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GENDER DISPARITIES AND ECONOMIC GROWTH IN KENYA: A SOCIAL ACCOUNTING MULTIPLIER APPROACH

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ABSTRACT

Realizing high economic growth and generating gainful employment present major challenges for Kenya. This paper analyzes the gendered employment outcomes of various investment options in Kenya using Social Accounting Matrix multiplier analysis. Results reveal that Kenya's agriculture accounts for the highest increase in employee compensation (mainly benefiting skilled labor and disproportionately benefiting men), while Kenya's manufacturing sector accounts for the largest share of job creation. Although women stand to benefit more from employment creation, most of these new jobs are informal with low wages. Kenya's gender disparities are a reflection of existing disparities in the labor market and socioeconomic structure. Therefore, policies aimed at addressing the constraints that limit women's effective participation in the Kenyan labor market, including increasing productivity and raising women's skills, are important for allowing both men and women to benefit equally from employment and growth-promoting opportunities.

KEYWORDS

Employment, gender analysis, social accounting

JEL Codes: J16

INTRODUCTION

Since Kenya's independence in 1963, the government has identified employment creation as a central objective. In the post-independence years (1960s and 1970s), the state played a major role in driving economic growth and providing employment. By the early 1980s, however, economic management had begun to weaken as fiscal indiscipline intensified. Faced with budgetary constraints, the government reluctantly started to liberalize the economy through structural adjustment programs under pressure from multilateral financial institutions. Since the early 1990s, the government has focused on creating a conducive environment for the private sector to play a leading role in economic growth and employment generation. However, sustaining high economic growth while simultaneously generating gainful

employment remains one of Kenya's greatest challenges. The growth in employment has fallen short of the growth in the labor force, leading to high unemployment rates. While Kenya's development policy emphasizes investments in priority areas to realize key development objectives, such as achieving high economic growth and employment creation, this paper seeks to address whether Kenya's growth-promoting investments generate equal employment opportunities for men and women. Arguably, this depends on the gender and institutional structure of the labor market and the economy as a whole.¹

Considerable gender disparities exist in the Kenyan labor market. Although women constitute about 50 percent of Kenya's total population, they account for only about 30 percent of the total formal-sector wage employment and earn less than their male counterparts, even after making adjustments for the type of employment, occupation, and hours of work (Jane Kabubo-Mariara 2003). The gender gap in Kenya's overall labor force participation rates seems to be narrowing (74.7 percent for men and 72.6 percent for women [Republic of Kenya 1999]). However, women's participation rates are higher (compared to men) in rural areas, where they are actively involved in subsistence activities and agricultural production in addition to unpaid domestic work. Along with their expanding labor participation, Kenyan women have experienced a higher unemployment rate compared to Kenyan men. Estimates for the late 1990s show that Kenya's overall urban unemployment rate was about 25 percent, with female unemployment at 38 percent compared to 12.5 percent for males (Damiano Kulundu Manda 2002). Although estimates for 2005–6 show a decline in urban unemployment rate to 19.9 percent, female unemployment is still higher at 25.9 percent compared to male unemployment at 15 percent (Republic of Kenya 2008). Kenyan women also spend less time in wage employment and devote more time to household production than Kenyan men.² Given Kenyan women's less favorable terms in the labor market, a high dependency ratio, and existing gender disparities, the gender-blind implementation of growth and employment policies can perpetuate gender inequalities in development.

Despite gender imbalances, analyses of growth and employment outcomes in Kenya have largely been gender blind (see, for instance, Damiano Kulundu Manda [2004], Damiano Kulundu Manda and Kunal Sen [2004], and Maureen Were [2007]). The limited research that explores gender and employment outcomes in Kenya has shown that increased access to education can increase equality of outcomes only in the public-sector labor market (Kabubo-Mariara 2003; Rosemary Atieno and Francis Teal 2006). Given that Kenya's policy reforms aim to increase the private sector's role, the challenge is in reducing the gender differentials in the private sector, which are largely informal. Using Social Accounting Matrix (SAM) multiplier analysis that draws from a 2003 disaggregated SAM with a sectoral employment extension, this paper analyzes the effects of Kenya's

different sectoral investment policy options (simulations) on employment generation in terms of gender, skill levels, and broad employment sectors (formal and informal). This paper attempts to illustrate how gender disparities in Kenya's labor market and economic structure largely determine the differential employment outcomes for men and women. Strategies and policies aimed at addressing gender-based constraints are, thus, critical if both men and women in Kenya are to benefit equally from employment and growth-promoting opportunities. This is the first attempt to generate an employment satellite account for Kenya and link it with the production sectors.³

ECONOMIC GROWTH AND EMPLOYMENT TRENDS IN KENYA

Economic structure and growth trends

Since independence, Kenya's development agenda has emphasized the role of agriculture and manufacturing as twin engines of economic growth. Although Kenya has transformed from a broadly agriculture-based to a service-based economy, agriculture still accounts for about 25 percent of Gross Domestic Product (GDP). Agricultural production in Kenya consists of both large-scale (mainly commercial) and small-scale farming. Overall, Kenya's economic growth history, like many African economies, has been episodic. The country's growth can be subdivided into three major broad phases: a period of rapid growth after independence (1964–73); an era of external shocks dominated by oil price shocks and structural adjustment (1974–89); and an era of liberalization, inconsistent donor inflows, and economic stagnation (1990–2002), which led to recovery beginning in 2003.

Kenya witnessed rapid economic growth between 1964 and 1973, with an annual average real GDP growth rate of 6.6 percent, which was mainly promoted through public investment, the encouragement of smallholder agricultural production, and incentives for private industrial investment under the import-substitution industrialization strategy. However, the oil crises of the 1970s led to severe balance of payments problems, exposing the country's vulnerability to external shocks and the inefficiency and inadequacy of the import-substitution policy. By the early 1980s, economic management had begun to weaken, fiscal discipline was rising, and the public sector was overextended (Maureen Were, Rose Ngugi, and Phyllis Makau 2006). The first half of the 1980s (1980–4) performed poorly, with an average real GDP growth rate of 3.4 percent. Although the economic performance in the second half of the 1980s was better, real GDP growth rate started declining in 1991, from 5 percent in 1989 to 2.1 percent.

Between 1991 and 1993, economic growth stagnated, and agricultural production shrank at an annual rate of 3.9 percent.

As the economic crisis deepened, Kenya's government, under pressure from the Bretton Woods financial institutions, began implementing a major program of market-oriented reforms and economic liberalization in 1993. Reforms were initiated (or rapidly progressed) in key sectors, including trade, the social sector (health and education), agriculture, and the public sector (Were, Ngugi, and Makau 2006). These included trade liberalization, the downsizing of the public sector, and a reduction in the state's role in the economy, with greater emphasis on the private sector's role. The 1990s were also characterized by the curtailment of external aid inflows as a basis for more reforms. In 2000, the economy recorded a negative real GDP growth rate, but the economy showed remarkable recovery, beginning in 2004, until the post-election violence in December 2007, which reversed some of the economic gains. The average real GDP growth rate for 2004–6 was 5.6 percent. However, no marked employment gains were witnessed in the recent economic recovery period. After nearly two decades of reforms since 1990, sustainable growth and employment creation have remained elusive. Despite the abundant available labor, the economy has become more capital-intensive. The manufacturing sector's contribution to GDP has stagnated at about 10 percent.

The reforms and the associated obstacles to sustainable growth and employment creation have had a particular impact on women in Kenya, who contribute substantially to the national economy. Women's contribution is particularly large in the agricultural and informal business sectors, while men tend to dominate the formal sector. It is estimated that 85 percent of female-owned businesses are in the informal sector, and women make up 48 percent of micro, small, and medium enterprises (Amanda Ellis et al. 2007). However, the progress toward reform has not assuaged the existing gender inequalities that still constrain women's ability to effectively participate in and benefit from economic development. Notwithstanding the limited gender impact analysis, there is no doubt that the donor-driven reforms implemented since the early 1990s had disproportionately negative effects for women. The retrenchment programs cut down many jobs predominantly filled by women in the public sector's lower cadres (ILO 1999; Maureen Were and Jane Kiringai 2003). In the health sector, the introduction of cost sharing passed the burden of care from public healthcare providers to women, and the HIV/AIDS pandemic has exerted an immeasurable toll on women (Pamella A. Opiyo, Takashi Yamano, and T.S. Jayne 2008; United States Agency for International Development [USAID] 2002). These factors have increased women's workloads and financial burdens, with implications for women's productivity and time availability for economic activities (Were and Kiringai 2003; Opiyo, Yamano, and Jayne 2008).

Moreover, the reforms did not address some of the more critical limitations that curtail women's effective contribution, including their ability to own property, their insecure land-use rights, and their limited access to agricultural inputs and credit.⁴ Although women in Kenya supply 70 percent of labor in the agricultural sector, they hold only about 1 percent of registered land titles, with 5–6 percent of registered titles in joint names (World Bank 2004). In Kenya, land is vital both because of the predominance of agriculture and because of its use as collateral for business finance. Thus, their lack of land ownership restricts Kenyan women's access to formal financial services and hence hinders business growth. Other broader challenges such as poor rural infrastructure, environmental degradation, low agricultural productivity, and lack of access to markets and market information also affect gender equality and development.

These obstacles to women's contribution to the Kenyan economy reinforce gender disparities in the labor market and hinder gender equality, with implications for Kenya's economic development. For instance, it has been estimated that eliminating gender-based inequalities in education and access to agricultural inputs could result in a one-time increase of as much as 4.3 percent in GDP growth, followed by a sustained year-on-year increase of 2.0–3.5 percent in GDP growth (Ellis et al. 2007).

General employment structure and gender composition

In order to more fully explore the gender-based inequalities in Kenya's labor market, one must first understand the nature of the country's fragmented labor market in which the formal and informal sectors coexist. The formal sector consists of employment in both the private and public sectors. Informal-sector jobs tend to be labor intensive and have modest skill requirements, and are often characterized by lower wages and little or no job security.⁵ The sector covers a wide range of (small-scale) activities that are generally not registered with the registrar of companies.

Kenya has experienced a general decline in the growth of formal-sector employment since the early 1990s, particularly in the public sector, which declined from an annual average of 6.2 percent between 1964 and 1973 to -0.5 percent and -1.1 percent for, respectively, the 1990–2000 and 2001–5 periods. Public-sector reforms in the 1990s led to retrenchment and an employment freeze for some categories of professionals, such as teachers. Since many Kenyan women train as teachers, this increased the unemployment rate for women. In the private sector, the decline was attributed to various factors such as the collapse of private firms, retrenchment due to stiff competition from imports following trade liberalization, and the poor economic performance in the 1990s (Manda 2002). Figure 1 shows that growth in Kenya's formal-sector employment has largely followed the decline in economic growth, particularly since the mid-1980s.

Kenya's informal-sector employment has grown rapidly, particularly since the early 1990s, mainly as a counterweight to the formal sector's failure to create sufficient jobs. Most of the workers retrenched from the formal sector ended up in the informal sector. Informal-sector employment surged in the 1990s, with an estimated average growth of 26 percent during 1990–2000 and 8.8 percent during 2001–5.⁶ Table 1 shows total employment excluding employment in small-scale agriculture. Whereas the share of

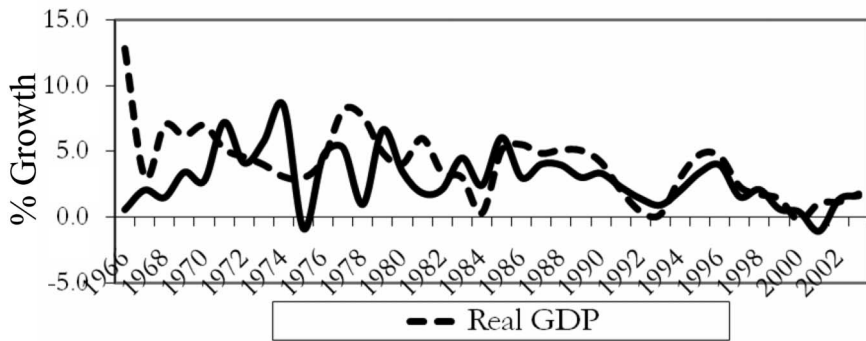


Figure 1 Growth in real GDP and formal employment, 1966–2003

Source: Authors' computations from various economic surveys.

Table 1 Total employment excluding small-scale agriculture

Year	Total ("000")	Formal wage employment (percent)	Self-employed & unpaid family workers (percent)	Informal sector (percent)	Total (percent)
1989	1,796.2	76.2	2.5	21.3	100
1990	2,395.0	58.8	2.0	39.3	100
1991	2,557.1	56.4	2.0	41.6	100
1992	2,753.2	53.1	2.0	44.9	100
1993	2,998.2	49.2	1.9	48.9	100
1994	3,356.2	44.8	1.4	53.4	100
1995	3,858.6	40.4	1.6	58.0	100
1996	4,325.8	37.4	1.5	61.1	100
1997	4,698.4	35.1	1.3	63.6	100
1998	5,083.2	32.8	1.2	66.0	100
1999	5,492.6	30.7	1.2	68.1	100
2000	5,911.6	32.1	1.1	70.2	100
2001	6,366.9	26.3	1.0	72.6	100
2002	6,851.6	24.8	1.0	74.2	100
2003	7,325.7	23.6	0.9	75.5	100
2004	7,800.1	22.6	0.9	76.5	100
2005	8,271.4	21.9	0.8	77.3	100

Source: Republic of Kenya (1993, 1998, 2003b, 2007).

Table 2 The SAM endogenous and exogenous accounts

<i>ACCOUNT</i>		<i>Endogenous</i>		<i>Exogenous</i>		<i>TOTAL</i>
Products	Intermediate consumption	Household consumption expenditures		Other final demands		Total demand for products
Factors	Value added	Factor income to households		Factor income from abroad		Total factor income receipts
Households	Imports, indirect taxes	Other factor payments		Non-factor income receipts		Total household incomes
Other accounts (Exogenous)	Total activity outputs	Total factor income payments		Total exogenous payments		Total exogenous receipts
TOTAL		Total household outlays				

Source: Adopted from Round (2003).

formal-wage employment declined from 76.2 percent in 1989 to 21.9 percent in 2005, the informal sector's share increased from 21.3 percent to 77.3 percent over the same period. The majority of Kenyan women are engaged in informal-sector activities since the flexible nature of work in the informal sector enables women to balance work and their additional domestic and reproductive roles, hence facilitating entry and exit. It should be noted however, that informal-sector jobs are precarious: they offer little or no security, have no statutory entitlements, and have a high risk of occupational accidents.

In terms of sectoral contribution to employment, the service sub-sector accounts for over 50 percent of Kenya's total formal wage employment. In the informal sector, in 2006, hotels, restaurants, and wholesale and retail trade accounted for 58.6 percent of informal-sector employment, followed by the manufacturing sector at 22 percent.

Formal-sector employment in Kenya is male dominated, with women constituting slightly less than a third of the workforce (see Figure 2). Furthermore, approximately 70 percent of these women are in the lower income bracket, receiving 8,000–25,000 Kenyan shillings (US \$103–321) per month. Education services, followed by agricultural and forestry industries, are the major female employers in the formal sector. The gender composition of employment by occupational categories has remained fairly static over time – on average, about 58 percent of women employed in the formal sector work in the services industry (community, social, and personal services). In general, women engage mostly in traditionally female-dominated activities, while men are relatively evenly distributed across sectors. Women are least represented in sectors such as building and construction, manufacturing, electricity, and water. Further analysis also shows that in all jobs, including the services industry, especially



Figure 2 Distribution of wage employment by gender
Source: Republic of Kenya (1983, 1988, 1993, 1998, 2003b, 2007).

in the public sector, men outnumber women at the top, whereas women occupy the lower cadres.

Women account for about 14 percent of Kenya's formal manufacturing employment, mainly in the export-oriented textile and garment industries under the Export Processing Zones and in the food and agro-processing industries (Were 2007). In sectors that predominantly employ women, such as the horticultural industry,⁷ women are concentrated in "flexible" and seasonal forms of labor that are associated with income and employment insecurities (Catherine Dolan and Kirsty Sutherland 2002). They are largely employed as unskilled or less-skilled casual labor with low pay, long working hours, and exposure to occupational health risks. Overall, there has been a remarkable improvement in Kenyan women's labor force participation rates, but their limited access to formal employment is reflected in higher unemployment rates and lower earnings compared to men's. Thus, trade has increased women's economic vulnerability (Ellis et al. 2007).

The employment structure reflects the traditional gender division of labor and the wider gender inequalities in Kenyan society. In the agricultural sector, for instance, women are predominantly engaged in small-scale and subsistence agricultural activities, while men dominate large-scale commercial farming. The commercialization of agriculture has greatly affected women's role in food provision, since land has been increasingly dedicated to producing cash crops and men control cash-crop earnings (Helen Ruth Aspaas 1998). As a result, more Kenyan women are pushed into informal-sector activities.⁸

Women find it difficult to obtain employment outside the informal sector because of their difficulty in accessing education and training. Although the gender gaps in Kenya's primary and secondary education enrollment have decreased, gender disparities persist in tertiary education, including technical training and university education (Institute of Economic Affairs 2008). In 2005–6, the gender parity index for primary school enrollment was 95 percent, but women constituted only about 37.5 percent of the enrollment in Kenya's universities. Moreover, there are considerable gender disparities in the selection of programs, with arts-based courses consistently having high female representation. In Kenya, the widely held notion that girls do not have an aptitude for sciences contributes to girls' low enrollment and poor performance in these subjects (Elizabeth Orchardson-Mazrui 2006). In some communities, girls are viewed as economic resources (for their bride price and child labor) and boys as economic investments. Consequently, some girls end up in early marriages. Education for girls, particularly in Kenya's rural areas, is also affected by gender roles that require them to perform domestic chores (Orchardson-Mazrui 2006). In rural area schools, the percentage of boys is higher than that of girls (Jacqueline Agesa and Richard U. Agesa 1999).

In general, limited access to relevant skills, negative cultural perceptions about women's aptitudes, dispositions, reproductive and domestic responsibilities, and gender inequalities in the acquisition of human capital constrain women's ability to effectively participate in productive activities and economic development, relegating them to low-skilled, low-paying informal-sector activities.⁹

① THE SOCIAL ACCOUNTING MODEL FRAMEWORK

The Social Accounting Matrix (SAM) is a particular representation of the macro and meso economic accounts of a socioeconomic system that captures the transactions and transfers between all economic agents in the system (Graham Pyatt and Jeffery I. Round 1985; Kenneth A. Reinert and David Roland-Holst 1997). The SAM captures an economic system's circular interdependence characteristics between production, the distribution of the value added to various factors, and income distribution among institutions, particularly for different socioeconomic household groups (Jacques Defourny and Erik Thorbecke 1984). It provides a framework for studying the link between the macro and the micro and can therefore shed some light on the impact of the different policy options on employment creation.¹⁰ The SAM has increasingly become a basis for simple modeling, more specifically through multiplier analysis, with the SAM multipliers reflecting the strength of the linkages among different sectors of an economy (Alka Parikh and Erik Thorbecke 1996).

The 2003 social accounting matrix for Kenya

The 2003 Kenya SAM includes the six standard accounts: the production account (activities and commodities), the factors of production (land, labor, and capital), institutions (households and enterprises), the government (including taxes), capital account (savings-investments), and the rest of the world.¹¹ The SAM distinguishes between "activities" (the entities that carry out production) and "commodities" (representing markets for goods and non-factor services). SAM flows are valued at producers' prices in the activity accounts and at market prices (including indirect commodity taxes and transactions costs) in the commodity accounts. Similarly, the SAM distinguishes between own-production, own-consumption output and marketed consumption because own-production, own-consumption output is valued at producer prices, while marketed consumption is valued at market prices. For the purposes of this paper, we disaggregated the government into a core government account and different tax collection accounts.

We further disaggregated the production account (activities and commodities) into twenty-seven sectors each as defined in national accounts.¹² Ideally, it would have been interesting to disaggregate the

agricultural sector into various sub-sectors or crops. However, the lack of corresponding disaggregated employment data for the different agricultural sectors meant that it was not possible to map the production account with the employment data (satellite account) at a disaggregated sector level. Consequently, we aggregated and retained the agricultural sector as a whole to ensure consistency in the aggregates.¹³

Under factors of production accounts, we did not disaggregate land and gross operating surplus. We disaggregated employee compensation into sixteen categories according to gender (male/female); region (rural/urban); sector (formal/informal); and skill level (skilled/unskilled). The labor force survey questionnaire did not explicitly capture skill levels, so we derived them using education qualifications.¹⁴ In the case of institutions account (households and enterprises), we did not disaggregate for enterprises, but we did disaggregate households according to region (rural/urban) and expenditure deciles (lower/upper).¹⁵ For the government account, we disaggregated taxes into commodity and direct and trade taxes, plus a core government account. We did not disaggregate for capital (savings-investments) and the rest of the world accounts.

The employment satellite account

The construction of an employment satellite account was mainly motivated by the need to analyze employment outcomes (in numbers) in a SAM framework, given a conventional SAM framework presents labor in monetary terms (Jorge Alarcon, Jan Van Heemst, and Nick de Jong 1997). Given the different nature of such an extension, the interpretation of multipliers therefore does not refer to average propensities but instead refers to employment ratios.

We developed the 2003 Kenya SAM employment satellite account using national accounts employment data, which we supplemented with national household survey data. The former provided national aggregates on employment (disaggregated into formal [public and private] and informal), from which we further disaggregated formal employment into various sectors and also by gender. We found that total employment in Kenya in 2003 was 7,325,700, of which 1,727,300 was formal employment and 5,598,400 was informal employment (representing about 76 percent of Kenya's total employment in 2003). Women accounted for 30 percent of total formal employment, predominantly in education, agriculture, and public administration sectors, while men were predominantly employed in agriculture, manufacturing, and education.

We then further disaggregated formal employment into various labor categories: gender (male/female), region (rural/urban), sector (formal/informal), and skill level (skilled/unskilled), using the respective (employment) ratios derived from the national labor force survey (Republic of

Kenya 1999). We included only individuals' earnings and income in the sample (as we did for the derivation of wage categories under compensation of employees). Unfortunately, only paid employees, representing about 25 percent of the total sample, reported their incomes; that is, no income was reported for the other employment categories such as employers, own-account workers, and unpaid family worker. Given that a large percentage of women in Kenya engage in unpaid activities, such as unpaid work, the proportion of women in the sample was small. Statistics from the labor force survey revealed that only 13.3 percent of females were paid employees (compared to 35.9 percent of males), while 62.7 percent were unpaid family workers (compared to 35.9 percent of males). To increase the sample size, the data set was merged with the *Welfare Monitoring Survey 1997* (Republic of Kenya 1997), which contained information on non-wage income.¹⁶ The resultant sample was 66 percent male and 34 percent female, which is a close approximation of the national employment statistics.

Highly disaggregated employment data for the informal sector were not available, so we derived ratios of the different labor categories from the labor force survey (Republic of Kenya 1999). For example, if male rural skilled labor in the informal sector accounted for 1 percent of total employment as per the labor force survey, then it would similarly account for 1 percent of total employment (at national level) in the national accounts. Thus, for consistency, the disaggregation ensured that the aggregate figure from national accounts was maintained.

The SAM model

In developing a simple multiplier model, the first step is to decide which accounts should be exogenous and which should be endogenous. It is customary to regard transactions in the government account, the capital account, and the rest of the world account as exogenous (Defourny and Thorbecke 1984; Jeffrey I. Round 2003). This is because government outlays are essentially policy determined, and the external sector is outside domestic control. Moreover, since the model has no dynamic features, investment is exogenously determined. The corporate enterprise outlays (for example, distributed profits and property incomes) are treated as either exogenously or endogenously determined. The endogenous accounts are therefore usually limited to production (activities and commodities), factors of production, and households (private institutions). Defining the endogenous transactions in this way helps focus on the relationship between two sets of agents (production activities and households) interacting through two sets of markets (factors and commodities).

- ② Table 3 shows the endogenous and exogenous accounts for this particular analysis. The production account, factors of production, and households

Table 3 Derivation of SAM multipliers matrix

ACCOUNT	Endogenous			Exogenous	TOTAL
	Products	Factors	Households		
Products	T_{11}		T_{13}	X_1	Y_1
Factors	T_{21}			X_2	Y_2
Households		T_{32}	T_{33}	X_3	Y_3
Other accounts (exogenous)	L_1	L_2	L_3		ΣL
TOTAL	Y_1	Y_2	Y_3	ΣX	

are endogenous, while other institutions, the government, savings-investment, and rest of the world are exogenous.

Derivation of SAM multipliers

Following Round (2003), the SAM multipliers are derived as follows. Like an input–output model, the matrix of endogenous transactions, represented in summary form by the matrix T , can be used to define a matrix A of column shares, by dividing elements in each column of T by its column total Y :

$$T = AY \quad (1)$$

where T and A have the partitioned structure shown in Table 4. The component sub-matrices of A show, for example, that A_{21} is the matrix of value-added shares of factor incomes generated by activities; A_{32} is the shares of factor incomes distributed across households; and A_{13} shows the pattern of expenditures by household group.

X and Y are, respectively, the vectors of exogenous injections and account totals, where, for example, X_I is the vector of final demand for goods and services other than those by households, and Y_I is the total supply of products. An increase in final demand is equated to an increase in production, which also implies an increase in intermediate inputs. The endogenous row accounts can then be written as a series of linear identities, and the system can be solved to give:

$$Y = AY + X \Rightarrow Y = (I - A)^{-1}X = M_a X \quad (2)$$

where M_a is the SAM multiplier of “accounting” multipliers. If A represents the pattern of outlays (that is, expenditure and distribution coefficients) and is assumed to be fixed, then M_a is fixed, and Equation (2) determines the equilibrium total outputs and incomes Y consistent with any set of injections X . While the input–output multipliers only capture inter-industry effects, SAM-based multipliers account not only for the direct and indirect

Table 4 Impact of exogenous injections on compensation of employees (percentages)

	Baseline	Agriculture	Manufacturing	Services	Agriculture and manufacturing	Agriculture, manufacturing, and services
Total increase in cost		14.1	9.5	8.5	10.0	6.9
Formal	63.4	42.2	49.6	61.2	44.3	52.0
Of which:	54.0	35.2	42.6	53.5	37.3	44.6
male						
female	9.4	7.0	7.1	7.8	7.0	7.4
Informal	36.6	57.8	50.4	38.8	55.7	48.0
Of which:	29.6	46.6	40.4	31.5	44.8	38.8
male						
female	7.0	11.2	10.0	7.3	10.9	9.2
Skilled	65.9	86.1	79.3	73.6	84.1	79.9
Of which:	55.4	70.7	66.1	63.0	69.4	67.0
male						
female	10.5	15.4	13.2	10.6	14.7	12.9
Unskilled	34.1	13.9	20.7	26.4	15.9	20.1
Of which:	28.1	11.1	16.8	21.9	12.7	16.4
male						
female	5.9	2.9	3.9	4.5	3.1	3.7

Source: Authors' computation.

Notes: This table shows the impact of injections on compensation of employees (COE), considering the different combinations of simulations compared to the baseline proportions. The results indicate that investing in agriculture results in highest increase in COE (14.1 percent), mainly informal (57.8 percent), benefiting skilled labor (86.1 percent) and mainly males (about 70.7 percent).

effects but also for the induced effects on factor and household incomes and activity outputs due to the (Keynesian) income–expenditure multipliers (Sherman Robinson 1989; Irma Adelman and Sherman Robinson 1989).

Multiplier analysis

In most cases, multiplier analysis aims to examine the nature of an income injection's multiplier effects in one part of an economic system on the functional and institutional distribution in general, and on the incomes of socioeconomic groups of households in particular (Graham Pyatt and Jeffery I. Round 1979; Round 2003). In this paper, we also use multiplier analysis to analyze the effect of external injections into the key growth-priority sectors on gendered employment outcomes.

A SAM framework assumes that excess final demand exists, so any increase in demand can be met by increasing supply. It also assumes that

there is excess production capacity, so any increase in output can be met by increasing the capacity of the existing factors of production.¹⁷ But intermediate consumption can mainly be increased through an exogenous injection (investment). The question therefore is what the likely impact of this additional investment in employee compensation and gendered employment outcomes would be. The starting point is to determine a target growth rate in output and then derive the level of exogenous investment that is required to achieve that growth in output. In this case, we used the actual growth in GDP at factor cost (valued at the cost of factors of production, excluding taxes) between 2003 and 2004 (in nominal terms) as the target growth rate, that is 13 percent nominal growth in GDP. The questions were: What was the level of exogenous injection required to achieve that target growth rate?¹⁸ What would be the resulting gendered impact of this injection on employee compensation (wage income), the distribution of factor incomes across households, and employment creation? Among the priority sectors, which sector or combination of sectors would yield the best gender outcomes in terms of compensating employees and employment? Given that $Y = (I-A)^{-1}X$ as shown above, then the level of injection (X^*) is given by $X^* = ((I-A)^{-1})^{-1}Y$. The resulting impact of the exogenous injection on endogenous accounts is then given by $(I-A)^{-1}X$, while the impact on exogenous accounts and employment is given by $L(I-A)^{-1}X$ and $E(I-A)^{-1}X$, where L and E are shares of exogenous accounts and employment categories respectively; that is, L is as defined in Table 4. ③

Policy simulations

The government of Kenya's blueprint for economic recovery (Republic of Kenya 2003a) recognizes agriculture, industry, and services as the major sources of growth. The Kenyan government envisages that investing in these sectors would not only spur growth but also generate gainful employment. To carry out simulations using multiplier analysis, we chose the sub-sectors with the most backward and forward linkages because they would generate greater synergies and consequently higher growth in other sectors as well. We selected meat, dairy, grain milling, beverages, tobacco, textiles, and footwear for manufacturing, and trade, hotels, restaurants, transport, communication, and financial services for services. We opted for five different types of simulations targeting different combinations of sectors: (1) agriculture, (2) manufacturing, (3) private services, (4) agriculture and manufacturing, and (5) agriculture, manufacturing, and private services. The different combinations of simulations facilitate an assessment of the individual, broad, sector-specific effects of exogenous injections compared to a combination of sectors, as has been the practice in the Kenyan policy framework. The sectors have different structures (such as the male-female employment ratio) and levels of formality (some are more

informal than others), among other differences, and are therefore expected to contribute differently to growth and have different impacts on value added and employment generation.

From the simulations, it is expected that more jobs will be created in the informal sector than the formal sector, reflecting trends in the employment structure. In addition, female job creation is expected to be more predominant in the informal sector. We discuss the simulation results of the impact of the exogenous injections on compensation of employees, distribution of factor incomes across households, and employment creation below.

SIMULATION RESULTS

Impact of exogenous injections on compensation of employees

The analysis of the injections' impact on employee compensation reveals that targeting Kenya's agricultural sector results in the highest increase in employee compensation (14.1 percent compared to an 8.5 percent increase when the injection is put into services, see Table 5). This is mainly because agriculture is more labor-intensive than private services, which are more capital intensive. Kenya's agriculture sector also has low labor ratios, which have mainly been attributed to the sector's prevailing low wages, as well as the dominance of self-employment and unpaid family workers (Republic of Kenya 1996). The 2003 SAM shows that while labor costs accounted for about 47 percent of total production costs in agriculture, they only accounted for 37 percent of production costs in private services. Private services have become more capital intensive over time, with increased automation, especially in financial services, and rapid growth in the information and communication technologies.

In agriculture, the increase in labor costs is higher in Kenya's informal sector, which is anticipated because employment trends reveal that employment creation has largely occurred in the informal sector. Further sectoral analysis shows that private services accounted for the highest proportion of the increase in formal-sector labor costs, accounting for 61 percent compared to 50 percent in manufacturing and 42 percent in agriculture. This is expected given that financial services, transport, communication, hotels, and restaurants are largely formal, while agriculture is largely informal and characterized by small-holder subsistence farming and unpaid family labor. In terms of gender, the private services sector is likely to employ high-skilled labor, which largely benefits men. For instance, in Kenya's formal services sector, men accounted for 54 percent of the total increase in compensation of employees compared to only 8

Table 5 Impact of exogenous injections on distribution of wage incomes across households (percentages)

	Baseline	Agriculture	Manufacturing	Services	Agriculture and manufacturing	Agriculture, manufacturing, and services
Total increase		26.4	18.4	16.2	18.9	13.1
Rural households	43.6	14.8	7.9	5.4	9.8	5.8
Of which: rural lower decile	16.1	6.0	3.2	2.2	4.0	2.4
rural upper decile	27.6	8.8	4.7	3.2	5.8	3.4
Urban households	56.4	11.6	10.5	10.8	9.0	7.3
Of which: urban lower decile ^a	1.4	0.3	0.3	0.3	0.3	0.2
urban upper decile	55.0	11.3	10.2	10.5	8.8	7.1

Source: Authors' computation.

Notes: ^aThe low percentages for urban lower decile could be attributed to a sampling bias. This category accounted for a very small proportion of the total population.

This table shows the impact of injections on distribution of wage incomes across households, considering the different combinations of simulations compared to the baseline proportions. The results indicate that investing in agriculture results in highest increase in incomes (26.4 percent), mainly benefiting rural households (14.8 percent), upper decile (8.8 percent).

percent for women. In general, the increase in labor costs in the formal sector disproportionately benefits men.

In terms of skill, skilled labor accounted for over 70 percent of the increase in labor costs in all sectors. This finding supports evidence of earning disparities between skilled and unskilled workers, with higher returns to education (see Were 2007). Overall, men account for a larger proportion of trained and skilled workers than women, as evidenced by the higher proportion of men in Kenya's higher education institutions. In the sample used, about 65.9 percent of the labor force was skilled, of which 55 percent were men and 11 percent were women. The analysis reveals that the increase in the labor costs was higher for skilled labor than unskilled, and consequently higher for men. At the sector level, investing in agriculture results in an 86 percent increase in the cost of skilled labor compared to only 14 percent for unskilled labor. The same trend applies to the other sectors. The increase from the baseline is higher for men than for women, which implies that male wages would increase more than female wages. This can be attributed to the existing socioeconomic structure and the gender inequalities in education and human capital development that are reflected in the labor market.

Impact of exogenous injections on distribution of wage income across households

The increase in compensation of employees is further distributed across households in the form of wage income. This analysis reveals that investing in Kenya's agriculture results in the highest increase in wage incomes for households, 26 percent, compared to 19 percent for a combination of agriculture and manufacturing and 18 percent for manufacturing alone (Table 6). The increase benefits rural households more than urban households and households that are in upper deciles more than lower deciles. This is mainly because agriculture is predominantly a rural activity in Kenya, with about 70 percent of the population deriving their livelihood from agriculture. As indicated earlier, the majority of poor women are based in rural areas. Thus, efforts to reduce poverty and raise rural incomes must take into consideration the role of agriculture.

Investing in services results in the lowest wage-income increase for households, averaging about 6.2 percent and mainly benefiting urban households. Services have weaker linkages with households through wage income compared to agriculture mainly because services are more capital intensive, implying that they use less labor, which is supplied by households. Investing in manufacturing also benefits the urban population more than the rural population because the industry sector is predominantly urban in Kenya.

Due to data limitations, the income or wage analysis could not incorporate gender characteristics within the household. Nonetheless, it can be inferred, for instance, that women are likely to benefit from

Table 6 Impact of exogenous injections on gendered employment creation

	Baseline	Agriculture	Manufacturing	Services	Agriculture and manufacturing	Agriculture, manufacturing, and services
Total employment creation		14.1	17.0	11.6	12.4	8.5
Formal	23.6	20.4	14.2	15.6	17.6	17.5
Of which:	17.2	14.5	10.9	11.7	12.9	12.9
male						
female	6.4	5.9	3.3	3.9	4.8	4.6
Informal	76.4	79.6	85.8	84.4	82.4	82.5
Of which:	43.2	45.5	45.0	44.6	45.3	44.9
male						
female	33.2	34.1	40.8	39.8	37.1	37.7
Skilled	37.6	28.9	32.0	35.9	30.1	32.7
Of which:	25.9	19.5	20.7	24.3	19.9	22.0
male						
female	11.7	9.4	11.2	11.6	10.1	10.7
Unskilled	62.4	71.1	68.0	64.1	69.9	67.3
Of which:	34.5	40.5	35.1	31.9	38.3	35.8
male						
female	27.9	30.6	32.9	32.2	31.7	31.5

Source: Authors' computation.

Notes: This table shows the impact of injections on gendered employment creation, considering the different combinations of simulations compared to the baseline proportions. The results indicate that investing in manufacturing results in highest job creation (17 percent increase), mainly informal (85.8 percent), unskilled labor (68 percent), mainly males (about 35.1 percent). The proportion of females is higher in informal and unskilled labor compared to the formal skilled categories.

investing in agriculture since the majority of women are engaged in the agricultural sector. However, for such investments to fully benefit women, policy-makers have to consider the gender relations in the sector. For example, as mentioned previously, women are largely engaged in subsistence farming, and they have limited land ownership. Thus focusing on subsistence activities would greatly benefit women, as compared to activities that involve landowners, such as large-scale farming.

Impact of exogenous injections on gendered employment creation

In contrast to employee compensation, investing in manufacturing results in the highest increase in employment, generating about 17 percent additional jobs, compared to 14 percent for agriculture and 12 percent for services (Table 7). However, the jobs created are largely informal, casual, precarious, and low-paying. Investing in the manufacturing sector accounts for the highest increase in informal-sector jobs (85.8 percent compared to 79.6 percent in the case of agriculture, for example), which

disproportionately affects women, who account for a larger proportion of informal-sector employment.

Unskilled labor accounts for the highest increase in employment, with agriculture accounting for the highest increase (71.1 percent, compared to 68 percent and 64.1 percent for manufacturing and services respectively). Yet, as previous analysis has shown, unskilled labor accounts for less than 30 percent of labor costs. This evidence supports the concern over the rising trends in income and employment insecurities. The proportion of employment for skilled labor declines for both men and women (from the baseline), while women benefit slightly more from the increase in unskilled labor, in part because their lower level of skills make them cheaper. The manufacturing sector accounts for a slightly higher proportion of increase in female employment (32.9 percent compared to 32.2 percent for services and 30.6 percent for agriculture). Though women still constitute a small proportion of manufacturing-sector employment, the numbers are gradually rising, especially in casual employment (Were 2007).

Overall, it is unlikely that investment opportunities will automatically generate equal employment opportunities for men and women unless policies are put in place to address the existing gender inequalities in the labor market and economic structure.

CONCLUSION AND POLICY INSIGHTS

This paper analyzes the impact of Kenya's investment in key sectoral priorities – agriculture, manufacturing, and services – on gendered employment outcomes. The paper has used the SAM multiplier analysis to analyze the employment and income effects in Kenya by gender, region (rural/urban), skill level, and sector (formal/informal). Using a 2003 SAM for Kenya, we selected the actual growth rate in GDP between 2003 and 2004 as the target growth rate to carry out policy simulations on a combination of sectors with the most linkages within the economy. These included agriculture, manufacturing (meat, dairy, grain milling, beverages, tobacco, textiles, and footwear), and services (trade, hotels, restaurants, transport, communications, and financial services).

Simulation results revealed that investing in Kenya's agriculture resulted in the highest increases in compensation of employees, which benefited rural households more than urban households. A gender analysis of increases in compensation of employees also showed that the proportion of women was higher in the informal sector than in the formal sector. Since women are largely engaged in agricultural activities, it can be inferred that, if well designed, investing in agriculture could help boost the incomes of rural women.

On the other hand, investing in the manufacturing sector resulted in the highest employment increase, with 86 percent of that increase being in the

informal sector. Thus, although women benefited relatively more from the employment creation in the manufacturing sector, they had to take precarious, informal, or casual jobs with lower wages. Unskilled labor accounted for the highest proportion of the increase in employment creation; yet, it accounted for less than 30 percent of the increase in compensation of employees. Since the majority of women are unskilled, the increase in wage income disproportionately benefited men. Thus, gender disparities in the labor market are a reflection of the gender inequalities in human capital development and economic structure, which ensure that women remain unskilled and work in the informal sector.

Overall, the results of this analysis point to a need for rethinking the Kenyan policy agenda of growth and employment policies by considering not only the number of jobs created but also the quality of jobs. Although the manufacturing sector holds great employment potential for women through the export-based processing industries, the precariousness of most of the jobs created is of concern and raises the need for appropriate policy actions. Also of policy concern is the need to address the constraints that inhibit or limit women's effective participation in productive sectors in the labor market and economic development. These constraints include women's limited access to higher education and training opportunities that would enable them to acquire skills for higher-skilled jobs with higher earnings. Overall, policies aimed at promoting growth and employment should be gender aware; otherwise, there is no guarantee that they will result in equal opportunities for men and women.

However, a more detailed sectoral analysis of the gendered employment outcomes was limited by the lack of highly disaggregated employment data, particularly for the agricultural sector. Also, the lack of time use data limited the development and use of a gendered SAM, as documented in Marzia Fontana and Peter Wobst (2001). This is therefore an area for further research. It should also be noted that SAM multipliers provide a first-cut estimate of the effects of a policy or external shock, which only rely on the SAM structure. Further analysis would require the development of a computable general equilibrium model that interconnects the general equilibrium effects of different policy options.

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NOTES

¹ Empirical evidence indicates that there may be an unemployment-growth trade-off in the long run (Robert J. Gordon 1995; Martin Zagler 2000; Patrick Toche 2001). If economic growth is driven by structural change, which could entail a shift toward capital-intensive production as the Kenyan experience demonstrates, then a social cost of unemployment is expected.

² For instance, an analysis based on the Kenyan Urban Labour Force Survey in 1986 revealed that when combining domestic chores with economic activities, women of working age worked 50.9 hours per week, compared to only 33.2 hours for men (Kabubo-Mariara 2003).

³ Conventionally, the labor sector in the SAM is captured in monetary values, but an employment satellite account presents employment data in numbers and links it with the production account.

⁴ For details, see Ellis et al. (2007).

⁵ The contrast between formal and informal sectors is no longer as straightforward as it seemed in the 1970s and 1980s, since the formal sector (particularly the private sector) also utilizes informal labor arrangements such as reliance on casual or high turnover workers. “Employment in the informal sector” and “informal employment” are concepts that are now recognized as different aspects of the normalization of employment (see Ralf Hussmanns 2005).

⁶ It is difficult to get precise estimates of the size of the informal sector, given the diversity. The numbers reported for the latter years are projections as given by Kenya National Bureau of Statistics annually. Additionally, definitions and coverage of the informal sector have changed over time.

⁷ Women constitute between 65 and 75 percent of workers in the cut-flower sector (Ellis et al. 2007).

⁸ Intra household patterns are characterized by “separate purses” whereby men and women maintain a certain level of independent control over their earnings and resources while adhering to gender-specific expenditure patterns (Aspaas 1998).

⁹ Outdated labor laws have also affected women’s ability to fully benefit from employment opportunities.

¹⁰ The absence of appropriate, gender-related macroeconomic analytical tools has penalized quantitative analyses of gender issues, especially for Kenya (Anushree Sinha and Haider Khan 2008). Notwithstanding the restrictive assumption of fixed prices, the incorporation of gender in a SAM-based multiplier models facilitates analyses of the impact of various macro policies by gender, thus making the effects more visible to policy-makers.

¹¹ For details on SAM construction, see Jane Kiringai et al. (2007).

- ¹² These are agriculture, fishing, forestry, mining and quarrying, meat and dairy processing, milling, bakery and confectionary, beverages and tobacco, other food manufactures, textiles and footwear, wood and paper, printing and publishing, petroleum, chemicals, metals and machinery, non-metallic manufactures, other manufactures, electricity and water, building and construction, trade, hotels and restaurants, transport and communication, financial services, other services, education, health, and public administration.

Note that even though tourism is an important source of growth for the Kenyan economy, the sector is not explicitly captured in national accounts. It is captured within the service sectors, which mainly include hotels and restaurants, trade, and transport and communication. Therefore, the tourism sector is similarly captured through these service sectors in the 2003 SAM for Kenya.

A more highly disaggregated micro SAM is available with fifty activities and fifty commodities (twenty-two agriculture, eighteen industry, and ten services), three transaction costs (domestic, import, and export), twelve labor categories (gender and skill level), twenty household categories (region and per capita expenditure), capital (region and formal/informal), enterprises (region and formal/informal), and three taxes (direct, commodity and trade taxes).

- ¹³ The problem of data constraints in SAM frameworks is not uncommon given the detailed data requirements and the fact that relevant data has to be extracted from various available sources (for example, see Parikh and Thorbecke [1996]; Sinha and Khan [2008]).

- ¹⁴ The unskilled included those with no education and those with only nursery and primary education but with no vocational/professional training. The skilled included those (1) who did not have a formal education, but did have trade tests, or who had nursery and primary education, trade tests, and an ordinary diploma; (2) who had a secondary education, with/without trade tests, and an ordinary diploma; (3) who had a secondary education, a higher national diploma, and professional training, such as the Certified Public Accountants or Certified Public Secretaries; (4) who had a bachelor's degree, with/without an ordinary diploma; and (5) who were postgraduates, with/without additional professional training.

- ¹⁵ It was not possible to disaggregate households by gender because of complications related to the definition of gender and household head in the household survey. Eighty-four percent of the respondents were in rural areas, which could have an impact on the definition of male- or female-headed households. For instance, in some households, the male head resided in an urban area and transferred income to a rural home headed by his wife. Such households were probably termed female-headed, thus classifying households by gender could result in biased estimates that overestimated the proportion of female-headed households.

- ¹⁶ Additional data were obtained only when the same households could be identified.

- ¹⁷ This assumption makes sense for the Kenyan economy given the high unemployment rate and the high incremental capital output ratio, which implies that output can be increased through increasing production efficiency.

- ¹⁸ As previously stated, several assumptions hold in multiplier analysis, such as excess production capacity, which implies that increasing production in the productive sectors will not have an impact on prices.

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