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INVESTING IN EARLY CHILDHOOD DEVELOPMENT

WHAT IS BEING SPENT, AND WHAT DOES IT COST?

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INTRODUCTION

In the developing world, more than 200 million children under the age of five years are at risk of not reaching their full human potential because they suffer from the negative consequences of poverty, nutritional deficiencies and inadequate learning opportunities.[1] Given these risks, there is a strong case for early childhood development (ECD) interventions in nutrition, health, education and social protection, which can produce long-lasting benefits throughout the life cycle.[2] The results from the 2012 round of the Program for International Student Assessment (PISA)—an international, large-scale assessment that measures 15-year-olds' performance in mathematics, reading and science literacy—demonstrate the benefits of ECD: Students in the countries that belong to the Organization for Economic Cooperation and Development (OECD) who had the benefit of being enrolled for more than one year in preprimary school scored 53 points higher in mathematics (the equivalent of more than one year of schooling), compared with students who had not attended preprimary school.[3] Although there is much evidence that ECD programs have a great impact and are less costly than educational interventions later in life, very few ECD initiatives are being scaled up in developing countries. For example, in 2010, only 15 percent of children in low-income countries—compared with 48 percent worldwide—were enrolled in preprimary education programs.[4] Furthermore, even though the literature points to larger beneficial effects of ECD for poorer children, within developing countries, disadvantaged families are even less likely to be among those enrolled in ECD programs. For instance, in Ghana, children from wealthy families are four times more likely than children from poor households to be enrolled in preschool programs.[5]

One of the major barriers to scaling up ECD interventions is financing. In order to address financing issues, both policymakers and practitioners need a better understanding of what is currently being spent on ECD interventions, what high-quality interventions cost, and what outcomes these interventions can produce. If stakeholder groups are made more aware of the costs of ECD interventions, they may be able to support decisionmaking on investments in ECD, to better

estimate gaps in financing, and to work toward securing stable funding for scaling up service provision and for quality enhancement. One of the weakest areas of ECD policy planning is in the realm of financial planning.[6] Good data are scarce on ECD spending and the costs of ECD interventions that are useful for program budgeting and planning; but these data are valuable for a number of reasons, including the fact that they support analyses of what different inputs cost and thus can facilitate considering various alternative modalities for service delivery. In this paper, we focus on what data are available to gain a clearer picture of what is being spent on ECD and what it costs to deliver basic ECD interventions in developing countries.

ECD interventions come in many varieties, and therefore we first define the package of ECD interventions that have been deemed essential. Then we outline a framework for better understanding ECD financing, which combines a top-down approach analyzing expenditures and a bottom-up approach analyzing the costs of delivering individual interventions. We comment on the general methodological issues stemming from these approaches and the limitations of the data that have been produced. Next, we delve into the available data and discuss the different funding sources and financing mechanisms that countries utilize to deliver ECD services and what patterns exist in spending. We provide a brief overview of how many public and private resources in both developed and developing countries are invested in young children, and in which specific subsectors. Although these data on spending illustrate the flows and help us understand how much is being allocated and by whom, the data are limited, and this top-down approach still leaves us with many unanswered questions. Therefore, we turn our attention to the actual costs of individual ECD interventions, which help us further understand what ECD spending can "buy" in different countries. We identify some trends in the actual costs of delivering these services, although there are a number of methodological issues vis-à-vis costing and the services delivered, which lead to wide variations between and within countries and make it difficult to compare programs over time.

Finally, we look at a number of initiatives that are currently under way to collect better data on ECD costs and expenditures, which will be useful for countries in planning programs and identifying funding sources. These initiatives are sponsored by organizations such as UNICEF, Save the Children, the World Bank and the Inter-American Development Bank. Given the gaps in the available data that we identify and the interventions currently under way, we conclude with recommendations for increasing the knowledge base in this area for use in policymaking and planning.

WHAT DO WE MEAN BY ECD?

We start by clarifying what we mean by necessary ECD interventions. In the forthcoming Stepping up ECD: Investing in Young Children for High Returns, the World Bank identifies five periods during the early years for which the delivery of a basic package of services is essential.[7] These packages of intervention include the family support package, the pregnancy package, the birth package, the child health and development package, and the preschool package. In total, 25 essential interventions are identified during these five periods, which include, among others, antenatal visits, birth registration, deworming and preprimary education. These packages span the education, health, nutrition and social protection sectors. As we move to a discussion of the costs of ECD, we refer to these 25 essential interventions, which are outlined in table 1. Although we focus on these 25 essential interventions, we acknowledge the ongoing debate about essential ECD services and the specificity of context in identifying what interventions are necessary in a given country.

Table 1: 25 Essential Interventions in Early Childhood

Stage	Intervention
1. Family support package (conception to 6 years)	Maternal education
	Planning for family size and spacing
	Education about early stimulation, growth, and development
	Social assistance transfer programs
	Prevention and treatment of parental depression
	Parental leave and adequate childcare
	Child protection services
	Access to health care
	Micronutrient supplementation and fortification
	Access to safe water
	Adequate sanitation
	Hand washing
2. Pregnancy package (conception to birth)	Antenatal care
	Iron and folic acid supplements for pregnant mothers
	Counseling on adequate diet for pregnant mothers
3. Birth package (birth to 6 months	Skilled attendance at delivery
	Birth registration
	Exclusive breastfeeding
4. Child health and development package (birth to 5–6 years)	Immunizations
	Adequate, nutritious and safe diet
	Therapeutic zinc supplements for diarrhea
	Prevention and treatment of acute malnutrition
	Deworming
5. Preschool package (3 to 6 years)	Preprimary education
	Continuity to primary

Source: D. A. Debissa, R. Sayre, Q. Wodon, L. Elder, L. Rawlings, & J. Lombardi., Stepping Up Early Childhood Development: Investing in Young Children for High Returns (Washington: World Bank, 2014).

A FRAMEWORK FOR UNDERSTANDING ECD FINANCING

Given that the ECD package to which we are referring encompasses a range of services that span a number of sectors, comparing patterns in financing across countries is challenging.[8] We begin with funding sources for ECD, both public and private. Public funding may come from central governments, state and local agencies for education, social protection and health agencies, integrated programs, or a combination of these. Private funding may come from households; from donations by independent entities such as church groups, nongovernmental organizations (NGOs) and private companies; and from loans and grants from donor agencies, such as the World Bank.[9] Public and private funding for ECD services are often interdependent; for example, public funding may only be available for a narrow portion of the population with low incomes, requiring private investments for wealthier families. Programs that receive public funding may also require private supplements in the form of user fees.

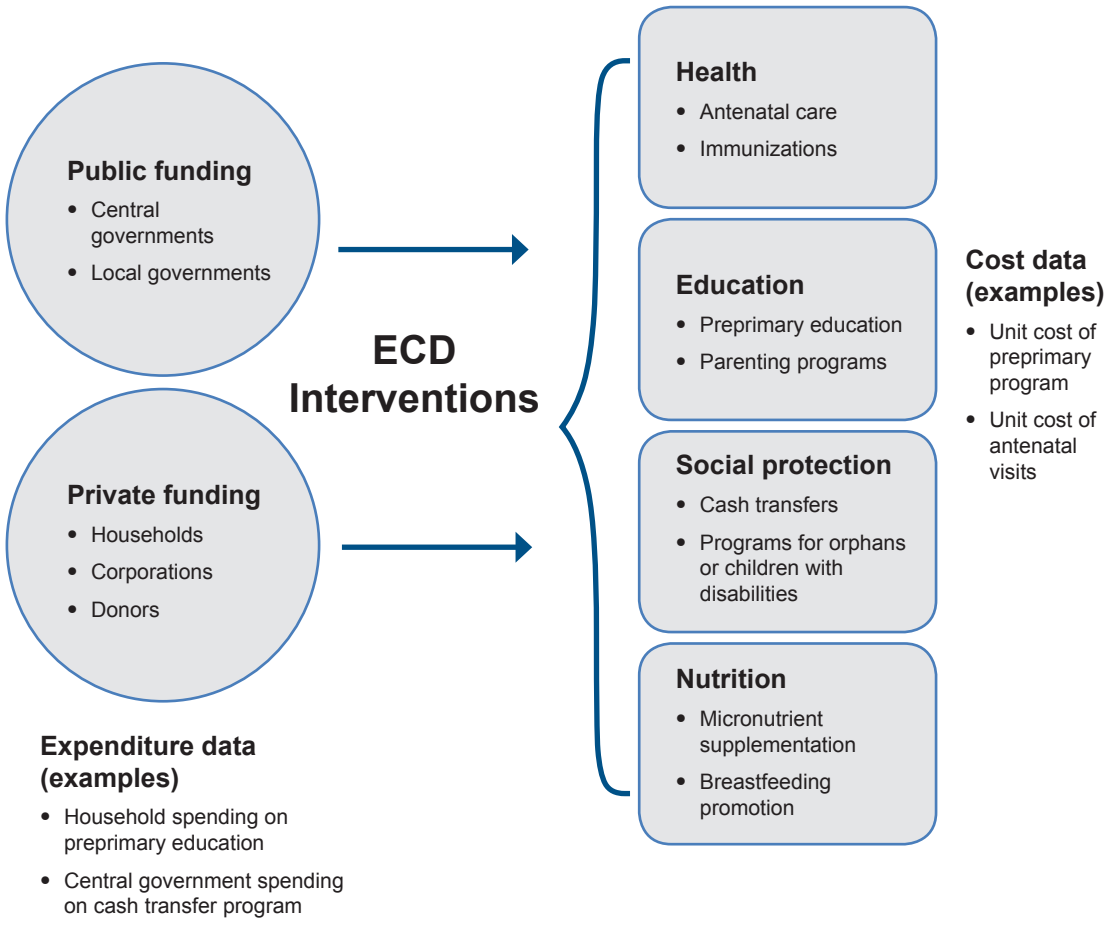
In addition to looking at sources of funding for ECD, we want to gain a clearer understanding of what is being financed. We also want to address various mechanisms that may be utilized to allocate funding for ECD services. Higher-level government agencies may provide block grants to lower-level government agencies for the delivery of services. When a grant is made, there may also be requirements for local governments to match the grant funding or to raise additional funds to supplement the grant.[10] Or, for example, in the case of Colombia, a national payroll tax is used to raise funds for ECD services. Colombia's central government then channels funding to public providers through budget line allocation. In addition, funds may be allocated to families in the form of vouchers or allocated to service providers. Several indirect policies and mechanisms also influence how much public and private entities spend on ECD services and how much families receive.[11] These policies include, among others, eligibility rules, amounts required for copayments, parental leave policies and tax regulations.[12]

Expenditures on education, health, nutrition and social protection programs tell us which general areas receive funding. These spending patterns give us an understanding of priorities and what realistic expectations may be for future spending. However, spending on services in these sectors often occurs at multiple layers of government, complicating the picture. It may be challenging to calculate expenditures at each level of government because funding may be transferred from one level of government to another, causing double counting. Donors may provide assistance to governments, and this may be wrongly attributed.[13] At the same time, the budgets from which data on expenditures are extracted may include only allocations rather than actual spending, which in reality may be far less. Countries may also lack systems to report information on expenditures, leading to inaccurate reporting. In addition, limited financial transparency in a country can also lead to inaccurate reporting.[14] There may be a substantial leakage of funds allocated as they pass to service providers. For example, a Public Expenditure Tracking Survey in Uganda found that only 13 percent of nonwage recurrent expenditures for primary education actually reached primary schools.[15] Moreover, we not only want to know what is being spent on these services; we also want a better idea of the interventions toward which they are directed and the subgroups that are being reached.

Data on the costs of specific interventions can help in generating estimates for what is necessary to invest in providing a particular service. Unit costs, when combined with information on the coverage of a cer-

tain service, can help identify what may be required to scale up an intervention to reach a specified number of people who lack access. A number of issues arise in generating and analyzing cost data. For example, there are different categories of costs that can be considered, such as investment costs, which may be related to the physical infrastructure required, such as a building where preprimary education is delivered. Operational costs, which include the day-to-day expenses of delivering services—for example, staff salaries—also need to be considered. Other costs that may be considered include those that families incur as they access services. These types of expenses may include transportation to and from service facilities or for supplies such as school uniforms. In addition to these direct costs, families may need to forgo pay for work when they attend a health facility to receive various services.[16] And in considering costs, in addition to varying methodologies, other factors may lead to wide-ranging estimates between and within countries. These factors may include program size and quality, the use of unpaid volunteer labor, the cost of living in a particular locality where a service is being delivered and the duration of a program. Figure 1 lays out the framework described in this section for how we can organize expenditure and cost data to better understand ECD financing.

Figure 1: Factors in ECD Financing



EXPENDITURES ON ECD-RELATED SERVICES

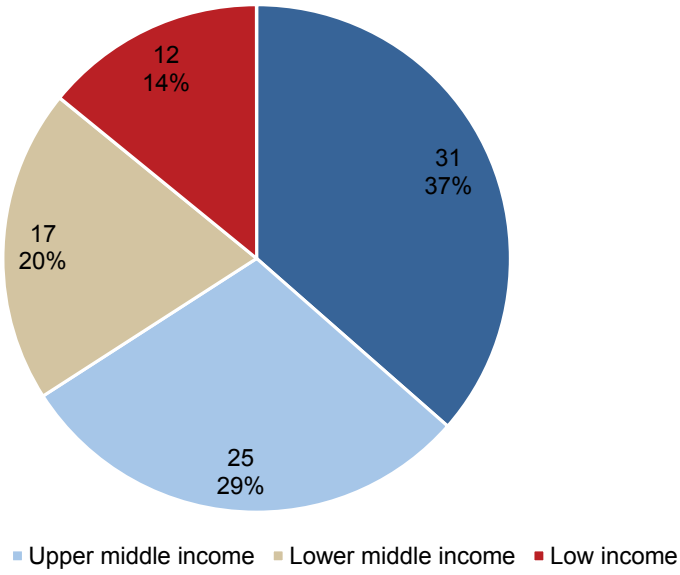
In this section, we discuss in further depth sources of funding for ECD activities, specific allocations made for delivering the services encompassed in the basic package, and actual spending on this basic package. We start out with a discussion of high-income countries, after which we turn our focus to low- and middle-income countries. We end this section with a comment on the relationship between spending and outcomes.

Data Sources

We start with a brief review of which expenditure data are systematically available. Because expenditure data from private sources are largely unavailable, our focus is on public spending. In the case of preprimary education, the OECD and UNESCO Institute for Statistics (UIS) collect some data on spending. For 2010, the UIS database reports government expenditures on preprimary education as a percentage of gross domestic product (GDP) for 90 countries, out of the 228 included in the database. More than half the countries for which these data were available were high-income or upper-middle-income countries. Figure 2 provides a breakdown of the number of countries by income category (using the World Bank's classification method) for which the UIS reports these data.

The OECD also collects data on preprimary expenditures for OECD members and other countries that belong to the Group of Twenty. Among available systematic sources on preprimary spending, data are

Figure 2: Number of Countries with Data on Preprimary Spending in the UIS Database, by Income Category, 2010



Sources: Authors' calculations using the UIS database and the World Bank's income classification criteria—except for those countries for which the UIS reports nil or negligible data on preprimary spending.

relatively thin for low- and lower-middle-income countries. For data on health expenditures, National Health Accounts (with Child Health Subaccounts) provide figures on aggregate spending on child health services. Although these expenditure figures do not exclusively reflect the basic ECD package of services to which we are referring, they do shed some light on the resources allocated among various funding sources for child health. In some cases, Health Accounts have been constructed with the World Health Organization's (WHO's) technical support or through support from the Health Systems 20/20 projects of the US Agency for International Development. These data are available for a number of different years for various countries. Because there is no single repository of data, it is difficult to obtain the exact number of countries in a single year for which these data have been collected. Systematic collection of data is limited for spending related to a basic ECD package in the health, education, nutrition and social protection sectors across countries.

Spending in High-Income Countries

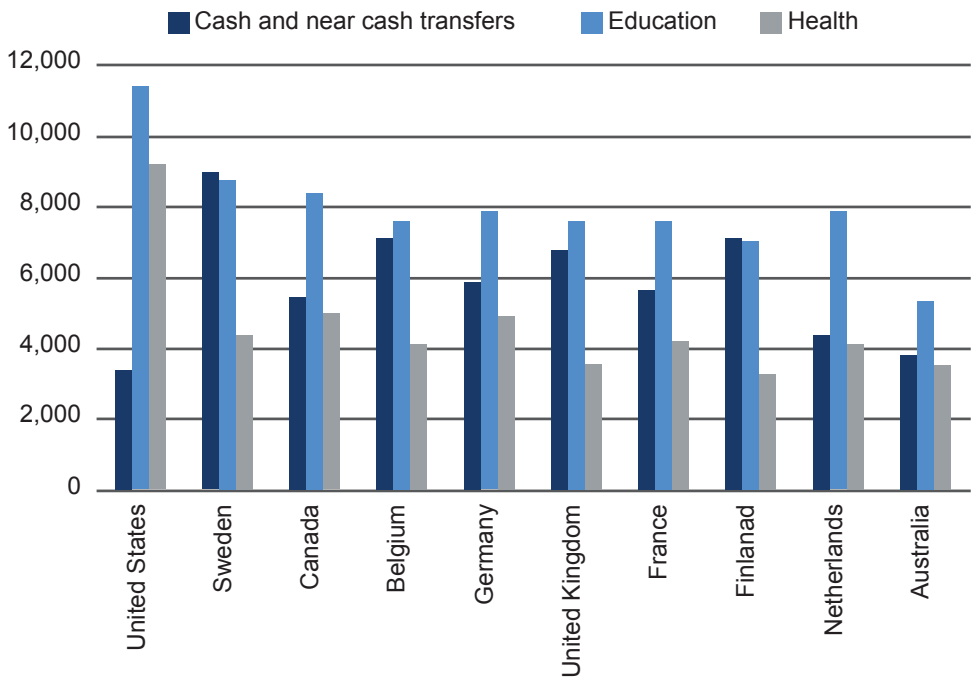
According to OECD data, public expenditures on preprimary education accounts for 0.6 percent of the OECD member countries' collective GDP. However, there is variation between countries; for example, in Australia and Turkey, 0.1 percent or less of GDP is spent on preprimary education, but 0.8 percent or more is spent in Denmark, Iceland, Israel, Luxembourg, Russia and Spain. These differences in spending documented can largely be explained by the amount of private education that is accounted for in these figures, enrollment rates, legal entitlements and costs, and starting ages for primary education. Overall, compared with primary, secondary and postsecondary nontertiary education, preprimary institutions secure the largest proportion of funds from private sources.[17]

In a comparative study, Garfinkel and colleagues show that unit costs for early childhood education (ECE) across nine rich countries for which data could be obtained, range from $2,010 in the Netherlands (1999) to $4,030 in Germany (2000). The overall average across these countries was $2,469.[18] Although these figures help us to better understand what amount of public expenditures is directed toward preprimary education at an overall level, it is difficult to use these data to recommend an appropriate level of spending.

Although no single institution or data source systematically collects information on high-income countries' spending on ECD services other than preprimary education, comparative studies do exist that look at spending by age group—though they are also hampered by both conceptual and data problems. Starting with a narrow definition of expenditures that includes "cash benefits for families" and "services to families," the US spends very little on children compared with other OECD countries. For the period 1985–2000, per child in the age group 0–15, the US spent an average of just 2.4 percent of GDP.[19] That puts the US all but last in a group of 20 OECD countries. Sweden spends the most, at 22.9 percent of GDP per capita. and Spain spends the least, at 1.6 percent. However, this picture changes quite dramatically when tax credits—and, especially, education expenditures—are included in the definition of "expenditures on children." Then the US ends up in the middle, with 29.6 percent of GDP per capita spent on the 0–15 age group, while Sweden stays at the top, with 54.1 percent.

Another big category of expenditures is health care. A careful study by Julia Isaacs that includes health expenditures shows that among 10 OECD countries for which data were available, the US leads when it comes to government spending on family benefits, education, and health; see figure 3.[20]

Figure 3: Average Benefits to Households with Children in 10 OECD Countries (in real 2000 US PPP Dollars)



Note: Garfinkel, Rainwater, Smeeding (2004), table 2. Data are from 2000 (United States, Sweden, Germany, Finland), 1999 (United Kingdom, the Netherlands), 1997 (Canada, Belgium) and 1994 (Australia, France).
Source: J. Isaacs, A Comparative Perspective on Public Spending on Children (Washington: Brookings Institution Press, 2009).

We see that in the US, education expenditures make up the single largest component of social expenditures for households with children, with health care a strong second. In some countries, cash and near-cash transfers are significantly larger than in the US. The most recent data available from the OECD show that, on average, public spending on children age 0–5 years equals 25 percent of the median household income.[21] This percentage increases rapidly for older children, when expenditures on primary and secondary education are included. Expenditures on ECD as a percentage of all social (public) spending vary from 38 percent in the Czech Republic to about 10 percent in Switzerland, with the US being second from last, at 11 percent (2007).

Great care needs to be taken when interpreting those data because they only include central government spending and non-central government expenditures are not captured. Still, the variation across countries is remarkably large. In Hungary, benefits for children age 0–5—such as cash benefits, tax breaks, and child care—total almost 70 percent of median household income, while for Switzerland, the US, Chile and South Korea such public spending is about 10 percent of median income. (For a more detailed discussion of expenditures on children in the US, see annex 1.)

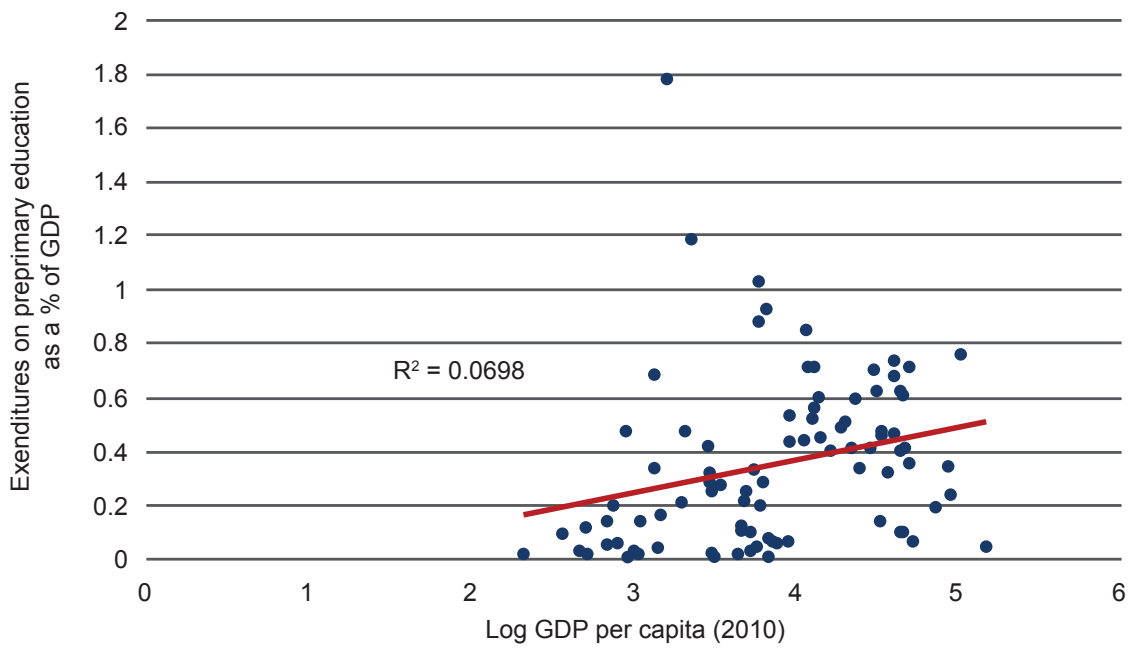
Although we are severely hampered by definitional problems and a lack of data, we can nonetheless make three generalizations from this brief overview

of public spending on children in high-income countries. First of all, we note the large variations across countries. Clearly, countries differ in their judgment of how much the state should provide for children and how much should be left to households. Expenditure data from households are largely lacking. Second, the categories of spending we identified in high-income countries are very similar across countries: income support, health and nutrition, and education. And third, at least for the US, income support and nutritional inputs are relatively stable for the entire age range from 0 to 5 years, health expenditures are relatively large in the 0–2 age group, and early preschool costs are an important component for the 3–5 age group.

Spending in Low- and Middle-Income Countries

In general, we find that government spending on ECD, specifically reflected in preprimary allocations and child health services, is minimal in low- and middle-income countries. In figure 5, we plot the relationship between income and expenditures on preprimary education for all countries for which data were available in 2010. As figure 5 shows, there is a small positive relationship between a country's GDP per capita and its expenditures on preprimary education, but at every level of income, the variation among countries is large.

Figure 4: Relationship between a Country's Income and Its Expenditures on Preprimary Education



Sources: UNESCO Institute for Statistics data; World Bank data.

Table 2 presents information on the coverage of preprimary education and aspects of the financing arrangements in place for a selected group of low- and middle-income countries. These data demonstrate that the share of public funding for preprimary programs varies across countries, as do the corresponding coverage rates. For example, India and Indonesia have similar coverage rates, but differ vastly in their primary sources of funding for preprimary education, as private funding appears to play a more important role in Indonesia.[22] (One obvious limitation of the approach of considering overall coverage rates is that access to services for the most disadvantaged is obscured.) From these data, we conclude that countries face different circumstances in mobilizing funds for ECD. Valerio and Garcia identify three factors that influence resource mobilization for ECD: a country's ability to mobilize public resources through political capital for ECD, institutional factors that enable a country to mobilize resources at various levels of government, and a country's ability to draw on private resources for ECD, which is related to its relative wealth and the perceived value of ECD.[23] This is demonstrated further by a recent report benchmarking early education across the world, which found that in many countries where significant efforts are being made to provide preschool opportunities for all families, they are being made despite budgetary difficulties and relatively lower average per capita incomes.[24]

Table 2: A Comparison of Preprimary Coverage Rates and Financing Arrangements

Country	Age Group (years)	Coverage (%)	Funding Sources (%)	Public Funding as % of GDP
India	3–5	40 (2006)	Public share: 73 Private share: 23 (2003)	2.25
Indonesia	5–6	44 (2007)	Public share: 5 Private share: 95 (2002)	0.01 (2002)
Jordan	4–5	32 (2007)	Public share: 1 Private share: 99 (2002)	Minimally public funded
Mexico	3–5	114 (2007)	Public share: 1 Private share: 99 (2002)	0.52
Turkey	3–5	16 (2007)	Public share: 99 Private share: 1 (2004)	0.01 (2004)

Source: Adapted from "Comparing Costs of Early Childhood Care and Education Programs: An International Perspective," by H. Levin and H. Schwartz, Hacienda Pública Española 201 (2012): 39–66.

Household spending on preprimary education can be significant, even in low- and middle-income countries. This spending may be allocated to either private or public programs. For example, though enrollment in private preprimary education is low in India, public ECD services require a significant level of cost sharing.[25] It appears that households can play a central role in providing resources for preprimary programs. A recent four-country scoping study conducted by the UBS Optimus Foundation found that in one urban slum area in Kenya, 75 percent of students are enrolled in preschool, compared with 25 percent in rural areas. It was estimated in this sample in Kenya that preschool related costs average $18 per child per month, accounting for 12 percent of self-reported household income. Table 3 presents the results of the

Table 3: Preschool Attendance and Household Spending on Preschool in Selected Samples of Urban Slum Areas			
City	**Preschool Attendance Rate**	**Private Preschool Attendance Rate, Among All Preschool Attendees (%)**	**Household Spending on Preschool-Related Costs**
Lagos	70% of 3-year-olds; 90% of 4–6-year-olds attend preschool or primary school	82	$27 per month per child
Accra	70% of 3-year-olds; 90% of 4–6-year-olds attend preschool or primary school	91	$38 per month per child
Nairobi	80% of 4–5-year-olds	94	$18 per month
Johannesburg	60% of 3- and 4-year-olds; 80% of 5- and 6-year-olds attend preschool or primary school	71% of pre-grade R students attend private preschools (pre-grade R targets 3- to 5-year-olds)	$51 per month per child

Sources: UBS Optimus Foundation, "What's Going on with Nairobi's Preschoolers?" Optimus Impact, issue 1 (October 2013); UBS Optimus Foundation, "Exploring Early Education Programs in Peri-Urban Settings in Africa: Summary Findings from Johannesburg, South Africa," Optimus Impact, issue 2 (December 2013); UBS Optimus Foundation, "Exploring Early Education Programs in Peri-Urban Settings in Africa: Summary Findings from Lagos, Nigeria." Optimus Impact, issue 4 (February 2014); UBS Optimus Foundation, "Exploring Early Education Programs in Peri-Urban Settings in Africa: Summary Findings from Accra, Ghana," Optimus Impact, issue 3 (January 2014).

scoping study. The parents who were included in this sample prioritized academic achievement for their children and believed it to be important in preparation for primary school, and thus they were motivated to spend on it.[26]

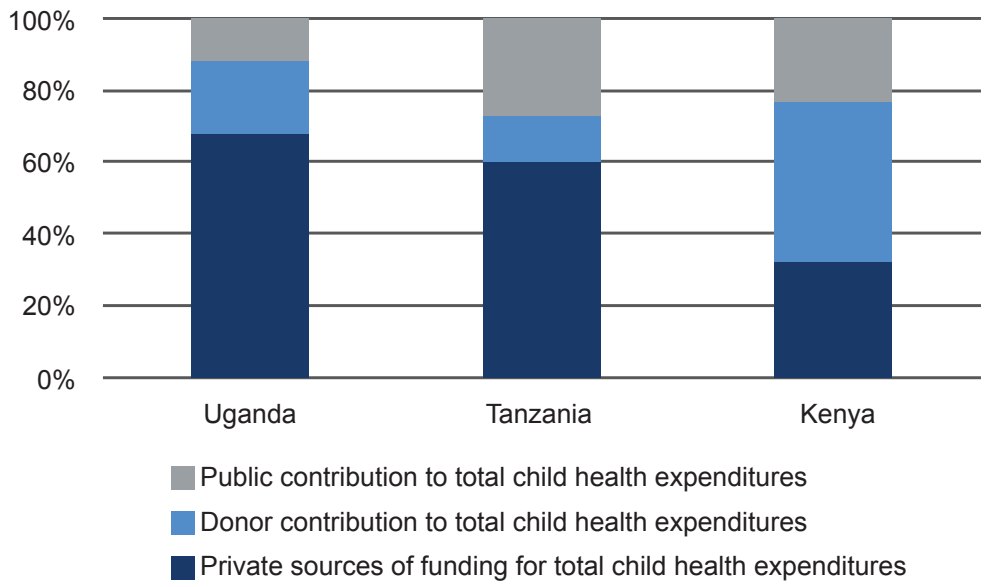
Private household spending on preprimary education raises the issue of the affordability of programs. In many countries, private preprimary options are very costly (although private options are not necessarily higher quality). For example, the average annual cost of full-day private preschool is almost 67 percent of per capita income in South Africa and 114 percent of per capita income in Ghana. Public funding is clearly important for reaching children at all income levels. In order to do so, governments may utilize a variety of financing mechanisms. They may fund programs that are at no cost to families or provide families or providers with subsidies.[27] Below, we look more closely at examples of specific financing models that countries have utilized to enhance access to ECD services.

Next, we consider expenditures on health and nutrition services in low- and middle-income countries. Data from National Health Accounts' (NHA) exercises highlight total health expenditures and the amount allocated to child health within overall spending estimates. Table 4 shows some data from recent NHAs conducted in Tanzania, Kenya and Uganda. For these three countries, $20–40 was spent per child on health in one year by private, public and donor sources of financing. What is clear is that the amount of health expenditures dedicated to children under 5 years of age is disproportionately low compared with this age group's share in the overall population.

Table 4: Child Health Expenditures in Uganda, Tanzania and Kenya, 2009–10			
Measure	**Uganda**	**Tanzania**	**Kenya**
Child health expenditures as a % of total health expenditures	14	9.40	8
Percentage of population under 5 years of age	20		15
Child health expenditures as a % of GDP		0.80	
Total child health expenditures per child	$39	$22	$20

Sources: Department of Policy and Planning, Ministry of Health and Social Welfare, United Republic of Tanzania. Tanzania National Health Accounts Year 2010 with Sub-Accounts for HIV and AIDS, Malaria, Reproductive, and Child Health. (Dar es Salaam: United Republic of Tanzania, 2012).; Ministry of Medical Services, Ministry of Public Health and Sanitation, Republic of Kenya. Kenya National Health Accounts 2009-10. (Nairobi: Republic of Kenya, 2013).; Ministry of Health, Republic of Uganda. National Health Accounts: FY 2008-9 and FY 2009-10. (Kampala: Republic of Uganda, 2013).

Figure 5: Sources of Financing for Child Health in Uganda, Tanzania and Kenya, 2009–10



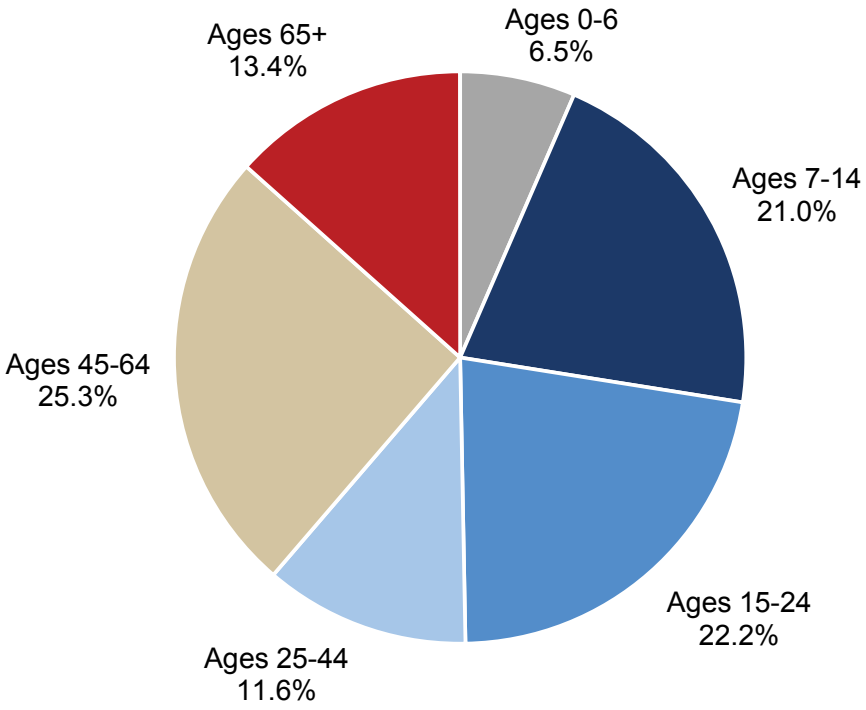
Sources: Department of Policy and Planning, Ministry of Health and Social Welfare, United Republic of Tanzania. Tanzania National Health Accounts Year 2010 with Sub-Accounts for HIV and AIDS, Malaria, Reproductive, and Child Health. (Dar es Salaam: United Republic of Tanzania, 2012).; Ministry of Medical Services, Ministry of Public Health and Sanitation, Republic of Kenya. Kenya National Health Accounts 2009-10. (Nairobi: Republic of Kenya, 2013).; Ministry of Health, Republic of Uganda. National Health Accounts: FY 2008-9 and FY 2009-10. (Kampala: Republic of Uganda, 2013).

Figure 6 displays the breakdown of expenditures coming from public, donor and private sources as identified in the NHA exercises. Note that the public share is relatively low in each of these countries.

When we look further at what health services countries are spending on, we find that little spending is on preventive services (which account for many of the interventions highlighted in the basic ECD package). For example, in Tanzania, only 3.9 percent of expenditures on child health were for preventive or public health services, while this figure stood at 20 percent in Uganda.[28]

Piecing together public expenditure data on education and health tells us that spending on children is disproportionately low in comparison with their share in the population. Although systematic expenditure data across sectors on children for low- and middle-income countries is difficult to find, a study of Turkey, a middle-income country, found that in 2008, only 6 percent of social expenditures at the central government level—which include spending on health, education and social protection—accrued to the population between ages 0-6.[29] On the other hand, 25% of expenditure accrued to the population between the ages 45-64 Figure 7 provides a breakdown of social expenditures by age group in Turkey according to this study.

Figure 6. The Central Government's Social Expenditures in Turkey, by Age Group, 2008



Source: Jesko Hentschel, Meltem Aran, Raif Can, Francisco Ferreira, Jeremie Gingouz, and Arzu Uraz, Life Chances in Turkey: Expanding Opportunities for the Next Generation (Washington: World Bank, 2010).

FINANCING ECD SERVICES AT SCALE

ECD services may be financed through public or private sources of funding or a combination of the two. A country may take a number of approaches in financing ECD; however, the model utilized will influence the affordability, equity and efficiency of ECD opportunities. Grunn identifies several financing models, which vary based on the origin of funds and the role that public, private and voluntary actors play in delivering services with those funds.[30] Public funding for ECD may originate at the central or local levels and may be directed to providers (i.e., supply financing) or households (demand financing). Funds may be raised from general revenues or specifically earmarked taxes, as is the case in Colombia. In the case of "direct public supply," the central government funds and directly provides the services. In Brazil, the model is "decentral public supply," as public funding flows from the central to the municipal governments and the municipal governments provide services directly. In other cases of supply financing, funds may also be provided by the government in lump sums or on a per capita basis to providers, as is the case in South Africa. Conversely, public funds may be directed to private providers specifically for inputs, such as teachers, health workers, training, textbooks, vaccines or infrastructure. For example, in Indonesia, an ECD program uses a form of input subsidies, which are directed in part to teacher training.

At the same time, publicly financed ECD programs may be available to families based on income, which is the case in the US, where the Head Start program is targeted to low-income households (annex 1 provides more information on the Head Start program). Public funds may be targeted to families and utilized to offset fees for ECD in cofinancing arrangements. This model is utilized in Sweden, where fees depend on parents' income and are capped at a certain amount per month.[31] The four case studies here give snapshots of various aspects of ECD financing models in Colombia, South Africa, Indonesia and Brazil.

Case Study 1: Scaling Up ECD through Earmarked Revenue: Colombia's National Payroll Tax

In 1968, the Colombian Institute for Family Welfare (ICBF) was developed as a semiautonomous agency affiliated with the Ministry of Health. The ICBF provides integrated services, which include child care, parent education, protective services and nutritional supplements for pregnant and lactating women, preschools and schools.[32] One of the main programs that the ICBF supports is the Hogares Comunitarios de Bienestar (HCBs), through which children under the age of 6 are offered care, food and early stimulation in community mothers' adapted homes.[33] The HCBs spend $353.7 per year per child, of which most is spent on food and stipends for the community mothers. In addition, parents pay fees of around $8.10 per month. This program reaches 1.2 million children across the country, and it specifically targets vulnerable, low-income populations.

The ICBF was able to finance ECD activities by mobilizing support for the introduction of a 2 percent national payroll tax in 1974, which was increased to 3 percent in 1988. This payroll tax demands that all private and public institutions allocate 3 percent of their payrolls to the ICBF. In 2004, the ICBF received $540,547,000 in tax income, which was close to 0.6 percent of GDP.[34]

The payroll tax has enabled Colombia to expand investments in vulnerable children. Although we can look to the payroll tax as a success in mobilizing resources for the scaling up of ECD, it has faced difficulties such as opposition from private sector leaders. In addition, several ministries within the country are envious of the payroll tax received by the ICBF, which has increased competition regarding ECD policies and programs. Although a recent evaluation found that the program has a substantive impact on children's nutritional status, because the program targets the most vulnerable children, many children attending HCBs are still stunted according to international standards.[35] These challenges suggest the need for a strong ECD policy, which clearly defines roles among sectors and allows for coordination, while also improving the quality of programs, such as the HCBs.

Case Study 2: Scaling Up ECD through Federal and State Transfers to Municipalities: The Experience of Brazil

In Brazil, municipal governments are primarily responsible for early childhood, primary and lower secondary education,, while the federal and state governments have primary responsibility for higher levels of education. Municipalities are required to spend at least 25 percent of revenue on education, and over 95 percent of public ECE financing is disbursed by municipal governments.[36]

Municipal governments pay into a state fund, which is then redistributed to municipalities based on the number of enrolled public school students. If the funds redistributed do not reach a certain minimum threshold, the federal government makes up the difference. Thus, a significant share of municipalities' expenditures on ECE originates from transfers from state and federal governments. Municipalities in 2010 were guaranteed to receive $873 for each child enrolled in a public full-day crèche and $912 for each child in a full-day preschool. Municipal expenditures per child vary across regions, and in some regions are less than the guaranteed minimum that the federal government ensures. This gap in expenditures suggests that financial barriers are not the only obstacles to providing ECD opportunities, and that issues related to parental demand may also play a role.

Case Study 3: Scaling Up ECD through Provider and Family Subsidies: Experience Expanding Grade R for Disadvantaged Students in South Africa

In South Africa, the preprimary or "reception year" (known as Grade R) for age 5 students has been substantially scaled up. Although there were some classes in operation before 2001, Grade R became official through policy in 2001. As a result, enrollment in Grade R in public schools increased from 226,630 in 2000 to 487,525 in 2008, covering 49 percent of eligible children. In addition, another 200,000 children were estimated to be registered in Grade R classes at community-based facilities.[37] In 2012, the gross enrollment ratio for preprimary education in South Africa was 76 percent.[38]

Grade R is funded via two different mechanisms. First, provincial governments fund grants to community-based ECD centers on a per learner basis, reaching areas where other ECD opportunities are unavailable. Funding via this mechanism was slated to reach a maximum of 135,000 children. Second, Grade R in public primary schools is financed by a poverty-targeted grant-in-aid per student, which ranges from $0.20 to $0.60 per student per day for 200 school days. Up to 30 students in a school can receive this subsidy, which is spent on educator costs, learning materials, training, furniture, nutrition and educational equipment. In addition to funding Grade R, means-tested subsidies are provided for students ages 0 to 4 to attend ECD centers. Although these mechanisms have helped in reaching vulnerable children, additional financing is necessary.[39] In 2005–6, it was estimated that ECD accounted for only 0.7 percent of the total education budget, which must be increased in order to improve the quality of services and reach more children.

Case Study 4: Scaling Up ECD through Provider and Input Subsidies: Block Grants in Indonesia

Since 2002, the Ministry of National Education (MONE) in Indonesia has funded block grants to encourage private sector participation in ECD provision. These grants are used as seed funds by private and nonprofit organizations to expand their operations. These grants support both formal and nonformal ECD programs. Between 2002 and 2005, the MONE Directorate of Early Childhood Education provided continuing block grants to 4,000 ECE institutions and new block grants to 3,000 new initiatives. The grants varied in amount—for example, for kindergarten and child care programs, grants totaled $3,000, whereas grants for informal health services, known as Poysandu programs, totaled $300. These grants only supported a portion of provider costs.

Since 2007, the World Bank has supported a project in 3,000 villages in 50 districts to support ECE development. (An impact evaluation was conducted alongside this project.)[40] The project has three components: (1) community sensitization to importance and benefits of ECE development and training on how to submit a proposal for using project funds; (2) block grants of $18,000 over three years to set up and operate two ECE development centers; and (3) teacher training of 200 hours each to one teacher and one child development worker per center. A recent impact evaluation found that the combination of raising community awareness and the opening of additional centers led to an enrollment rate that was 5.6 percentage points higher in treatment villages. In addition, children who enrolled in ECE development programs showed significantly higher levels of physical, socioemotional and cognitive development than those who did not.

A Note on Spending, Financing Arrangements and Outcomes

Expenditures on ECD are low overall, and targets must be raised. Vargas-Baron suggests that nations should devote at least 0.5 to 1 percent of GDP to parent and ECE and at least 0.3 to 0.5 percent to maternal and child health care.[41] At the same time, it is recognized that cross-country recommendations about spending and effective financing arrangements are difficult to make, given the limited comparability of data, which has been demonstrated in this paper, as well as varying country contexts. No single financing strategy will be effective for all countries in achieving particular enrollment levels or outcomes later in life. For example, in Kenya, private sources of funding are the most prevalent for preprimary programs because households bear 95 percent of the costs. However, the country's overall gross enrollment rate was 51 percent in 2009.[42] In other countries, such as the United Kingdom, families are the largest contributor of funding for ECD programs, yet it enjoys full enrollment.[43] However, this high enrollment is made possible by a financing model in which child tax credits and child care allowances are provided on a means-tested basis to parents.[44] In addition to making the case that higher spending is needed, as well as efforts to explore various financing models for delivering ECD, the wide variation of definitional and conceptual issues that we encounter make a case for initiatives that more systematically analyze government spending on ECD services, which in turn will enable policymakers to better identify sources of funding and financing options.

THE COSTS OF ECD INTERVENTIONS

In this next section, we turn to a discussion of the costs of delivering essential services in early childhood. This section considers methodological issues in estimating costs, as well as what factors influence variation in the data, as mentioned in an earlier section. Annex 2 demonstrates the data on unit costs for the 25 essential interventions identified and comments on the general availability of cost data for each specific intervention.

Methodological Issues Arising in Cost Estimations

Methodological issues in estimating costs may lead to variation in unit costs identified for programs. For example, programs may utilize voluntary labor or teachers who are paid low salaries, which may be dealt with in different ways in cost calculation. In addition, complications arising from how to treat capital and costs related to program development may also contribute to this variation.[45]

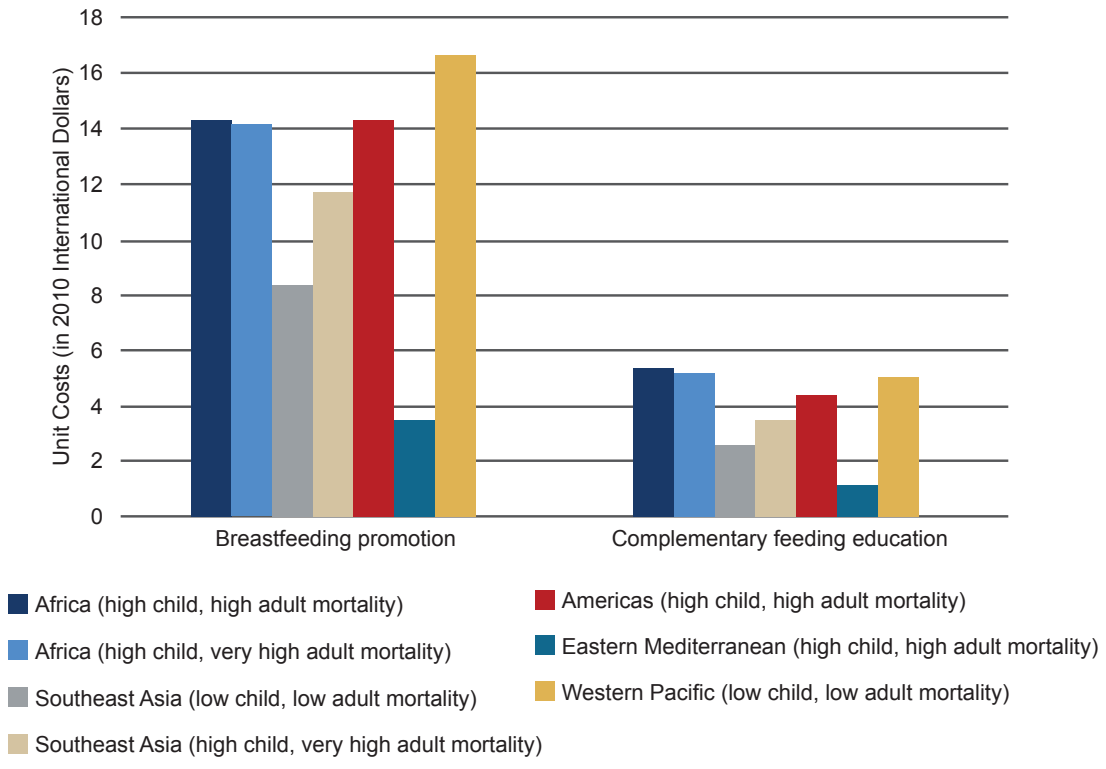
For example, a recent study undertaken by the Inter-American Development Bank (IDB) identified the costs of programs delivering child care services to children ages 0 to 3 through institutional and community modalities and parenting support programs. Based on financial information about the programs' income and expenditures, wages paid to employees, and the fees charged to the families utilizing the services, the study researchers estimated the annual cost per child of these programs.[46] The average annual cost per child of the child care service programs studied was $1,239, although this figure ranged from a low of $26 to a high of $3,264 for individual programs. Accurately estimating the actual cost of delivering such programs was complicated by the fact that many staff members worked on a volunteer basis or only received small stipends. For example, in 27.6 percent of child care programs in this sample, staff were either volunteers or worked for only a stipend. Staff working on a volunteer basis were even more prevalent in the parenting programs identified in this sample, as only 16.7 percent of the staff members in the parenting programs analyzed had an employment relationship with the programs. (The range of costs per child for the parenting programs in this sample were between $13 and $599.[47]) Another issue encountered was that some programs collect contributions from parents, although they may not be officially allowed to do so, given the arrangements of the public funding they receive.

Variations in Costs Arising from Program Differences

In addition, variation in cost estimates may reflect the quality of program inputs. For example, staff salaries are often the costliest part of preprimary programs, making child/staff ratios and a country's per capita GDP indicators of overall cost.[48] Similarly, in terms of health services, antenatal care is more expensive in Ghana if a trained doctor administers services as opposed to another type of health care worker.[49] In the IDB study described above, it was found that programs with higher standards and requirements for education were more expensive, because they needed to offer higher staff salaries.[50] In the Roving Caregivers Programs (RCPs) in the Caribbean Islands, staff wages were found to increase as the program became more integrated within governments, given higher standards for the wages of government officials in comparison with those of NGO workers.

Other factors that may influence costs include the area where services are being delivered. For example, Bhutta and colleagues found that the unit costs for a selected number of child and maternal nutrition interventions were higher in Africa compared with other regions due to the higher labor costs and the extra travel time required there to deliver services.[51] Extra time for delivery using outreach was required due to lower population densities in many areas and the lower coverage of primary care facilities. Conversely, it is possible that some aspects of programs are less costly in rural areas due to the lower wages paid to staff. Figure 7 shows the unit costs estimated for various subregions (as defined by the WHO) for breastfeeding promotion and complementary feeding education interventions. One of the assumptions made by the researchers in estimating these costs was that the base delivery platform for delivering these services was outreach programs in Sub-Saharan Africa, and primary health clinics in other regions.

Figure 7: Unit Costs (in 2010 International Dollars) of Breastfeeding Promotion and Complementary Feeding Education, by WHO Subregion



Source: Z. Bhutta, J. Das, A. Rizvi, Lancet Nutrition Interventions Review Group, Maternal and Child Nutrition Study Group et al., "Evidence-Based Interventions for Improvement of Maternal and Child Nutrition: What Can Be Done and at What Cost?" 2013, http://thousanddays.org/wp-content/uploads/2013/06/Nutrition2_p40_65.pdf.

In addition, program size has an impact on costs. For instance, small-scale ECD programs may have higher unit costs.[52] A cost analysis of the RCPs for five Caribbean Islands found that the cost per child of the parenting initiative was $900 per child in Dominica, where 187 children were enrolled in the program, but $58 in Jamaica, where 1,410 children were enrolled (table 6). One reason for this reduction in unit costs was that overhead costs decreased per child as the number of children participating increased.[53] It should be noted, however, that reaching the same scale is not possible in all programs. For example, Dominica's rugged terrain makes it difficult for rovers in the RCP to reach as many children as are reached in Jamaica. Another factor allowing for a reduction in overhead costs in Jamaica is the institutional arrangement of the RCP, which is conducted in collaboration with an NGO, which has enabled cost sharing.

Table 5: Overview of Unit Costs of Roving Caregiver Programs

Country	Total Cost (per year, 2008 US dollars)	No. of Children	Unit Cost (per child per year, 2008 US dollars)
Dominica	168,460	187	900
St. Lucia	174,822	294	594
Grenada	194,464	299	650
St. Vincent and Grenadines	149,723	360	416
Jamaica	82,377	1,410	58
Total	769,846	2,550	302
Total (excluding Jamaica)	687,469	1,140	603

Source: J. van Spijk, M. Groot Bruinderink, W. Janssens and J. van der Gaag, "Cost-Benefit Analysis of the Roving Caregivers Programme: A Study on the Costs and Benefits of RCP in Dominica, Grenada, Jamaica, St. Lucia and St. Vincent and the Grenadines," Amsterdam Institute for International Development, 2010.

Program duration is also one of the main factors contributing to variation in unit costs of preprimary programs. Due to the differing number of hours of the program, programs of equal quality in terms of training, teacher pay and class size may differ by a factor of 4 for unit cost.[54]

The Relationship between Cost and Quality

So far, our discussion of the costs of ECD services has identified quality to be a factor influencing variability in the data both between and within countries. Higher-quality inputs appear to cost more—for example, a study looking at the costs of various components of ECD programs in Latin America and the Caribbean describes this relationship. In the sample of programs studied, those requiring a minimum level of education for staff members paid higher salaries, which were necessary to attract such individuals.[55] Although it may be fairly straightforward to suggest that higher-quality inputs cost more, we want to understand whether cost influences the quality of the services provided and outcomes attained.

A study by the University of Colorado—*Cost, Quality, and Child Outcomes in Child Care Centers*—analyzed child care centers in four states of the US and ex-

plored this relationship between cost and quality.[56] The researchers collected in-depth financial information on child care centers, as well as program characteristics. In addition, they used observation instruments to assess the quality of care provided for children and teacher involvement, and also conducted individual child assessments to identify development outcomes. In terms of cost and quality, the study found that even average-quality care was costly to provide. For example, providing what was identified as "mediocre care" required $409 per month for 45 hours of care per week. In this study, states with more stringent licensing standards had fewer poor-quality centers, although these standards may have reduced the availability of a center's care or increased its cost. At the same time, the study found that even though better-quality services cost more to provide, the difference in cost is not large.

Given these data, we understand the need for the quality of service delivery to be considered carefully. As we are identifying the costs of providing certain benefits to children and families, we need to keep in mind that even if a certain amount of money is spent on delivering a service, there are a number of other factors that influence the quality of the service provided and the outcome. In the University of Colorado study, for example, it was found that child care in one in eight centers threatened the health and safety of children. Factors other than specific costs, such as the effectiveness of a center's administrator, were important in influencing child care quality. In addition, the study found that child care centers were able to balance the costs of quality of inputs in order to keep costs down. The study found that centers reduce the amount of hours of labor employed if the wage rate of that type of labor increases and substitute between different categories of staff to produce the same amount of services of the same quality. Although many of these results indicate a complex, nonlinear relationship between cost and quality, it cannot be ignored that access to resources can improve quality. For example, in this study, centers that received more in-kind donations or funding from diverse sources were able to use those resources to increase their quality.

Global Studies of Program Costs

In addition to those cost estimates resulting from the work of individual researchers, there have been global initiatives researching the costs of ECD interventions. For example, the Disease Control Priorities Project provides policy recommendations to reduce the global disease burden by focusing on the question of the cost-effectiveness of interventions in health and nutrition. The upcoming third edition of the project's publication, Disease Control Priorities Project 3, will expand on the cost-effectiveness work done through the two earlier editions, and will include cost-effectiveness research in a number of areas, including maternal and child health and nutrition.[57]

Another initiative, the Copenhagen Consensus, brings researchers together to identify solutions to global development challenges by focusing on the cost-effectiveness of investments. In various papers published through this project, cost data and research on cost-effectiveness of interventions have been compiled for a number of interventions that are included in basic ECD package that we have defined, including micronutrient supplementation, deworming, access to safe water and immunizations.[58]

NEW INITIATIVES TO BETTER UNDERSTAND ECD COSTING

In order to address financing constraints, which limit the scaling up of ECD services, we need systematic data collection on spending. Although the data currently available are limited, fortunately, a number of promising initiatives have been recently completed and others are under way to better understand the costs of and financing needs for providing ECD services at scale. Some approaches start with identifying the costs of delivering individual interventions, while others look more closely at overall spending levels. (Annex 2 lists the interventions and the current status of available cost data.)

The UNICEF Regional Prototype

The UNICEF Regional Prototype study in West and Central Africa, collects data on the costs of preprimary and parenting programs (where available) and develops various scenarios for scaling up. The countries currently involved include Sierra Leone, Togo and Cape Verde. Combining data from the Ministry of Education in Sierra Leone on the enrollment of children in preschool programs (13 percent overall) and the distribution among the different types of institutions providing the service (which influence the cost make-up) and data on program costs collected from a sample of programs, Mingat estimates the aggregate costs for preschool at the country level in 2010.[59] These estimates are developed by simulating all the costs of the resources needed for each type of institution delivering the service. Costs considered include the salaries of different types of staff (trained teachers, untrained teachers, helpers and support staff), pedagogical consumables and social activities. Table 7 provides the framework utilized in analyzing the costs of these programs. This framework is very comprehensive, including both public and private sources of funding and using a detailed breakdown of the various cost categories.

Given estimates that in 2010, 1.6 percent of Sierra Leone's recurrent budget for the education sector was spent on ECD and the country's current level of political support for ECD, Mingat estimates that 6–7 percent of public recurrent spending could be mobilized for ECD in 2025. Furthermore, the total capital cost of the ECD program is estimated in different scale-up scenarios, which vary the amount of public recurrent resources that could be mobilized for ECD programs in 2025 and the coverage rate that could be achieved. In these various scenarios, quality is also varied. For example, the scenarios vary the number of trained teachers, number of years of preschool and number of days over the year that the program is administered. This scale-up plan will help policymakers in Sierra Leone understand the financing gap they face and their different options for increasing the coverage of ECD services.[60]

The World Bank's Early Learning Partnership

The World Bank's Early Learning Partnership in the institution's Africa region is developing costed implementation plans, in coordination with UNICEF in some countries, that consider the scaling up of the ECD services presently available in various countries. Considering these ECD services, the plans will identify a range of service delivery models and costs per unit in order to identify financial and other needs for potential scaling up. The audience for these costed implementation plans includes policymakers as well as external funders, such as foundations. This work will pay special attention to urban areas, as well as services delivered at the level of municipalities. An initial part of the process includes conducting surveys in small samples of center-based programs to better identify the costs involved.

Table 6: Elements Characterizing Operation, Cost and Financing, by Types of Services

	Formal									Community	Total		
	Public			Private									
				Mission			Individual						
Enrollment	3,161			14,161			15,318			4,222	36,862		
	Paid by			Paid by			Paid by			Paid by	Paid by		
Source of financing	Govt	Users	Total	Govt	Users	Total	Govt	Users	Total	Users	Govt	Users	Total
Teachers													
Trained	85	0	85	379	0	379	61	349	410	0	525	349	874
Unqualified	51	0	51	228	0	228	0	247	247	181	279	428	707
Total	135	0	135	607	0	607	0	657	657	181	742	838	1,580
Student teacher ratio			23.4			23.3			23.3	23.3			23.3
Support Staff													
Helpers	0	56	56	0	253	253	0	274	274	75	525	349	658
Other	0	43	43	0	254	254	0	257	257	60	279	428	614
Total	0	99	99	0	507	507	0	531	531	135	742	838	1,272
Student Support Staff Ratio			31.9			27.9			28.8	31.2			29.0
Monthly salary cost (000 Le)													
Trained teacher	500			500			500	700					
Unqualified teacher	300			300				400		200			
Helper		200			200			200		150			
Other support staff		150			150			150		100			
Spending on salaries (millions Le)													
Teachers													
Trained teachers	500			500			500	700					
Unqualified teacher	300			300				400		200			
Total spending on teachers	694	0	694	3,095	0	3,095	366	4,117	4,483	651	4,154	4,769	8,923
Support staff													
Helpers	0	135	135	0	607	607	0	657	657	136	0	1,535	1,534
Other support staff	0	179	179	0	912	912	0	955	955	162	0	2,209	2,209
Total spending on support staff	0	314	314	0	1,519	1,519	0	1,611	1,611	298	0	3,743	3,743
Total spending on salaries													
Pedagogical consumables													
Amount/student/year (Le)	0	9,000	9,000	0	6,000	6,000	0	20,000	20,000	6,000	0	12,075	12,075
Aggregate Amount (million Le)	0	28	28	0	85	85	0	306	306	25	0	445	445
Social activities													
School meals													
Cost of meal (Le per day)	0	1,500	1,500	0	1,500	1,500	0	1,500	1,500	1,000	0	1,443	1,443
Number of days per year	0	90	90	0	90	90	0	90	90	90	0	90	90
% targeted	0	30%	30%	0	30%	30%	0%	30%	30%	30%	0%	30%	30%
Aggregate spending (million Le)	0	128	128	0	574	574	0	620	620	114	0	1,436	1,436
Others (ceremonies, sports...)													
Amount/student/year	0	100	100	0	100	100	0	200	200	50	0	135.8	135.8
Aggregate spending (million Le)	0	316	316	0	1,416	1,416	0	3,064	3,064	211	0	5,007	5,007
Total social activities (milion Le)	0	444	444	0	1,990	1,990	0	3,684	3,684	325	0	6,443	6,443
Total spending (million Le)													
Pedagogical elements	694	343	1,036	3,095	1,604	4,699	366	6,035	6,401	975	4,154	8,957	13,111
Social activities	0	444	444	0	1,990	1,990	0	3,684	3,684	325	0	6,443	6,443
Total spending	694	787	1,480	3,095	3,594	6,689	366	9,719	10,085	1,300	4,154	15,400	19,554
Spending per student (Le)													
Pedagogical component	219,551	108,488	328,039	218,544	113,288	331,832	23,893	393,984	417,877	179,499	112,701	237,101	349,797
Social component	0	140,500	140,500	0	140,500	140,500	0	240,500	240,500	77,000	0	174,782	174,782
Total per student spending	219,551	248,988	468,539	218,544	253,788	472,332	23,893	634,484	658,377	256,499	112,701	411,885	524,579

Source: A. Mingat, Technical Note Identifying Scenarios for the Medium-Term Development of ECD Activities in Sierra Leone (New York: UNICEF, 2013).

The World Bank Africa Region's Scaling Up Nutrition Project

At the same time, through the Strengthening Scaling Up Nutrition Analytics and Planning in Africa project, which is supported by the & Melinda Gates Foundation, country-led planning, costing and monitoring activities are under way to scale up nutrition interventions in six to nine high-burden countries, including Nigeria, Togo, Zambia and Mali. The costed scale-up plans for nutrition propose different options for these countries based on different packages of interventions, the malnutrition burden at subnational levels, and local epidemiology, and the context. Recommendations for implementation are then provided based on cost-effectiveness for a certain level of public investment. (Cost-effectiveness is measured in terms of the least cost per disability-adjusted life years, DALYs, saved and the most number of lives and DALYs saved annually.) For example, based on the number of DALYs saved per dollar in these scenarios, it was recommended that Nigeria scale up a limited package of interventions in the country's 16 highest-burden states.[61] Exercises such as this one are useful in identifying funding requirements for nutrition interventions in ECD and in helping set policy priorities. Beyond identifying financing requirements, fiscal space analysis conducted in conjunction with costing exercises can make data the most useful because the funding required for scaling up may be far lower than what is available in a country's budget. Fiscal space analysis can help identify additional sources of domestic and external financing.

The World Bank's Strategic Impact Evaluation Fund

Through the Strategic Impact Evaluation Fund (SIEF), the World Bank is conducting impact evaluations of projects that aim to improve early childhood nutrition, health and development outcomes. As part of these impact evaluations, SIEF is requiring the collection of cost information to analyze the cost effectiveness of interventions studied.

The Inter-American Development Bank's Budget Analysis

Other projects under way include an initiative at the IDB related to a forthcoming publication on the early childhood years, taking a top-down approach to analyzing budget data in ministries that deliver ECD services. This project intends to explain overall national spending on ECD services in 12 Latin American countries by looking at budget lines in relevant ministries for education, nutrition, conditional cash transfers and health. Given the complexity of collecting subnational data, the project is focusing on countries where ECD services receive greater funding at the national level. Although there is much heterogeneity in the data, initial estimates from the program suggest that countries appropriate over 2 percent of GDP on average to ECD services. Another recent initiative includes a paper prepared for the IDB, in which Raquel Bernal defines a basic benefit package for ECD, which includes 11 interventions for mothers and children ages 0 to 5. Bernal estimates the costs of providing this package in Colombia to be $6,119 per child.[62] As initiatives such as these progress and expand in scale, it will be possible to answer additional questions about ECD spending and the costs of delivering services. These initiatives provide promise for the future availability of data on costs and spending that can enable more accurate policy planning forfinancing initiatives. This and the other initiatives described here are summarized in table 8.

Table 7: Costing/Expenditure Analysis Initiatives			
Organization/Initiative	**Summary of Work**	**Costs Considered**	**Countries/Region**
UNICEF Regional Prototype	Costing of preprimary education and parenting programs in various scale-up scenarios taking into account factors related to quality of inputs as well as amount of financing available for programs	Capital and recurrent costs	Mauritania, Cape Verde, São Tomé and Príncipe, Congo Brazzaville, Togo, Sierra Leone, Guineau Bissau, Niger, Senegal, Guinea
Inter-American Development Bank	Analysis of central government budget allocations to ECD Costing of home-visting, day-care, and preschool programs	Costs related to elements of structural and process quality	Mauritania, Cape Verde, São Tomé and Príncipe, Congo Brazzaville, Togo, Sierra Leone, Guineau Bissau, Niger, Senegal, Guinea
World Bank Africa Region: Health, Nutrition and Population Sector; Scaling Up Nutrition Project	Costing evidence-based nutrition interventions and developing scale-up plans in conjunction with fiscal space analysis		Nigeria, Togo, Zambia, Mali
World Bank Africa Region: Education Sector; Early Learning Partnership	Costing scale-up plans of ECD services already in place in countries		Gambia, Sierra Leone, Sudan, Uganda, Kenya, Madagascar
World Bank Strategic Impact Evaluation Fund (SIEF)	Costing interventions for which an impact evaluation is under way in early childhood nutrition, health and development		

Source: J. van Spijk, M. Groot Bruinderink, W. Janssens and J. van der Gaag, "Cost-Benefit Analysis of the Roving Caregivers Programme: A Study on the Costs and Benefits of RCP in Dominica, Grenada, Jamaica, St. Lucia and St. Vincent and the Grenadines," Amsterdam Institute for International Development, 2010.

CONCLUSION AND RECOMMENDATIONS

The main conclusion that we can draw from this review of the available evidence on costing of and expenditures for ECD may appear to be disheartening: We have a long way to go before we will have sufficiently robust data to form the basis for producing reliable estimates about the total costs of scaling up ECD interventions. For instance, estimates of cost per child of such a well-defined intervention as preschooling can range from $18 per month (in Kenya) to $51 (in South Africa). The Head Start program in the US costs more than $600 per child per month. There are good explanations for such large differences, including the income statuses (and thus salary levels) of the countries, the contents of the programs and the contexts within which these programs are being implemented. For example, the RCPs that have been implemented in the Caribbean are well defined and homogeneous. Still, their annual costs per child range from $58 to $900, depending on which island the program is located.

A second conclusion is more positive: The need for more and better ECD cost data is widely recognized, and good progress is being made on some ongoing initiatives. Although these initiatives use different approaches, their results will provide major contributions to our body of knowledge on ECD costing.

A number of observations are worth repeating. Although good government data on child-related expenditures are useful, they can tell us little about the unit costs of providing these services, unless detailed eligibility and participation data are available. The picture becomes more complicated when various layers of governments are involved, and it is still incomplete unless private expenditures are added. At the same time, we know that more spending does not always mean better quality and that priorities and norms regarding social contracts vary by country.

Currently, newer forms of ECD financing are being proposed when looking at various options to scale up existing ECD interventions. For instance, the Center for Universal Education (CUE) at Brookings is currently conducting a study to examine the feasibility of impact investing mechanisms—in particular, a social impact bond to address the financing and delivery constraints for ECD in developing countries. However, for such options to be viable, the scaling-up ECD scenarios need to be based on reliable and comprehensive cost data that are program specific (and thus include quality objectives) and context specific.

The Way Forward

Building on the available evidence—and taking note of the ongoing initiatives by UNICEF, the World Bank, the IDB and organizations—it seems likely that the way forward needs to include the following elements:

- Adopt a clear definition of what we mean by "an ECD program." The World Bank's list of 25 essential interventions already provides a starting point.
- Repeat and expand initiatives such as the UNICEF Regional Prototype study to include other regions and settings. Include detailed analyses of the causes behind the large variations in cost outcome among programs, countries and regions.
- Encourage national and local governments to provide breakdowns by age group of health, education,

nutrition and other relevant program budgets, with a special focus on the very young.

- Given existing gaps in the data, identify ways to collect information on household expenditures on ECD services.
- Over time, develop guidelines and benchmarks for how much countries need to invest in the age group 0 to 5. The level of this (necessary) spending is likely to vary by the level of income of the country, while the division of public and private spending will also be very country specific.
- Hold regular meetings among all the major actors to learn from the outcomes of the ongoing initiatives, and gradually develop a comprehensive framework and methodology for ECD costing that can produce the data necessary to construct the budgets for scaling up ECD programs.
- Pilot the costing methodology developed in selected countries and produce case studies based on the findings.
- Develop new and innovative ways to combine the public and private resources necessary to make scaled up ECD programs a reality.

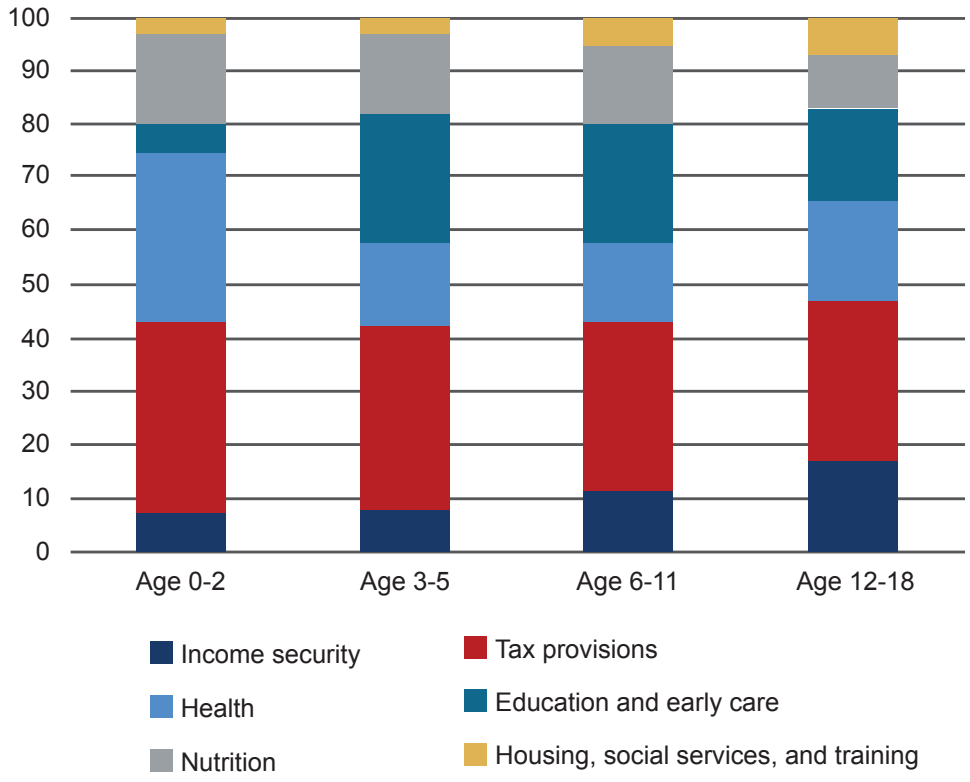
ANNEX 1: THE CASE OF THE US

In 2011, the US federal government spent $5,485 per child on programs for children age 0–2 years.[63] The single largest amount was for Medicaid, the health care program for the poor, costing $1,792 per child. A number of programs focused on providing income support for poor households added $2,465, with the earned income credit and the child tax credit being the largest components, $903 and $703 respectively. SNAP, the food stamp program, costs $657 per child; and WIC, a food supplement program, added $408. An additional $177 was spent on a vaccine program, while housing support added $109 to the total costs. This brief summary shows a number of important aspects regarding federal spending on programs for children in the US. First, income support plays a major role in providing for the very young. Second, health care (including vaccinations) makes up a large portion of the total costs. Third, nutrition is deemed very important. In addition, all the programs mentioned here are targeted to the poor. Eligibility and benefit levels are income-tested, so the unit costs (i.e., the cost per beneficiary or participating child) are much higher (see below). And finally, these are only expenditures covered by the federal government. State-level expenditures (which are relatively small for the very young) are not included, and neither are household expenditures.

The picture for children age 3–5 is somewhat different. Total outlays are roughly the same, $5,072 per child. However, expenditures on Medicaid are less than half, $822, but now preschool expenditures are added: Head Start (described in more detail below) at $611 per child, and a Special Education program costing $212 per child. The other components are very similar to those for the very young. Although the emphasis on income support is high for both groups, the role of health diminishes over time, and educational services become more important. Nutrition remains the same. For education-related expenditures, we can focus on Head Start, for which the best data are available. Created in 1965, Head Start promotes school readiness for the children of low-income families, by providing, education, nutrition, health, social and parenting services. Children can attend schools or Head Start centers, part or full time. The program also includes regular home visits. When looking at the numbers, the following picture emerges: There were roughly 10 million children in the 3–5 age group in the US in 2011, of whom about 20 percent would be eligible for Head Start based on income status. Of those 2 million children, 951,228 were enrolled in 2011, less than half.[64] Total outlays for the program were $7,312 billion, or $7,581 per year per enrolled child.[65] This example shows that the government expenditure data on spending per age group can tell us little or nothing about the unit costs of the program. First, only a fraction of the cohort is eligible to participate in the means-tested programs; and of that fraction (in this case), fewer than half take advantage of it. As a result, unit costs are more than 10 times higher than the government expenditures per child for the relevant cohort.

Figure A1 helps to further illustrate to which areas federal expenditures on each age group are allocated. Tax provisions are a consistently large portion of expenditures across age groups, while income security increases in importance, and nutrition declines, as children grow older. Expenditures on children between the ages of 3 and 5 and 6 and 11 are relatively similar.

Figure A1. Composition of Federal Expenditures (2011) on Children by Age Group



Source: S. Edelstein, J. Isaacs, H. Hahn and K. Toran, How Do Public Investments in Children Vary with Age? A Kids' Share Analysis of Expenditures in 2008 and 2011 by Age Group (Washington: Urban Institute, 2012).

Annex 2: The Availability of Unit Cost Estimates for Basic ECD Services			
Basic Service	**Availability of Unit Cost Data**	**Unit Cost Estimates**	**Source for Unit Cost Estimates**
Maternal education	Limited systematic or context-specific data available or efforts under way		
Planning for family size and spacing	Limited systematic or context-specific data available or efforts under way		
Education about early stimulation, growth, and development	Some cost estimates available; efforts under way to collect data on parenting programs in select countries through UNICEF regional prototype and World Bank's Early Learning Partnership	$58–900 per child for parenting program in five Caribbean countries	J. van Spijk, M. Groot Bruinderink, W. Janssens and J. van der Gaag, "Cost-Benefit Analysis of the Roving Caregivers Programme: A Study on the Costs and Benefits of RCP in Dominica, Grenada, Jamaica, St. Lucia and St. Vincent and the Grenadines," Amsterdam Institute for International Development, 2010. Amsterdam Institute for International Development
Social assistance transfer programs	Limited systematic or context-specific data available or efforts under way		
Prevention and treatment of parental depression	Limited systematic or context-specific data available or efforts under way		
Parental leave and adequate childcare	Limited systematic or context-specific data available or efforts underway		
Child protection services	Limited systematic or context-specific data available or efforts under way		

Annex 2: The Availability of Unit Cost Estimates for Basic ECD Services			
Basic Service	**Availability of Unit Cost Data**	**Unit Cost Estimates**	**Source for Unit Cost Estimates**
Access to health care	Limited systematic or context-specific data available or efforts under way		
Micronutrient supplementation and fortification	Regional cost estimates available	$0.06 for salt iodization for all WHO subregions; $0.52–2.85 for vitamin A supplementation for all WHO subregions	Z. Bhutta, J. Das, A. Rizvi, Lancet Nutrition Interventions Review Group, Maternal and Child Nutrition Study Group et al., "Evidence-Based Interventions for Improvement of Maternal and Child Nutrition: What Can Be Done and at What Cost?" 2013, http://thousanddays.org/wp-content/uploads/2013/06/Nutrition2_p40_65.pdf
Access to safe water	Some cost estimates available	$2.26 per month per household for rural water supply intervention	D. Whittington, W. M. Hanemann, C. Sadoff and M. Jeuland, The Challenge of Water and Sanitation, Copenhagen Consensus Challenge Paper (Copenhagen: Copenhagen Consensus Center, 2008)
Adequate sanitation	Regional cost estimates available	$26–60 per capita, depending on region for initial investment cost of a pit latrine (for rural areas); $52–160 per capita in initial investment for septic tanks or shallow, small-bore sewage for rural areas	B. Evans, G. Hutton and L. Haller, "Closing the Sanitation Gap: The Case for Better Public Funding of Sanitation and Hygiene," paper prepared for OECD Roundtable on Sustainable Development, Paris, March 9–10, 2004.
Handwashing	Cost may be included in cost of Parenting and social support networks and community education about growth and development		

Annex 2: The Availability of Unit Cost Estimates for Basic ECD Services			
Basic Service	**Availability of Unit Cost Data**	**Unit Cost Estimates**	**Source for Unit Cost Estimates**
Antenatal care	Regional cost estimates available	$19 for developing countries (Africa, $23; Asia, $17; Latin America and the Caribbean, $22); includes costs of supplies and personnel for visits and services received	S. Singh, J. Darroch and L. Ashford, Adding It Up: The Need for and Cost of Maternal and Newborn Care (New York: Guttmacher Institute, 2013)
Iron and folic acid supplementation for pregnant mothers	Regional cost estimates available; Cost may also be included in antenatal visits	$4.91–6.41, depending on WHO subregion	Bhutta et al., "Evidence-Based Interventions"
Counseling on adequate diet for pregnant mothers	Cost may be included in cost of antenatal visits		
Skilled attendance at delivery	Regional cost estimates available	$47 for developing countries (Africa, $41; Asia, $41; Latin America and the Caribbean, $87); includes cost of delivery services, neonatal care and basic services for newborns and women in the immediate postnatal period.	Singh, Darroch and Ashford, Adding It Up
Birth registration	Some cost estimates available	$0.23–$0.83 per event of civil registration	C. AbouZahr, J. Cleland, F. Coullare, S. Macfarlane, F. Notzon, P. Setel and S. Szreter, on behalf of Monitoring of Vital Events Writing Group, "The Way Forward," The Lancet 370, issue 9601 (2007): 1791–99.
Exclusive breastfeeding	Regional cost estimates available	$3.52–16.65, depending on WHO subregion	Bhutta et al., "Evidence-Based Interventions"
Immunizations	Some cost estimates available	> than $30 per live birth; includes cost of scaling up vaccine coverage to meet Millennium Development Goals and WHO and UNICEF Global Immunization Vision and Strategy	WHO, UNICEF and World Bank, State of the World's Vaccines and Immunization, 3rd Edition (Geneva: World Health Organization, 2009)

Annex 2: The Availability of Unit Cost Estimates for Basic ECD Services			
Basic Service	**Availability of Unit Cost Data**	**Unit Cost Estimates**	**Source for Unit Cost Estimates**
Adequate, nutritious and safe diet	Some cost estimates available	$5–15 per child per year (not including food)	J. Mason, J. Hunt, D. Parker and U. Jonsson, "Investing in Child Nutrition in Asia," Asian Development Review 17, nos. 1–2 (1999): 1–32
Therapreutic zinc supplements for diarrhea	Regional cost estimates available	$3.57–5.9, depending on WHO subregion	Bhutta et al., "Evidence-Based Interventions"
Prevention and treatment of acute malnutrition	Regional cost estimates available	$138.72–250.85 for management of severe acute malnutrition, depending on WHO subregion	Bhutta et al., "Evidence-Based Interventions"
Deworming	Some cost estimates available	$0.5 for preschoolers	S. Horton, H. Alderman and J. Rivera, The Challenge of Hunger and Malnutrition, Copenhagen Consensus Challenge Paper (Copenhagen: Copenhagen Consensus Center, 2008)
Preprimary education	Some cost estimates available; efforts under way to collect data in select countries through UNICEF regional prototype and World Bank's Early Learning Partnership	$26–3,264 per child per year	M. Araujo, F. Lopez Boo and J. Puyana, Overview of Early Childhood Development Services in Latin America and the Caribbean (Washington: Inter-American Development Bank, 2013)
Continuity to primary	Limited systematic or context-specific data available or efforts under way		

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