels of impact present for a cash transfer will also be present for a transfer made to households in the form of a lower price on food. That is, would a food subsidy have the same impacts on short-run consumption growth and educational attainment of children in beneficiary households, and would a food subsidy have a similar impact on nonbeneficiaries through stimulating local economic activity as a cash transfer? There is little evidence on the impact of food price subsidies, but the literature on in-kind food transfers versus cash transfers offers some insights. Evidence in the United States suggests that food transfers reduce labor earnings, even though they can increase earnings in adulthood for children in households receiving food transfers (Hendren and Sprung-Keyser 2020). The literature for LICs and MICs is less clear. It shows that the modality of the transfer often has small or negligible impacts on the share of food in overall consumption, although in some instances in-kind food transfers increase food consumption more than cash (Gentilini 2016; Hidrobo et al. 2014). Similar to the in-kind transfer, food subsidies will likely have a greater effect on food consumption than cash transfers, because the only way to receive them is to spend on food (and often on specific foods).

To the extent that nonfood spending drives the income growth observed, a subsidy that induces a smaller increase in nonfood spending than a cash transfer will have a lower income

growth impact. To the extent that nonfood spending goes to goods produced in the local economy (for example, informal services), lower nonfood spending will reduce the local multiplier effect in relation to cash transfers. However, the size of this difference will depend on the nature of local food markets and how food subsidies are provided. Nevertheless, the main concerns with the long-run value of food subsidies on food consumers are twofold: (1) they distort food spending decisions, discouraging substitution even when beneficial; and (2) they can partially benefit food suppliers instead of the poorer consumers they are intended to benefit. For example, one of the reasons the South African government chose to provide cash transfers rather than food vouchers during the pandemic is because the main beneficiaries of food vouchers were typically large multinational supermarket chains and not the smaller shops in local neighborhoods. These smaller shops needed support during the pandemic, and spending there would more likely contribute to a local multiplier effect.

Providing food subsidies may be administratively cheaper than delivering cash, but any reduction in the growth impact reduces revenues and increases net costs. In sum, providing food subsidies is likely to be of lower value than providing cash transfers, although perhaps not by much. The more important distinction is the poor targeting of food subsidies in relation to a targeted cash transfer, as discussed in chapter 5.

There is a larger literature base to draw on to assess the likely value of energy subsidies. The literature on energy taxes can be used to inform the likely impact of energy subsidies. This literature suggests that higher energy prices have no negative impact on gross domestic product (GDP) or employment growth, which in turn suggests that subsidies would have no beneficial impact. Very little evidence exists to suggest that the energy taxes or carbon pricing policies introduced in the European Union and North American countries affect GDP (Bernard, Kichian, and Islam 2018 and Metcalf 2019 for British Columbia; Metcalf and Stock 2020 for the European Union) or total employment (Azevedo, Wolff, and Yamazaki 2019 and Yamazaki 2017 for British Columbia; Metcalf and Stock 2020 for the European Union; Dussaux 2020 for France; Martin, de Preux, and Wagner 2014 for the United Kingdom). Schoder (2021) and Wingender and Misch (2021) consider a broader range of countries. Wingender and Misch (2021) find that, in 38 economies, carbon prices have strong impacts on emissions but no impact on sectoral value added or employment. Schoder (2021) finds that, across 75 economies, environmental taxes have no impact on employment and no negative output effects when implemented during years of economic expansion or when GDP is above its potential, but otherwise such taxes can have negative growth impacts.

What is clear from this literature is that energy taxes reduce emissions with long-run environmental gains, particularly in high-emitting countries, as shown in many of the papers cited in the previous paragraph as well as other papers covering a range of countries and empirical methods. The positive effect on emissions, the resulting health and long-run productivity effects (especially when implemented in high-emitting countries), and the null effects on employment and GDP suggest that energy taxes will have an MVPF lower than 1 because the long-run cost is less than the revenue gained, a good thing when considering taxation. It also means, however, that the MVPF of energy subsidies is below 1, which means that spending on this policy is low value.

Table 6.1 summarizes the key features of cash transfers and energy subsidies using these calculations and the calculations in chapter 5. Because energy subsidies likely have low value with larger benefits going to the rich, it is hard to justify using them over cash transfers, which have higher value and are better targeted to those in need. The broad base of beneficiaries for subsidies can make them more politically popular, but a more broadly targeted transfer program could prove to be equally popular without being regressive and could have potentially higher value. In the current crisis, cash transfers are likely a better policy instrument than energy subsidies.

Beyond choosing spending on cash transfers over energy subsidies, increasing spending on cash transfers could also be valuable if it can be financed by choosing a form of financing with a low marginal cost. For example, it may be worth choosing to increase spending on cash transfers over spending on a tax reduction if the tax reduction has an MVPF below 0.9–1.6 in a LIC and 1.6–3.0 in a MIC. As the next section shows using data from the United States, spending on tax

TABLE 6.1**Cash transfers are higher value and better targeted than subsidies**

	MVPF	Incidence	
		Share of spending to bottom 40 (%)	Share of spending to top 20 (%)
LICs			
Cash transfer	0.9–1.6	64	9
Energy subsidy	<1	13	57
MICs			
Cash transfer	1.6–3.0	57	11
Energy subsidy	<1	24	37

Source: Original calculations as explained in online annex 6A.

Note: LICs = low-income countries; MICs = middle-income countries; MVPF = marginal value of public funds.

reforms can be of higher value than this range (when tax rates are very high), but spending on tax reforms will be of lower value when tax rates are already low. It is also worth noting that valuing transfers at their MVPF rather than their face value would increase the progressivity of fiscal policy and reduce the degree to which fiscal policy was estimated to increase poverty in chapter 5.

Nonetheless, countries tend to use subsidies over transfers. The fact that subsidies benefit all households increases their popularity relative to targeted transfers, which may point to the need for less narrowly targeted transfer programs. Such programs would be more politically feasible while also preventing the types of distortions that reduce the value of social spending made via price subsidies. Subsidies are also much easier to implement quickly, as discussed in chapter 4, which can make them a preferred policy tool in a crisis when transfer systems are underdeveloped. This limitation then points to the need to invest in developing delivery systems in noncrisis times, discussed further in chapter 7.

High-value policies that support growth

The recent literature on policy evaluation and the application of the MVPF framework points to three broad findings on likely characteristics of high-value policies: (1) policies that improve child outcomes are of high value, across contexts; (2) policies that bring transformative growth tend to be of high value; and (3) spending to address market failures is often of higher value than subsidizing private behavior (in the absence of a positive externality).

Policies that improve child outcomes are often of high value, across contexts

Chapter 3 highlights the cost of the pandemic on the life chances of the following generation. Reversing this cost is a priority for today, even though the benefits will primarily be realized in the long run. Using the fiscal incidence analysis presented in chapter 5, box 6.2 shows that spending on health and education can be pro-poor. This section presents evidence showing that investment in child education and health will likely have high value, especially if it can reach poorer households. World Bank (2022) discusses in detail the types of policies that could represent this extra spending in the context of recovery from the pandemic shock.

Spending that invests early in a child's life can be transformative (if effectively implemented) and position the child for a lifetime of higher earnings. Most applications of the MVPF framework have been in high-income countries (HICs) and to policies typically in one of four domains: social insurance (health, unemployment, and disability insurance), education (from preschool to job and vocational training), taxes and cash transfers, and in-kind transfers. Despite very different fiscal trade-offs in the HIC setting than in LIC and MIC settings, the results from these

BOX 6.2

The progressivity of spending on education and health

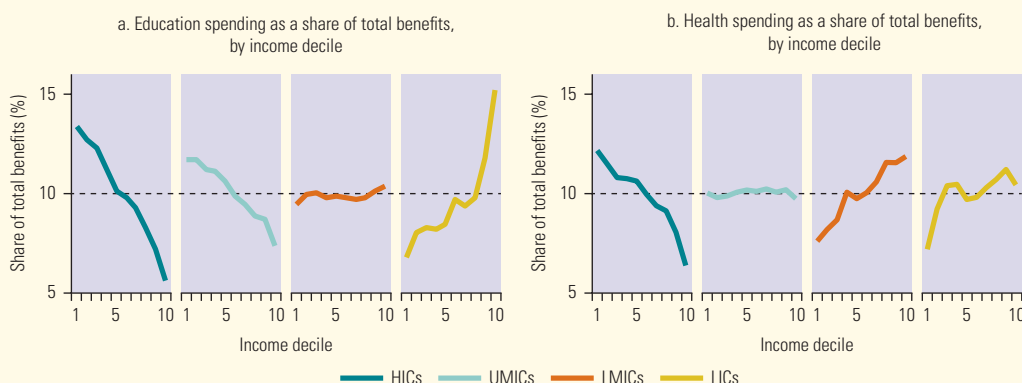
Spending on child education and health likely has high value in low- and middle-income countries, but to what extent do those countries direct general spending on education and health to poorer households (that is, is it in the top left or right quadrant of figure 6.1)? The direction of spending can be assessed using the fiscal incidence analysis methods introduced in chapter 5. Figure B6.2.1 presents data on the average share of spending on education and health going to each decile of the income distribution (concentration shares) using Commitment to Equity data from chapter 5.^a The Commitment to Equity framework allocates education and health spending to households on the basis of the cost of services delivery and the use of services.

A larger share of education spending goes to poorer households in richer countries than in poorer ones. Although poorer households (typically with more children) enjoy a much larger share of education spending in high-income and upper-middle-income countries, the share is about even in lower-middle-income countries and heavily favors the rich in low-income countries (figure B6.2.1, panel a). This discrepancy results because enrollment is lower in the poorest deciles in poorer countries, particularly at the secondary and tertiary levels, which are also more expensive to provide per student. Although not shown, a larger share of spending on primary education is progressive across all income categories, whereas spending on secondary and tertiary education is less regressive. Nevertheless, in the case of education spending, spending more may increase progressivity at these levels, especially if well targeted. For example, many low- and lower-middle-income countries still require fees for secondary education. Increasing spending by removing those fees will increase enrollment among poorer deciles, thus making this form of spending more progressive. Similarly, other education spending that reduces access barriers can increase the progressivity of spending.

Health spending is not disaggregated between spending on child health and adult health (where child health spending is expected to have a higher marginal value of public funds than adult spending). Figure B6.2.1, panel b, shows that only in high-income countries do poorer households have a larger share of total public health spending; the share is equal for upper-middle-income

FIGURE B6.2.1

Education and health concentration shares, by income category and decile



Sources: Sosa and Wai-Poi, forthcoming, based on data from CEQ Data Center on Fiscal Redistribution, <https://commitmenttoequity.org/data-center/>; World Bank.

Note: The figure shows education spending (panel a) and health spending (panel b) as a share of total benefits by market income decile, aggregated at income level using median decile results. Education and health incidence are not available for Organisation for Economic Co-operation and Development countries. HICs = high-income countries; LICs = low-income countries; LMICs = lower-middle-income countries; UMICs = upper-middle-income countries.

(continued)

BOX 6.2

The progressivity of spending on education and health (continued)

countries and lower for low- and lower-middle-income countries. In many countries, the higher share of health spending for richer households is due to the availability of more expensive hospital care only in richer and urban areas that is at least partially provided through public spending, whereas basic primary health care may not even be available in some poorer and rural areas.

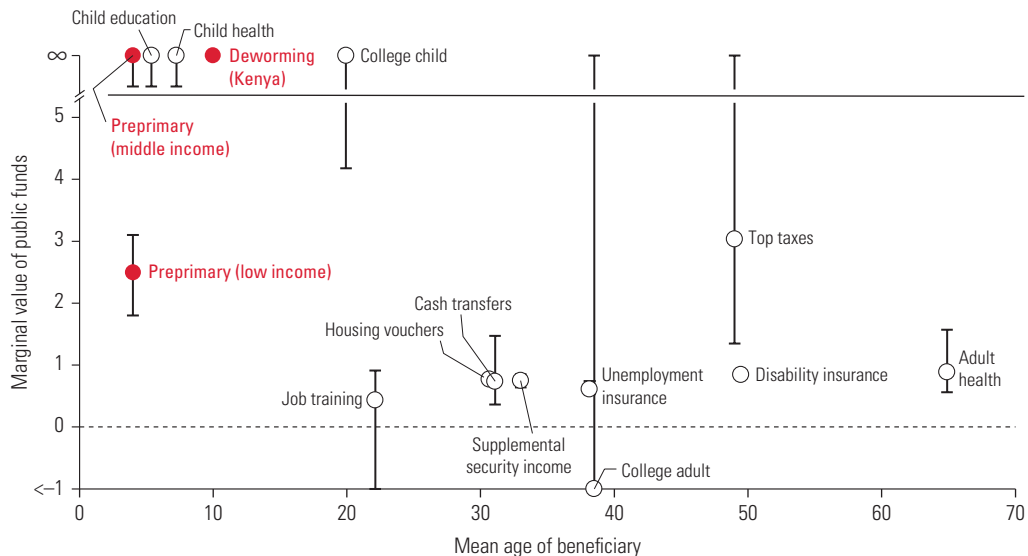
Understanding the progressivity of spending may also provide some indication as to its value, given that Hendren and Sprung-Keyser (2020) find that spending directed to low-income children has the highest marginal value of public funds. In general, health or education spending targeted to subpopulations in the greatest need may have greater returns.

a. CEQ Data Center on Fiscal Redistribution, <https://commitmenttoequity.org/datacenter>.

applications may still offer important insights. Hendren and Sprung-Keyser (2020) conduct a welfare analysis of 133 policy changes in the United States over the past 50 years and find that spending on programs that improve low-income children’s health and educational outcomes typically provide higher value compared with spending on programs focused on improving outcomes for adults (figure 6.2). The MVPF for programs targeted toward children is generally greater than 5.0, whereas that for programs targeted toward adults is typically between 0.5 and 2.0.

FIGURE 6.2

Average MVPF of policies in the United States, and of two policies targeted to children in low- and middle-income countries



Sources: Hendren and Sprung-Keyser 2020 for US policies; Finkelstein and Hendren 2020 for deworming in Kenya; World Bank estimates using Holla et al. 2021 for preprimary education in low- and middle-income countries.

Note: The figure shows the estimated marginal value of public funds (MVPF) for different policy categories sorted by the mean age of beneficiaries on the x-axis. The data and methodology for policies in the United States are described in Hendren and Sprung-Keyser (2020) and online at <https://www.policyinsights.org/>. ∞ = infinity.

The evidence presented in the worked cash transfer example in online annex 6A highlights that this finding may hold true for LICs and MICs also. The impact of cash transfers on the schooling of children represented a large part of the value of the cash transfer program. A recent review of more than 50 studies on preprimary education in a wide variety of LICs and MICs provides some of the information necessary to generate an estimate of the likely MVPF of preprimary education investments (Holla et al. 2021). The studies demonstrate that investments in preprimary education often lead to substantial increases in children's cognitive and noncognitive skills (an increase in cognitive skills by 0.086 standard deviation on average). Using a similar method to calculate the MVPF from this spending as used in the cash transfer example shows that preprimary spending is likely to have an MVPF ranging from 1.8 to 3.1 in low-income settings and 35.1 to infinity in middle-income settings.⁴ Additionally, using the results from Baird et al. (2016) who show that the estimated long-term revenue gain of deworming policy in Kenya is greater than the cost of deworming, Finkelstein and Hendren (2020) posit that deworming targeted to school-age children in Kenya has an infinite MVPF.

However, the limited applications to date of the MVPF approach in low- and middle-income settings generate only a partial picture. Ultimately, the similarity of results in LICs and MICs to child investments in HICs will depend on four factors: (1) whether policies targeting children's health and education can improve these outcomes at relatively low cost, (2) whether improving children's health and education in these settings leads to large earning gains, (3) the extent to which LICs and MICs can partially tax-back long-term benefits, and (4) whether LICs and MICs can borrow to fund investments with long-term gains at the same interest rate as HICs. This latter point helps determine how future gains are discounted to the present.

Evidence from recent cost-effectiveness evaluations highlights that some programs investing in the health and education of poor children in LICs and MICs can generate large impacts relative to up-front costs. Cost-effectiveness analysis conducted by the Abdul Latif Jameel Poverty Action Lab shows that a deworming program in Kenya, an iron and vitamin A supplement program in India, and the construction of village-based schools in Afghanistan all generate large gains in educational attainment relative to cost (see Bhula, Mahoney, and Murphy 2020).⁵ Similarly, evaluations of preprimary investments also generate sizable learning gains relative to cost (Holla et al. 2021), as do some structured pedagogical investments (Evans and Yuan 2019). As in the United States, however, not all investments in child health and education have large returns relative to cost; for example, textbook provision in Kenya and computer-assisted learning in an Indian city led to student learning gains but only at a relatively high cost (Bhula, Mahoney, and Murphy 2020; McEwan, 2012).

To what extent can these short-term gains translate into long-term benefits in LICs and MICs? Montenegro and Patrinos (2021) find larger returns to schooling in developing economy settings, suggesting that gains in schooling generate relatively larger long-run returns, on average, in LICs and MICs than in HICs. This finding would suggest that programs that increase educational attainment in LICs and MICs create higher private benefits than do similar policies in HICs. Context, however, almost certainly matters; for example, Duflo, Dupas, and Kremer (2021) find that gains in earnings associated with secondary school completion in Ghana came primarily in the form of better access to rationed jobs in the public sector—that is, any gain to beneficiaries came at the expense of others. In such settings, rapidly expanding education without concomitant reforms or investments may result in a cohort of overeducated young people, perhaps frustrated in their aspirations. Therefore, investments in children's education may need to be accompanied by investments improving labor market opportunities so that long-term benefits can be realized from the short-term education gains. Policies that generate large, long-run gains will have lower MVPFs when interest rates are higher, because it is more costly for governments to finance investments by borrowing against future gains. Interest rates tend to be higher in LICs and MICs than in HICs.

The worked cash transfer example clearly shows that the lower a country's tax capacity, the less a government stands to gain in increased tax revenue from policies that generate large, long-term gains, thereby leading to lower MVPFs. Chapter 5 documents that LICs and MICs have substantially lower tax capacity than do HICs and so will have less to gain from what otherwise may be high-value policy choices. At the same time, as a country develops, so does its tax capacity (Jensen 2022).

Policies that bring transformative growth tend to be of high value

Beyond investments in child education and health, the impacts of other forms of transformative spending—spending that puts individuals and economies onto a higher growth path—are often realized in the long run. These policies are almost certainly high- (if not infinite-) MVPF policies. Such policies can include investments in research and development (R&D) and infrastructure as well as policies that bring long-run climate benefits.

Evidence from the Green Revolution indicates that spending on agricultural R&D can have large impacts for technology adopters on agricultural growth, investments in schooling, capital accumulation, and reductions in fertility and migration (both locational and sectoral). The same spending can bring benefits to nonadopters through lower food prices, environmental benefits from lower land use, and an increased pace of structural transformation. Delaying the Green Revolution for 10 years would have reduced GDP per capita in 2010 by 17 percent and resulted in a cumulative loss equivalent to one year of global GDP (Gollin, Hansen, and Wingender 2021). If the full cost of investments made by the agricultural research systems in developing the seeds that spurred the Green Revolution is less than the tax revenue earned from this additional GDP, the MVPF is infinite. In 2010, average tax revenue was 13.4 percent of GDP, so the present value of the investments in developing the new seeds would need to be less than 2.3 percent of GDP, which is highly likely.⁶

Infrastructure investments can have similarly high impacts on agricultural growth and stimulate structural transformation. Donaldson (2018) finds that connecting a district to the Indian railroad network increased agricultural income growth by 16 percent. Similarly, an infrastructure project that seeks to improve commuting in urban settings can also have a high MVPF. Direct beneficiaries, those who make use of expanded or improved public transit lines, will experience reduced travel times, which translates into monetary benefits (for example, by multiplying the reduction in travel time by a person's hourly wage). In addition, such an expansion likely has many indirect beneficiaries. For example, congestion may decrease, leading to a reduction in air pollution and a reduction in travel time for those who do not use public transit. Moreover, this type of transformation may lead to improvements in the allocation of workers to more productive jobs. For example, Zárate (2022) points out that the subway line expansion in Mexico City led to a reduction in informal sector employment and an increase in formal sector employment. Although fully measuring who a policy affects, and in what way and by how much, is difficult, understanding the impact on some aggregate measure—such as average per capita income or average per capita income for different groups of the population—is useful for gauging the overall size of the benefits from infrastructure investments. Both Tsivanidis (2019) and Zárate (2022) find that the public transit expansion in Bogotá and Mexico City (respectively) led to large gains in GDP; Tsivanidis (2019) shows that high-skilled workers and low-skilled workers benefit about the same.

The direct costs of such infrastructure projects include initial construction and future maintenance, operations, and overhead (discounted back to today). If such projects lead to increased GDP (from, say, workers reallocating to more-productive formal sector jobs), the government will likely experience gains in future tax revenue. For example, with more workers moving to formal jobs, the government will reap gains in future tax revenue because more workers in the formal sector mean more workers subject to labor income taxation.

Discounted gains in future tax revenue constitute the fiscal externalities of such projects. Notably, Tsivanidis (2019) and Zárate (2022) find that the gains in GDP outweigh the direct costs of public transit expansions in Colombia and Mexico, which suggests that such projects have a high MVPF (even potentially infinite, if the government recoups enough in tax revenue to cover the direct costs).

Not all policies within these categories are high-MVPF policies, and it is important to carefully consider the balance of sometimes-countervailing evidence. For example, Asher and Novosad (2020) find that rural roads in India have a very small impact on income, agricultural output, or asset accumulation for the period they measure, which could imply a low MVPF. However, Shamdasani (2021) finds increased diversification and commercialization in more remote villages connected by the same rural road building program, pointing to a higher MVPF for the same investment, particularly for more remote villages.

Spending to address market failures is often of higher value than subsidies

Often, fiscal spending to support income in the short run comes in the form of subsidies to production. However, spending that directly addresses market failures is often more cost-effective in the long run, and therefore of higher value, than subsidizing private behavior (in the absence of a positive externality, which is the typical justification for a subsidy). Two examples relevant for the current moment illustrate this difference.

First, a key question many countries currently face is how to increase agricultural production given the global reduction in food trade and the rising prices of inputs. Input subsidies (most famously, fertilizer subsidies, but also the underpricing of surface and groundwater) increase agricultural production in the short run. They also, however, can carry long-run costs to the natural resource base, distort incentives, and dissuade farmers from making long-run investments in productivity. Particularly in MICs, subsidies are large, amounting to about 5 percent of the value of agricultural production (FAO, UNDP, and UNEP 2021).

What other actions may support agricultural production and even increase agricultural productivity? A farmer's investment to increase productivity is based not only on current and forecasted input prices but also on current and forecasted output prices, knowledge on how best to invest, and access to credit, insurance, and labor markets (Duflo, Kremer, and Robinson 2008; Rosenzweig and Udry 2020). Subsidizing input prices may maintain production in the short run, but it does not address the root causes of market inefficiencies or a lack of knowledge.² Addressing these constraints on production should bring larger gains in the long run, and some interventions will also have immediate payoffs on production and productivity. Jones et al. (2022) provide an example of the benefits of addressing factor market frictions over subsidizing input costs, showing that, even when provided free water use, farmers limit their use of irrigation as a result of local labor market failures.

An Agricultural Technology Adoption Initiative review of lessons from 10 years of evaluating experiments on how to increase productivity among poorer farmers (smallholders in South Asia and Sub-Saharan Africa) points to the potential for well-designed policies in extension and marketing support (Bridle et al. 2019). The returns, and therefore the MVPF of business-as-usual extension (one of the main components of agricultural expenditure outside of subsidies), can be low; however, a large body of evidence shows that, when information is provided about a new technique that truly brings positive returns, and when that information is tailored (delivered by the right person at the right time and in an actionable, easy-to-use way), productivity gains can be large. Sometimes this information will even result in reducing the use of inputs for further productivity gains. For example, providing Bangladeshi farmers with color leaf charts and training resulted in a reduction in the use of urea fertilizer of 8 percent without compromising yields (Islam and Beg 2021). The intervention has a return of 2.8 percent as a result of reducing production costs and increasing environmental benefits.

Improving output market conditions for farmers is not just about increasing the spot price but about improving the functioning of markets, including market mechanisms that reduce risk and uncertainty. Public investments to provide price information have small impacts but, if delivered cost-effectively, can be worthwhile. Other market support policies can have a greater impact on providing incentives for farmers to invest in greater crop quantity or quality. Impact evaluations have shown that the certainty provided by sales contracts between farmers and buyers implemented at the beginning of the season can have sizeable productivity impacts without any additional support (Arouna, Michler, and Lokossou 2021). Investments in scales and third-party quality certification have also been shown to incentivize productivity investments with net income increases for farmers (Bernard et al. 2017; Saenger, Torero, and Qaim 2014).

A second urgent priority facing governments is increasing employment in urban areas. Chapter 2 highlights that, even at the end of 2021, employment was still below prepandemic levels, particularly for less educated households in urban areas. Supporting firms is a key priority, particularly for urban small and medium enterprises that are likely to provide needed employment opportunities.

Firms in LICs and MICs currently benefit from 40 percent of total tax expenditures, but little evidence exists to suggest that this spending affects growth or employment. There is, however, an increasing body of evidence on the types of public investments that can help firm growth. McKenzie (2021), McKenzie et al. (2021), and Quinn and Woodruff (2019) review this evidence and highlight that increasing capital has immediate and sustained impacts on small and medium enterprises. Less clear, however, is the role that public spending plays in increasing access to capital. Instead, these reviews highlight the need to increase access to capital through innovation in access to finance and hire-purchase agreements (Bari et al. 2021; Battaglia, Gulesci, and Madestam 2018; Field et al. 2013).

Similar to the evidence reported in the agricultural space, considerable experimentation on how to provide business training highlights that business-as-usual training for firms has a limited average impact on firms' productivity or growth. In contrast, customized management training can have a high immediate and sustained return when implemented well. Evidence on the provision of customized business services as a way of increasing overall growth is also encouraging (McKenzie 2021; McKenzie et al. 2021; Quinn and Woodruff 2019).

Constraints on investing in high-value policies

Because of the data gaps that prevent a comprehensive assessment of spending policies across countries (chapter 5), there are no systematic data with which to assess the share of public spending going to predominantly high-return policies. As discussed in the previous section, however, the evidence available points to underinvestment in high-MVPF policies with long-run benefits and a bias toward spending on policies that have more immediate impacts (such as tax exemptions and subsidies).

The choice to spend on low-value policies over high-value policies may just reveal the true social welfare weights that govern decision-making rather than reflect systemic constraints on investing in high-value policies. For example, the need to benefit a broad base of people rather than a narrowly targeted group of poor households (as discussed in the case of subsidies) may result in a policy choice with many direct beneficiaries even if it is of lower value. The choice to spend on low-value policies can also reflect effective lobbying by special interest groups that shift the weight in favor of policies benefiting those households. Better data and evidence on the beneficiaries and value of fiscal policy choices can help bring transparency to the choices being made. Chapter 7 discusses the need for better data and evidence, identified across the chapters in this report.

High-value policies are often those with benefits in the future; therefore, the discount rate or interest rate becomes important in determining the value of these policies. These key parameters determine how benefits in the future are valued today. Long-run benefits will be lower today

when interest rates are high and in moments of crisis or fiscal consolidation when there are immediate pressing needs. This may also help explain the finding that countries, particularly LICs and MICs, cut spending on health and education—two areas where returns on spending tend to be realized in the long run—in the aftermath of financial crises, when interest rates tend to increase (Knowles, Pernia, and Racelis 1999; Mohseni-Cheraghloo 2016).

If individuals or governments actually value future benefits less than assumed in the MVPF calculations, then the MVPFs for policies that generate large, long-term gains will be lower than calculated. Governments making these types of policy decisions may discount benefits at higher rates than commonly used in MVPF calculations for three reasons:

1. There is an inherent present bias toward policy decisions driven by delivering results within electoral cycles rather than across generations (for example, Healey and Malhotra 2009 in the case of showing support for crisis response rather than risk reduction).
2. The discount rates held by poorer households tend to be higher, reflecting the present bias that comes with poverty and the need to meet immediate welfare needs (Mullainathan and Shafir 2013).
3. The interest rates faced by LIC and MIC governments tend to be higher than market interest rates as a result of constraints on borrowing.

Under these conditions, policies that carry clear short-run benefits while increasing opportunities for long-run growth will be needed. Alternatively, addressing the factors that cause discount or interest rates to be high will help governments reap the long-run returns to their investments.

Addressing the first challenge requires increasing commitment to long-term development objectives in the political arena. Doing so will often require increasing participation and contestability in the political process as discussed in *World Development Report 2017: Governance and the Law* (World Bank 2017). That report also underscores that greater transparency and information around decision-making can increase incentives for policy making that supports longer-term development objectives. Collecting data and generating evidence that renders more transparent the choices is an important part of this process, and chapter 7 discusses some of the priorities in this regard. In addition, chapter 7 discusses options to incentivize long-term decision-making in regard to crisis preparation.

The general process of income growth may ultimately reduce present bias for lower income, but it will take time for those gains to manifest and thus address the second challenge. On the third challenge, addressing debt and increasing access to low-cost financing should encourage investments in high-value policies.

Finally, some of the policies highlighted as particularly high value can be risky, yet the MVPF does not account for risk. For example, although the MVPF of spending on agricultural R&D was calculated as very high for the Green Revolution, spending on R&D can often result in technologies with a much lower return. Sharing this risk across a large number of countries is one justification for global public investment in agricultural and health R&D, which benefits many countries and can have particular impact in LICs and MICs. Examples include investments in the Consultative Group on International Agricultural Research and in the International AIDS Vaccine Initiative.

Increasing the value of policies through increased efficiency of spending

While making the right fiscal policy choices is key, increasing the efficiency of spending choices is also essential to maximize the value of spending. A high-value policy can quickly become low-value if implemented poorly. Examples of well-directed investments costing many times

more than initial estimates or having underwhelming impacts are too common. For example, Baum, Mogues, and Verdier (2020) estimate that, on average, 35 percent of public investment in infrastructure is lost in the process of managing public funds, with even higher efficiency gaps in LICs. This estimate implies that a policy spending \$1 to generate \$1 of benefits will have an MVPF of only $1/1.35 = 0.74$. Inefficiencies come in many forms, so there is no easy fix. A large literature explores causes of public sector inefficiencies, and it would be difficult to comprehensively summarize the findings here. Sources of such inefficiencies include political economy issues (which, for example, may direct scarce spending to well-off areas) and corruption.

Inefficiency can also originate in the behavior of bureaucrats and other public agents in relation to the incentives they face. Bureaucrats responsible for implementing policies or workers delivering services are subject to principal agent problems that can manifest in costly procurement, delayed projects, and underperforming or low-quality services. Emerging literature suggests that giving public servants more autonomy in their assigned tasks, perhaps coupled with constructive supervision, can improve public sector efficiency. Conversely, introducing stronger financial incentives linked to performance, and concomitant enhanced monitoring, may generate little gain. In Ghana and Nigeria, allowing bureaucrats to have input in policy formation and flexibility to manage budgets substantially increased project completion rates (Rasul and Rogger 2018; Rasul, Rogger, and Williams 2018). In contrast, management practices involving monitoring and incentive provision lowered completion rates. One study in Pakistan found that greater autonomy, in the form of bypassing procurement steps for generic goods, led to significant savings and was more effective than providing incentives (Bandiera et al. 2021). Evidence from Chile suggests that too much focus on audits can lead to less efficient procurement because audits incentivize simpler, lower-risk, and higher-cost procurement practices (Gerardino, Litschig, and Pomeranz 2020).

The performance of individual public servants can be just as influential as the right organizational structure for the overall efficiency of the public sector. Analysis of public procurement in the Russian Federation from 2011 to 2016 suggests the government would save US\$13 billion annually if the bottom quartile of bureaucrats operated as effectively as the top quartile (Best, Hjort, and Szakonyi 2019). Experimental evidence from Indonesia finds that pay-for-performance (PFP) programs increased effort among those joining the civil service, but only if they had lower-than-average pro-social motivation (Banuri and Keefer 2015). If the public sector tends to attract applicants with pro-social motivation, it would suggest that performance pay, a widespread reform intended to promote efficiency of spending, is a weak instrument to improve efficiency.

An organizational structure that provides managerial autonomy and accountability also appears to influence spending efficiency in key sectors such as education and health. Better management practices in schools can improve the effectiveness of public spending on education. Cross-country evidence shows that higher-quality management in high schools is associated with better educational outcomes (Bloom et al. 2015). More autonomous government schools had higher management scores, and accountability for student performance was a key factor. An intervention to improve management in Indian schools by introducing detailed school ratings and improvement plans, but without changing accountability or incentives, was found to have no impact on student outcomes (Muralidharan and Singh 2020). Despite high compliance and expansion to 600,000 schools nationally, the program continued to appear ineffective at improving educational outcomes.

Teacher PFP programs can be effective in the right conditions, but they more often generate little gain. In Pakistan and Rwanda, PFP contracts attracted high-performance teachers and increased teacher effort (Brown and Andrabi 2021; Leaver et al. 2021). Evidence from rural primary schools in China and India suggests that linking teacher pay to student performance improves education outcomes (Loyalka et al. 2019; Muralidharan and Sundararaman 2011).

In rural Uganda, PFP increased attendance rates but improved test scores only in schools that also provided textbooks, suggesting that instructional resources are critical (Gilligan et al. 2022). Linking teacher promotions to performance in China was also associated with higher effort, but only when promotions were on the horizon (Karachiwalla and Park 2017). A review of 15 PFP evaluations in LICs and MICs finds that most failed to improve student test scores (Breeding, Bêteille, and Evans 2019). Some programs had adverse effects, such as cheating to secure incentives, and only one-third of the programs were sustained beyond the evaluation period. For programs that did work, political will, teacher buy-in, and the technical capacity to comprehensively assess teacher performance appear to be key factors. Overall, evidence suggests that strengthening school management and teacher accountability for student outcomes could generate greater efficiencies in education spending and that PFP programs offer no inevitable payoff.

In parallel findings for the health sector, the literature suggests that providing flexible financing and decision-making power to health facilities can increase the value per dollar spent on primary health services. A review of financial incentives in health service delivery finds that performance-based financing can improve coverage in low-income settings with centralized health systems (de Walque et al. 2022). It finds, however, that PFP had limited impacts, especially relative to direct facility finance, which provides autonomy to frontline health facilities to allocate operating budgets without structured financial incentives. For example, providing operating funds to public health facilities in Nigeria had comparable effects to PFP on health care use, but at half the cost (Khanna et al. 2021). A similar conclusion was seen in Zambia (Friedman et al. 2016). Greater efficiency in health service spending and better outcomes may be achieved by reallocating resources within a constant budget envelope toward direct facility financing, supportive supervision, and overcoming financial barriers to accessing health care.

Digitalization also holds promise for increased public spending efficiency. One way it does so is that digital transformation can reduce leakages from public spending. In India, a reform to the workfare transfer system reduced administration costs and improved transparency, resulting in persistent savings of almost 20 percent of program expenditure after a nationwide scale-up (Banerjee et al. 2020). Program expenditures dropped, because the official database dropped fake households and program officials' personal wealth fell. Investing in delivery systems is likely to be cost-effective not just for regular transfers but also for future crisis response. Digital platforms can enable timely and targeted support during a crisis, as demonstrated during the pandemic. Chapter 7 discusses in more detail the more general benefits of digitalization for the conduct of fiscal policy.

Conclusion

This chapter has highlighted the importance of choosing fiscal policies that bring long-run growth and benefits, and finding ways to comprehensively quantify the benefits and costs for policy analysis. Governments currently face difficult fiscal trade-offs. Considering these long-run benefits and choosing high-value policies will be essential to ensure that governments make choices in a way that benefits poverty reduction and shared prosperity in the long run. Without a focus on high-value fiscal policies, it will be hard to reverse the setback to progress, including the loss of learning and opportunities experienced by children described in part 1 of this report. Chapter 7 further discusses policy options and provides a set of simulations that underscore the importance of prioritizing faster growth.

Notes

1. Fiscal externalities can also be negative; for example, a policy can reduce labor supply and tax revenue or require increased spending on something else (for example, health care).
2. The mathematical formulation for the marginal value of public funds has been around for decades (see, for example, Mayshar 1990). Hendren and Sprung-Keyser (2020) highlight its empirical usefulness in the wake of an abundance of causal policy estimates.
3. This is done by assessing how much each affected individual or household is willing to pay for their observed benefit.
4. Children in beneficiary households (beneficiary households are those with children who are enrolled in preprimary programs that receive increased investment) will have benefits equal to the discounted gain in lifetime earnings that increased investments in preprimary education generate. Despite limited evidence on the direct impacts of preprimary education on children's lifetime earnings, a sizable literature demonstrates that investments in preprimary education often lead to substantial increases in children's cognitive and noncognitive skills. Holla et al. (2021), for example, review more than 50 studies in a wide variety of contexts and find that investments in preprimary education increase cognitive skills by 0.086 standard deviation in low- and middle-income countries. These gains in skills are translated into gains in years of schooling using recent work by Evans and Yuan (2019). A 0.13 standard deviation increase in cognitive skills is equivalent to a 0.52–0.88 increase in years of schooling, which implies that a 0.086 standard deviation increase in cognitive skills is equivalent to a 0.34–0.52 increase in years of schooling. Translating these gains in years of schooling into gains in lifetime earnings via Mincer regressions from Montenegro and Patrinos (2021), the estimated gain in (discounted) lifetime earnings is between US\$109 and US\$186 in a low-income setting and US\$628 and US\$1,065 in a middle-income setting. Adults in beneficiary households (particularly females) may experience increased labor supply (see, for example, Berger and Black 1992; Cascio 2009; Herbst 2010), in turn leading to increased earnings (at least in the short run). However, this increase in labor supply comes with a reduction in leisure time; thus, the net monetary benefit from increased labor supply is smaller than the increase in associated labor market income. It is assumed that the net monetary benefit of increased labor supply is zero; that is, increased earnings are fully offset by the monetary cost of decreased leisure time. The net cost of investments in preprimary education is assumed to be US\$65 per child in program costs (Holla et al. 2021) and a discounted gain in consumption tax revenue between US\$3 and US\$6 in low-income countries and US\$47 and US\$80 in middle-income countries (using the same calculation method as the cash transfer example). The MVPF is thus estimated to be between 1.8 and 3.1 in low-income settings and from 35.1 to infinity in middle-income settings.
5. The Abdul Latif Jameel Poverty Action Lab, headquartered at the Massachusetts Institute of Technology, is a global research center working to reduce poverty by ensuring that policy is informed by scientific evidence (<https://www.povertyactionlab.org>).
6. Average tax revenue as a percent of GDP for 2010 comes from World Bank Databank (<https://data.worldbank.org/indicator/GC.TAX.TOTL.GD.ZS?end=2020&start=1972>). The 2.3 percent of GDP was defined as follows: $0.17 \times 0.134 = 0.023$ of 2010 GDP.
7. Although learning effects can arise from temporary subsidies (Carter, Laajaj, and Yang 2021).

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