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THE EFFECTS OF GROWTH ON WOMEN'S EMPLOYMENT IN PAKISTAN

Hadia Majid and Karin Astrid Siegmann

ABSTRACT

This article seeks to clarify the effect of growth on gender equality for the case of Pakistan, a country that has seen periods of high growth alongside the persistence of stark gender inequalities. The paper addresses this aim by estimating gendered sectoral employment elasticities of growth for the period 1984–2017 and investigates their drivers. It finds that the secular trend toward productivity-driven growth since the turn of the millennium has lowered the responsiveness of men's employment to growth impulses in particular. For women, factors related to Pakistan's gender order are more relevant. Greater gender parity in education enables women to benefit from growth in the form of better employment access. The reverse is the case for improvements in relative women's life expectancy, understood as indicative of their social status. The paper interprets the related effect as a reduction in the precarity of women's employment associated with improved status.

KEYWORDS

Economic growth, employment, gender, growth elasticity of employment, inclusive growth, Pakistan

JEL Codes: B54, J21, O47

HIGHLIGHTS

- Employment dividends of growth are realized in a highly gender-differentiated way.
- Pakistan's gender order mediates women's volatile employment responses to growth.
- We use excess women's mortality as an indicator for Pakistan's gender order.
- Women workers bear the brunt of recessions through the loss and precarity of jobs.
- Education is especially relevant in reducing women's employment precarity.

INTRODUCTION

Recent years have witnessed increased international concern with the inclusiveness of economic growth. With Luiz de Mello and Mark A. Dutz, we understand inclusive growth as growth in which "benefits of increased material prosperity are . . . shared evenly among the various social groups" (2012: 9). This concern is echoed in Sustainable Development Goal 8, which demands the promotion of "sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all" (United Nations 2015).

In this regard, the study of women's participation in the growth process has received increasing attention. This is reflected in the budding body of literature tracking the link between economic growth and various indicators of gender equality (see Kabeer and Natali [2013] for an overview). Starting from the finding that macroeconomic dynamics and policies are not gender-neutral (Seguino 2020), this body of research provides considerable empirical evidence across countries indicating that gender equality, especially in education and employment, contributes to economic growth. In contrast, the evidence supporting the reverse, that is, that economic growth influences gender equality is not as robust or consistent (Kabeer 2016).

The impact of growth on gender equality varies depending on the socioeconomic context as well as the specific features of the gender order (Kabeer 1996). Naila Kabeer (2016) therefore underscores the need for more in-depth country case studies to illuminate possible pathways for empowering patterns of macroeconomic development. We respond to this need by conducting an analysis of the gender inclusiveness of Pakistan's economic growth performance in terms of employment opportunities for women versus men.

Our motivation for picking Pakistan stems from its previous characterization as a country that has witnessed "growth without development" (Easterly 2001) and lacked inclusive growth (Amjad and Burki 2015). More specifically, the country has seen periods of high gross domestic product (GDP) growth alongside continued stark gender inequalities. Rooted in patriarchal cultures that regard women as inferior, women's marginalization is expressed in women's poorer health, education, and political representation, among others. In the same vein, women lack access to paid employment as well as to decent jobs (Mahbub ul Haq Research Centre 2016). It comes as no surprise then that Pakistan's indicators of gender-based inequality rank at the bottom of the international comparison (UNDP 2018). In this context, a better understanding of the nexus between economic growth and women's employment is crucial to inform the design of policies that will lead to greater gender justice in Pakistan.

Our emphasis on employment stems from Anderson and Braunstein's (2013: 276) recognition that "having a paying job is the way the vast majority of us access many of growth's benefits," as well as from the importance that has been attached to women's access to paid jobs in weakening restrictive gender stereotypes and enhancing women's overall role in society (Seguino 2007). And while it is worth bearing in mind that not all jobs are (equally) empowering, women's paid work has been found to have positive indirect effects on other indicators, including those related to women's general well-being and their rights (Kabeer and Natali 2013).

Yet, although accessing paid employment is important, it is not sufficient for women's empowerment. This is because the take up of mere "survival jobs" that leads to an increase in aggregate employment, may be a response to crises. Besides, the quality of jobs and therefore their empowering potential varies. Typically, more regular, formal forms of employment as commonly found in sectors outside of agriculture have greater potential for women's empowerment. Hence, we consider the responsiveness of women versus men's employment in three sectors – agriculture, industry, and services.[1]

In this paper, we therefore ask the following questions:

1) Has macroeconomic growth been associated with different sectoral employment elasticities for women and men in Pakistan?
2) If yes, how can these differences be explained?

In the present analysis, the growth responsiveness of employment has been measured by the growth elasticity of employment, that is, the rate at which employment changes when GDP increases by one percentage point. In the context of pervasive gender job segregation in which "there is no guarantee that job creation will equitably benefit women and men," Seguino and Were (2014: i34) point out that the growth elasticity of employment offers a useful indicator for women's relative access to employment.

Existing studies that calculate elasticities for Pakistan address the country cursorily as part of cross-country comparisons (Kapsos 2005; Heintz 2006; Islam 2019). Others do not distinguish employment responses by sector or – most importantly – by gender (Zaman, Shah, and Ahmad 2012; Siddique et al. 2016). Against this backdrop, the contribution of this article to the literature on gender and macroeconomics then is twofold: First, we address the inconsistent evidence on ways in which economic growth influences gender equality through a detailed analysis of the case of Pakistan. Second, we broaden and deepen the existing evidence on the nexus between growth and gendered employment in Pakistan through the estimation and econometric analysis of sectoral growth elasticities of gendered employment in Pakistan for the period 1984 to 2017.

We address our research questions in two steps. First, we calculate and compare women's and men's employment point elasticities of growth for the period between 1984 and 2017 for agriculture, industry, and services. Subsequently, we investigate the drivers of the resulting gendered elasticities through regression-based analysis. Here, we examine the link between gendered sectoral elasticities and proxies for gender inequality as well as macroeconomic indicators that the literature associates with women's employment responses to growth.

Our elasticity estimates show not only differences in employment elasticities across sectors but also across the genders, with agriculture seeing the largest differences between women's and men's employment elasticities. Reflecting Steven Kapsos' (2005) earlier analysis, we too find that women's employment responds relatively more elastically to GDP performance both in periods of boom and recession. We interpret this higher responsiveness as a reflection of women's status as "secondary workers" within Pakistan's labor force.

The regression results confirm some findings of earlier studies regarding the role of export orientation and wage inequality for women's growth elasticities of employment. The inclusion of predictors related to different dimensions of gender inequality in Pakistan brings to the fore their direct and indirect influence on gendered growth responsiveness, supporting Kabeer's (2016) argument about the mediating role of the gender order for gendered responses to growth dynamics.

GENDER ORDER AND GROWTH STRATEGIES IN PAKISTAN

Gender order and gender inequality in Pakistan

Norms in Pakistan generally typify "classic patriarchy" with households organized in a patriarchal extended family structure (Kandiyoti 1988: 278–81). Here, the senior man has authority over other household members, and girls are commonly "given away in marriage at a very young age into households headed by their husband's father. There, they are subordinate not only to all the men but also to the more senior women" (Kandiyoti 1988: 278). Women's power in the household however, changes with their position in the lifecycle. The deprivation and hardship they experience as young brides is eventually superseded by the authority they will have over their own daughters-in-law. Additionally, class and socioeconomic position mediate the social status of women in Pakistan.

The institution of *purdah*, denoting the spatial segregation of women's and men's movements in the name of family honor, is a key factor that further reinforces women's subordination and their economic dependence on men (Kandiyoti 1988; Grünenfelder and Siegmann 2016). This is largely because the status marker of *purdah* usually leads women to forego

Table 1 Employment by main sector and gender, 2017 (% of total gendered employment)

	Women	Men
Agriculture	67.19	30.43
Industry	16.25	26.97
Services	16.56	42.60
Total	100	100

Source: PBS (2018: 26).

economic opportunities in favor of less attractive alternatives that are perceived as in line with their respectable domestic roles (Kandiyoti 1988).

Women's marginalization and their adherence to the institution of *purdah* mean that they have poorer access to food, adequate healthcare, and education relative to men (Mahbub ul Haq Research Centre 2016). In education, the gender order translates into a situation in which boys' education is more likely to be seen as an investment in future economic security. Girls, in contrast, drop out of school because they are required to take on domestic responsibilities (Mahbub ul Haq Research Centre 2016).

There are also stark differences between men's and women's labor force participation (LFP) rates with women's LFP standing at slightly less than a third of men's in 2017 (Pakistan Bureau of Statistics [PBS] 2018). While poorer average educational achievement plays a role in this, a primary reason appears to be women's mobility restrictions. For instance, half of ever-married women consider mobility restrictions as the primary reason for not being employed, with the number rising to more than 60 percent in the case of never-married women (Majid 2016).

The "male breadwinner bias" in Pakistan – the normative assumption that men's gender role as their families' breadwinners entitles them to priority access to employment and other resources, especially in periods of crises (Elson and Çagatay 2000: 1355) – leads to a perception of women as "secondary workers" (Siegmann and Majid 2014) and legitimizes reproductive work as women's main responsibility (Grünenfelder and Siegmann 2016: 19). This is reflected in women's higher reproductive burden. In comparison to men, women spend five additional hours per day doing housework even when also doing paid work (Organisation for Economic Co-operation and Development [OECD] 2011: 18), leaving little leisure time and disincentivizing LFP outside the homestead. As a result, women's employment is highly concentrated in agricultural employment (Table 1).

Those women who do manage to secure paid employment face wage-based discrimination. A significant gender wage gap persists across
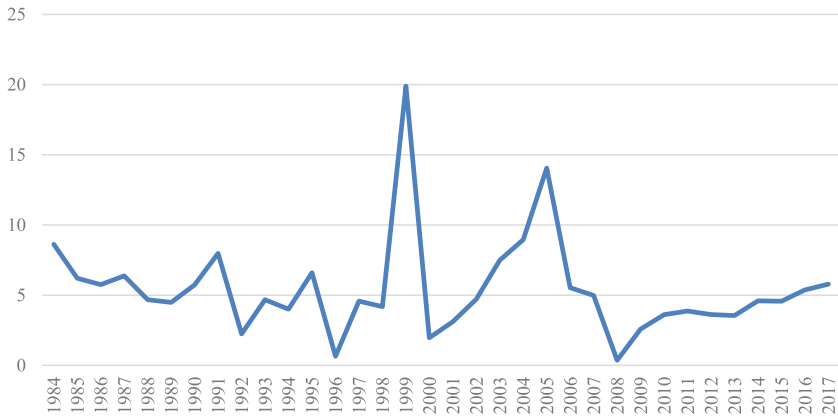
Figure 1 Aggregate GDP growth, 1984–2017 (%).
Source: SBP (various years).

education levels and even for the same work (Mahbub ul Haq Research Centre 2016; Majid 2016). These factors, along with harassment and a hostile work environment, act as powerful deterrents to entering the labor force even for those women who face lower mobility restrictions.

Growth trends and strategies

The disadvantage that women in Pakistan face in the labor market has positioned them differently from men with regard to the macroeconomic trends and policies.

At 5.45 percent, the overall average growth in aggregate GDP seen in the country between 1984 and 2017 was robust (Figure 1). Similarly, as reflected in Figures 4–6 below, the average sectoral growth rates were in excess of 5 percent, with services seeing the highest growth rates as a result of privatization in power generation, banking and telecommunication under Pervez Musharraf's military rule between 2001 and 2008.

Moreover, we observe considerable swings in both the overall and sectoral growth patterns for the country. In agriculture, these dynamics reflect the significance of cotton cultivation in Pakistan's economy, a significance that has earned the crop the label of the economy's "life line" (Government of Pakistan 2020: 16). Behind wheat, cotton occupies the largest amount of sown area and contributed the largest share in agricultural value added in 2018 (Government of Pakistan 2020). Besides, cotton-based manufacturing accounts for more than half of the country's exports with the textile sector contributing nearly one-fourth of industrial value added and employing about 40 percent of the industrial labor force (Government of Pakistan 2020: 38). In the 1980s, the robust agricultural growth was sustained,

among others, by the introduction of new cotton varieties (Khan 1999). Between 1999 and 2001, a period of extensive drought lowered output, while in recent years, shocks related to climate change and pest attacks have taken a toll on agriculture's performance.

While the market-oriented reforms under General Zia-ul Haq's military rule (1978–88) stimulated strong industrial growth, toward the end of the 1980s, Pakistan observed a period of deindustrialization resulting from structural adjustment policies. Contrary to what was expected, the liberalization of the economy under Nawaz Sharif's rule in the early 1990s did not increase industrial exports. Rather, growth slowed down at the end of the same decade, something that Parvez Hasan (2015) explains by the exchange rate's overvaluation. The spurt in GDP growth between 2001 and 2004 reflects both the liberalization of textiles trade under the World Trade Organization's (WTO's) Agreement on Textiles and Clothing (ATC) and a monetary stimulus to fund expenditure in consumer durables under Pervez Musharraf's government (2001–08; Amjad 2015). The large dips in industrial growth in 2005 and 2008 may be best explained by considering both the international food grain, oil, and financial crises as well as the domestic electricity crisis and the law-and-order situation.

The few existing studies of the growth responsiveness of employment in Pakistan have revealed a relatively low reactivity in international comparison (Heintz 2006).

Kapsos' (2005) estimates of growth elasticities of employment for Pakistan displayed in Figure 2 highlight three points: First, elasticities exhibit a curvilinear time trend between 1991 and 2003, with the highest elasticity being observed for the period of democratic rule under prime ministers Benazir Bhutto and Nawaz Sharif between 1995–99. Second, during the 1991–2003 period, the highest employment elasticities are observed for agriculture. Finally, employment elasticities are higher for women relative to men, leading to a narrowing of gender gaps in employment during the three periods of positive growth considered. Kapsos (2005) offers a range of explanations for women's relatively high elasticities: They may point to a process of catching up of women's employment shares or to greater relative responsiveness of women's employment to both economic growth and contraction. Furthermore, women's high elasticities could also be rooted in gender-based occupational segregation whereby women tend to work in more labor-intensive sectors than men. For the case of South Asia as a region, he highlights the substantially larger initial gender gap in LFP and women's subsequent catching-up as a cause for the observed gender difference in employment intensities of growth.

We now turn to deepening these hypotheses by constructing a conceptual framework for the interpretation of gendered employment responses to growth.
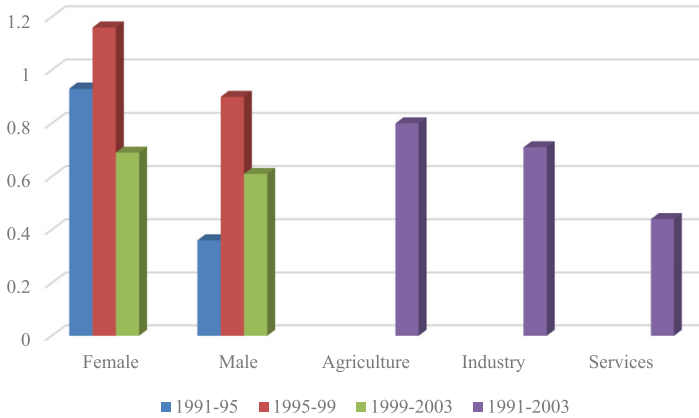
Figure 2 Employment elasticities in Pakistan by gender and major industry, 1991–2003.
Source: Kapsos (2005).

BUILDING A FRAMEWORK OF ANALYSIS: IS GROWTH GOOD FOR WOMEN'S EMPLOYMENT?

Conventional and feminist economics theory have understood and evaluated growth elasticities of employment in oftentimes opposing fashions. Here, we review both and use them to build a conceptual framework for our empirical analysis.

Orthodox as well as heterodox conventional economic theories tend to evaluate positive growth elasticities of employment as a social good. Arthur M. Okun (1962) found an empirical regularity that suggests that a 3 percent increase in growth results from each percentage point decline in the unemployment rate. This so-called "Okun's law" implies that low levels of labor utilization depress productivity (Okun 1962: 6). Okun therefore interprets increases in employment – indicating higher levels of labor utilization – as beneficial for output growth.

The heterodox economics tradition, too, has established a positive relationship between growth and employment. Yet, it has stipulated a reverse causality between employment and economic growth. According to the Kaldor-Verdoorn effect, in the presence of an elastic labor supply, an expansion of the market enables the specialization and learning by doing on the part of labor. This results in an endogenous increase in labor productivity through output growth (Tejani 2016).

Yet, both Okun's law and the Kaldor-Verdoorn effect consider growth's interaction with employment to be homogenous across various groups of workers. A range of contributions to feminist economics has provided a more nuanced interpretation of growth elasticities of employment from a

gender perspective. The first and basic step is to do away with the default assumption that the macroeconomy operates in a gender-neutral way. Still, while some conclude that economic growth happens at the expense of women's position in the labor market, others assume that "good times are good for women" (Dollar and Gatti 1999: 21).

Nancy Forsythe, Roberto Korzeniewicz, and Valerie Durrant (2000) cover these divergent perspectives when distinguishing three types of approaches to the relationship between gender inequalities and economic growth, namely, modernization/neoclassical perspectives, Boserup's thesis, and critical feminist approaches, respectively. All three have direct implications for the understanding and evaluation of gendered growth elasticities of employment.

Based on Gary S. Becker's (1971) *The Economics of Discrimination*, among others, the modernization/neoclassical approach assumes economic growth to undermine gender inequalities, for example, in employment and wages, that result from discriminatory practices. According to Becker (1971: 15), a "taste for discrimination" entails additional costs, such as the payment of higher wages to favored groups, for those who engage in such practices. Non-discriminating employers benefit from their competitors' practices as they have the opportunity to employ discriminated groups at relatively lower wages (Forsythe, Korzeniewicz, and Durrant 2000: 574). From this perspective, positive economic growth rates would thus be accompanied by a gradual convergence of women's and men's growth elasticities of employment.

Ester Boserup (1970) argues that there is a curvilinear relationship between economic growth and women's status that translates into changes in women's employment.[2] According to her, early stages of development are characterized by a feminization of agricultural employment. This is a result of the preferential recruitment of men workers in urban manufacturing. Such organization of labor markets is shaped by discriminatory practices that are embedded within prevailing institutional arrangements like colonial rule. With continued development, as agriculture declines in significance in overall employment, women's participation in employment too falls. Ultimately though, urbanization, associated with women's greater access to education leads to a change in gender norms, enables women's labor force participation and employment to rise again. Boserup's model suggests, among others, that attention needs to be paid to the economy's sectoral structure as well as to the role of education as a factor influencing the responsiveness of women's employment to growth.

Critical feminist economists, in contrast, have argued that women's "comparative disadvantages" in the labor market can be translated into "comparative advantages" for companies, and even governments in the international markets (Arizpe and Aranda 1981: 473). In contrast to the

assumption that economic growth undermines gender-based employment and wage inequalities, this argument implies a feminization of export-related employment, in particular, accompanied by a simultaneous entrenchment of the gender wage gap. Guy Standing (1989) explains the absolute and relative growth in the use of women's labor around the world during the period of globalization with the wide acceptance of lower pay for women workers. This is relevant in a context in which low labor costs have been a key factor in influencing product demand (Seguino and Were 2014). For the period between 1975 and 1995, Stephanie Seguino (2000) finds evidence for this pattern in a sample of Asian countries. According to her analysis, those economies with the widest gender-based wage gaps grew most rapidly. In this scenario, women's employment creation goes hand in hand with economic growth, in a context of significant labor-intensive export orientation and gender-based wage differentials (Seguino 2020).

These variegated understandings of gendered employment responses to GDP growth provide the conceptual framework for the empirical analysis.

METHODS AND DATA

Estimating gendered elasticities

In order to understand women's and men's employment responsiveness to growth, we calculate and compare sectoral women's and men's growth elasticities of employment for the period 1984–2017 for agriculture, industry, and services sectors. 1984 marks the earliest year where gendered sectoral employment data become available for Pakistan, while 2017 is the latest. Kapsos (2005: 2–3) distinguishes two common approaches to estimate growth elasticities of employment, namely arc and point elasticities. We estimate gendered point elasticities through a log-linear regression model over three-year non-overlapping intervals in order to avoid the greater instability that year-on-year arc elasticities tend to exhibit.

Our point elasticities are estimated as:

$$lnE_{ijk} = \alpha + \beta_{ijk}lnY_{ik} + u_{ijk}; i = 1984, \ldots, 2017; j = 1, 2; k = 1, 2, 3 \quad (1)$$

where E_{ijk} is employment (in millions) in year i for gender j in sector k, Y_{ik} is output (in PKR millions) in year i for sector k, and u_{ijk} is a random error term. We estimate equation 1 for each of our eleven three-year intervals, producing a total of thirty-three sectoral employment elasticities for women and for men. β_{ijk} then is the resulting sectoral, gendered point elasticity for each period interval. The trends in the gendered, sectoral point elasticities are analyzed in light of economic policy and sociocultural norms in Pakistan. Subsequently, the estimated point elasticities serve as the dependent variable in the multivariate regression analysis.[3]

Regression estimation

The linear representation of our regression model for understanding the drivers of sectoral gendered point employment elasticities is provided in equation 2 below:

$$\varepsilon_{ik} = \gamma_0 + \gamma_1 X_i + \gamma_2 W_i + \gamma_3 HC_i + \gamma_4 GO_i + \gamma_5 C + \mu_{ik};$$
$$i = 1984, \ldots, 2017; k = 1, 2, 3 \tag{2}$$

We estimate one regression for women and the other for men. ϵ, i, and k are as described above and μ is a random error term. Since the dependent variable is a point elasticity interval-estimate, we use an average for each independent variable for the corresponding period-interval of the elasticity estimates. Hence, there are a total of eleven period-intervals for each regressor as well.

Our choice of explanatory variables is driven by the conceptual framework explained previously. Here, export orientation is assumed to be associated with labor-intensive development and female-intensive employment. In line with critical feminist perspectives outlined above and earlier empirical studies (Kapsos 2005; Anderson and Braunstein 2013; Anderson 2016), export orientation is expected to increase women's growth elasticities of employment in industry in particular. Similar to James Heintz (2006: 40), we proxy export orientation (X) by the share of exports of goods and services in GDP. As a robustness check of our specification, we introduce a phase dummy as an alternative measure of export orientation. The year 2005 during which global trade in textiles and clothing was liberalized under the ATC, marked a significant break for one of the most labor-intensive sectors of Pakistan's economy. We thus expect employment responses to be markedly different before and after this export liberalization. Keeping this in mind, our phase dummy takes the value of one for the period post-ATC expiry from 2005 onward.

As a measure of gender-based inequality we also include the average female to male ratio in real hourly wages in our model (W). Akin to critical feminist work, we expect a macroeconomic competitive advantage for women based on their disadvantaged economic position as reflected in lower wages relative to men.

Falguni Pattanaik and Narayn Chandra Nayak (2014) argue that the relationship between output and employment is affected, among others, by the quality of human capital. Better education may enhance labor productivity and, therefore, growth. From a gender perspective, this is also relevant in Boserup's (1970) model. It assumes that gender differences in education mediate women's and men's respective access to industrial employment in different stages of economic development. We therefore

hypothesize that high human capital endowment may increase the gender-specific growth elasticities of employment (Pattanaik and Nayak 2014) and include a variable that proxies human capital (*HC*) for each gender. Given the high share of employed women without formal education, especially in the primary sector, and in order to keep our analysis comparable across the three sectors, we measure *HC* as the percentage share of literacy of persons ages 10 years and older by gender.

While earlier studies (Anderson and Braunstein 2013; Seguino and Were 2014; Tejani 2016) focus on the role of macroeconomic structures, Kabeer (2016) emphasizes that growth effects on gendered employment are mediated by local structures of patriarchy. She quotes studies that find that, along with economic growth, women's share of employment is positively associated with gender-egalitarian attitudes (Kabeer 2016: 313). Within Pakistan, expressions of gender equality vary on the basis of rural/urban location, ethnicity, women and men's position in feudal and class hierarchies, lifecycle, as well as by religious affiliation (Grünenfelder and Siegmann 2016: 2). It has not been possible, however, to further disaggregate growth figures, for example, by province, in order to connect some of this variation to regional growth. Still, different indicators related to gender (in)equality reveal broad trends over the years as highlighted previously (also see Mahbub ul Haq Research Centre [2016]: 63–104). Therefore, in addition to macroeconomic variables that are assumed to influence gendered employment elasticities, we estimate an alternate model that includes a proxy for the gender order (*GO*).

Specifically, we use "excess female mortality" as a proxy for the gender order (Kabeer, Huq, and Mahmud 2014). There is a major caveat with using female to male life expectancy as a measure of women's disadvantage: Even in countries such as Pakistan where women face poorer access to medical care relative to men, women's biological advantage commonly implies that women's life expectancy outstrips that of men. For instance, Shahnaz Kazi (1999) records that women's life expectancy had finally overtaken men's life expectancy in Pakistan some twenty years back. Thus, following Hill and Upchurch (1995: 129), we construct a measure of "excess female mortality" and take the difference between gendered life expectancy in Pakistan relative to Norway. For ease of interpretation, we then express this difference as a percentage share of the Norwegian mortality ratio.

$$GO\ Proxy = \left[\frac{Female\ Life\ Expectancy}{Male\ Life\ Expectancy}_{Norway} - \frac{Female\ Life\ Expectancy}{Male\ Life\ Expectancy}_{Pakistan} \right]$$
$$/ \frac{Female\ Life\ Expectancy}{Male\ Life\ Expectancy}_{Norway} \times 100 \tag{3}$$

Our choice of using Norway as the benchmark is derived from the country's performance vis-à-vis gender equality: It topped the Gender Development Index in 2017 (UNDP 2018) and has consistently remained one of the top ranked countries. Thus, discrimination against women is likely to be small making Norway a solid base against which to develop our empirical standard to measure gender discrimination in the Pakistani context.

Finally, our analytical framework highlights the relevance of a sectoral perspective on growth elasticities of employment. We therefore include sectoral controls (C) for agriculture and services (with industry as reference). However, they are statistically insignificant, and their inclusion hardly influences the strength and direction of the other independent variables. We therefore exclude these controls to preserve degrees of freedom from the models presented previously.

Estimation technique

Given the highly differentiated manner in which women and men's employment responds to growth and contraction reflected in the gendered sectoral elasticities presented earlier, as well as the gendered nature of Pakistan's economic and cultural environment, we estimate gender-specific models. However, men's and women's employment responsiveness are likely to be connected, resulting in correlated error terms between the female and male elasticity regressions. We therefore estimate our male and female equations as a system by using seemingly unrelated regression (SUR) OLS-based technique which corrects the standard errors for this correlation. Diagnostics indeed show that the residuals of the female and male regressions in all three models are correlated supporting the use of the SUR model.

One concern with SUR estimation is that the standard errors for the regression coefficients have a downward bias resulting in a tendency to over-reject the null hypothesis in Wald tests (Rilstone and Veall 1996). In order to obtain better inferences from the SUR estimation, we use bootstrapped estimates of the standard errors. These standard errors are also clustered to account for correlation across observations within each sector. Finally, the Breusch–Pagan and Cook–Weisberg diagnostic tests show evidence of heteroscedasticity, particularly for the male estimations. Thus, we use robust standard errors in our estimation.

Data details

We derive data for our elasticity estimates and our regressors from several sources. All labor-related statistics, such as women's and men's sectoral employment, hourly wages for women and men, as well as gendered literacy

levels rely on Pakistan Labour Force Survey (LFS) data. This paper follows the PBS' conventional approach for calculating labor force participation and derived from that, employment.

While LFS data do cover both informal and formal employment, and different types of employment statuses (waged/salaried, self-employed, unpaid family members), it is worth noting here that conventional labor force participation rates underestimate Pakistan's widespread informal employment and thereby also women's participation in the labor force and employment in particular (Grünenfelder and Siegmann 2016). However, the alternative measure of labor force participation calculated by the PBS from the LFS, that is, the "augmented" participation rate that captures women's employment more adequately, is only available from 1990.

Sectoral GDP series have been obtained from the State Bank of Pakistan (SBP) which carries data till 2015. GDP figures for 2016 and 2017 have been taken from the Pakistan Economic Surveys. These have been deflated with 1980 as the base year. Finally, the World Bank's World Development Indicators serve as the data source for exports of goods and services as share of GDP, and women's versus men's life expectancy ratio for both Pakistan and Norway. We provide details of data sources for each of our variables as well as missing values in Table A1 in the appendix.

In order to fill data gaps that arise from missing years in our time series, we refer to Anderson (2016) and impute values as a simple average of the year before and after using the ipolate command in Stata. To extrapolate backward, as is required for hourly wages whose series starts from 1990, we use R's Amelia II algorithm based on James Honaker, Gary King, and Matthew Blackwell (2011). The period means for our explanatory variables are provided in Figure 3 below.

The export share in GDP displays a slightly curvilinear time trend, peaking at about 17 percent in the early 1990s, leveling off and slowly declining after 2002–04.

As pointed out in Mahbub ul Haq Research Centre (2016), Pakistan's progress regarding gender equality is uneven, with gains in women's human capital endowment relative to men's contrasting with a simultaneous deterioration in their relative economic position. Between 1984 and 2017, both women's and men's education have improved and the gender gap in literacy has narrowed from 29 to 21 percentage points. Similarly, the reduction in excess female mortality over the past three decades reflects women and girls' better health status and access to healthcare. In contrast, we observe a widening gender wage gap as expressed in the drop in the hourly gender wage ratio from more than 90 to about 70 percent during our period of analysis.

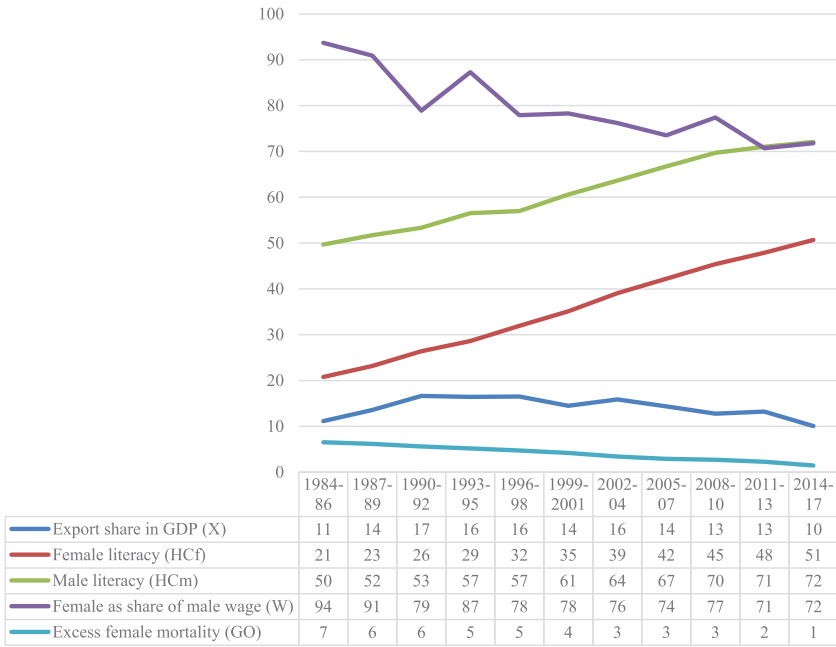|	1984-86	1987-89	1990-92	1993-95	1996-98	1999-2001	2002-04	2005-07	2008-10	2011-13	2014-17
Export share in GDP (X)	11	14	17	16	16	14	16	14	13	13	10
Female literacy (HCf)	21	23	26	29	32	35	39	42	45	48	51
Male literacy (HCm)	50	52	53	57	57	61	64	67	70	71	72
Female as share of male wage (W)	94	91	79	87	78	78	76	74	77	71	72
Excess female mortality (GO)	7	6	6	5	5	4	3	3	3	2	1

Figure 3 Means for explanatory variables, 1984–2017 (%).
Sources: PBS (2018); World Bank (2019).

GENDERED EMPLOYMENT RESPONSES TO PAKISTAN'S GROWTH PERFORMANCE

Comparing gendered growth elasticities of employment

Overall, a look at Figures 4–6 shows that between 1984 and 2017, women's and men's employment in Pakistan responded in markedly different ways to sectoral growth impulses, and that these differences varied by sector. Our estimates confirm the trend of higher women's than men's elasticities that Kapsos (2005: 35) identifies. This trend is associated with a process of narrowing of gender gaps in employment reflected in the gradual rise of women's share in total employment from less than a tenth in 1984– 22 percent in 2017. Besides, our analysis brings the greater volatility of women's compared to men's employment elasticities to the fore. While women's employment often moves in tandem with sectoral output growth in industry (Figure 5), in agriculture and services, it shows counter-rotating trends in a number of periods (Figures 4 and 6).
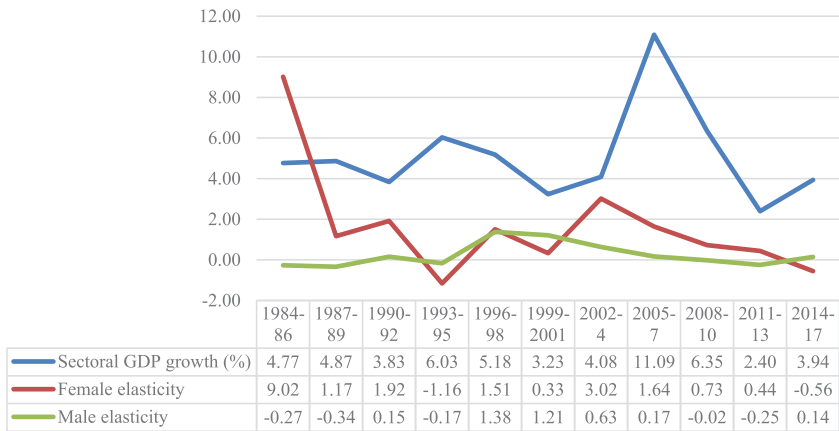
Figure 4 GDP growth and gendered sectoral elasticities in agriculture, 1984–2017

Agriculture

Reflecting the overall trend identified above, the responsiveness of women's agricultural employment to the sector's growth in the period between 1984 and 2017 was stronger than that of men's agricultural employment (Figure 4). Women's employment responses have largely been elastic compared to mostly inelastic men's reactions.[4] Besides, agriculture is the only sector in which men's employment elasticities are often negative. In the context of the positive growth rates of agricultural output, this implies a reduction in men's agricultural employment during those periods.

Women's elasticities exceeding those of men in a context of output growth implies a process of catching up for women's employment (Kapsos 2005: 9). In agriculture, this was the case throughout most of our period of analysis, resulting in a near tripling of women's share in total agricultural employment from 14 to 39 percent between 1984 and 2017. The rise in women's employment and the narrowing of the gender gap in agricultural employment also owes to the accelerated expansion of cotton cultivation since the 1980s which went hand in hand with a rising number of women agricultural workers employed in the cotton harvest (Kazi 1999: 387).

This trend mirrors Boserup's gendered dualist model of economic development. In the context of Pakistan, men's negative elasticities of the 1980s can be related to men's emigration to the countries of the Gulf Cooperation Council (GCC) as well as to their employment in the rural non-farm sector whose expansion was fueled by remittances from GCC countries (Kazi 1999: 386). Women who stayed behind took over men's agricultural work, leading to a process of feminization of agriculture.

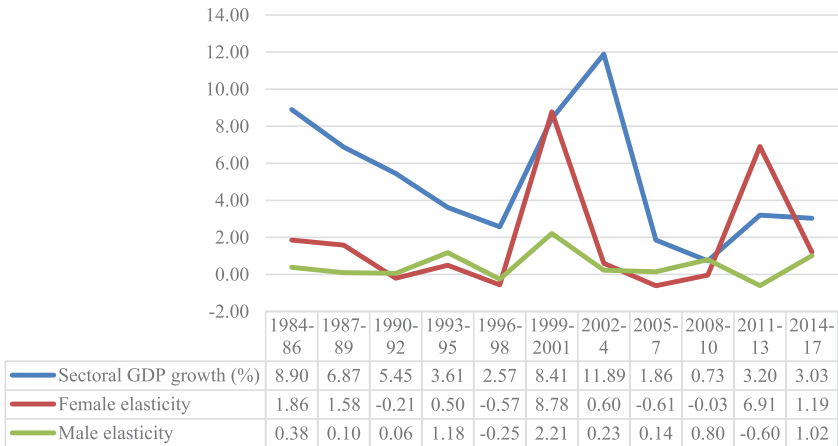|	1984-86	1987-89	1990-92	1993-95	1996-98	1999-2001	2002-4	2005-7	2008-10	2011-13	2014-17
Sectoral GDP growth (%)	8.90	6.87	5.45	3.61	2.57	8.41	11.89	1.86	0.73	3.20	3.03
Female elasticity	1.86	1.58	-0.21	0.50	-0.57	8.78	0.60	-0.61	-0.03	6.91	1.19
Male elasticity	0.38	0.10	0.06	1.18	-0.25	2.21	0.23	0.14	0.80	-0.60	1.02

Figure 5 GDP growth and gendered sectoral elasticities in industry, 1984–2017

At the same time, men seem to be pushed into agricultural work in response to downturns in other sectors. This explains why, for example, in the second half of the 1990s, men's agricultural elasticities briefly turn positive and elastic. During the 1996–98 period, agriculture played a buffering role in response to the contraction in both services and, especially, industry that was associated with employment losses for men in particular. In contrast, women's agricultural employment reflects crop cultivation patterns. For instance, women's negative elasticities in the 2014–17 period occur when the cotton crop was hit by climate-related shocks.

Overall, the increasing share of women's agricultural employment over our period of analysis is likely to be mediated by a gender order that constrains women's mobility and discourages their employment outside the homestead. As a result, rural women's migration to urban areas for employment is rare. In 2017–18, less than one percent of women's inter-provincial and inter-district migrations were employment-related, whereas this share was 34.3 percent for men (PBS 2018).

In general, we do not interpret the feminization of Pakistan's agriculture as an empowering process. Given that an elasticity higher than unity also implies a decline in productivity (Islam 2019), the elastic responses of women's employment to agricultural output growth reflect that women workers are left behind with precarious, poorly paid or unpaid jobs. Rather, in line with critical feminist perspectives, we understand the feminization of agriculture, and of cotton cultivation in particular that has formed the basis of Pakistan's textile manufacturing and exports as a contribution to macroeconomic and export growth at the expense of women workers' bargaining power and wages (Siegmann and Shaheen 2008).

Industry

In industry, men's and especially women's growth elasticities of employment are more volatile than in agriculture (Figure 5). Employment responses to the high industrial output increases triggered by Zia-ul Haq's market-oriented policies are positive throughout the 1980s. But while increases in sectoral GDP translates into a more than proportional rise in women's industrial employment, the response of men's industrial employment is inelastic. Consistent with Kapsos (2005) who sees occupational segregation as a potential explanation of gender differences in employment elasticities, this difference may be explained by women workers' concentration in the more labor-intensive parts of industrial production (Siegmann 2005). As a result, similar to agriculture, gender gaps in industrial employment narrowed during the 1980s.

The industrial slowdown over the 1990s triggered, among others, by structural adjustment reversed that situation. Employment responses were mostly inelastic during that decade with higher men's than women's elasticities: The absolute decline in women's employment paralleled by slight increases in men's industrial employment during a period of moderate industrial growth between 1990 and 1999 can be related to a stimulation of more capital-intensive manufacturing sectors that favored men's employment. The reverse dynamic of highly elastic women's employment responses to industrial output growth between 2011–13, too, can be explained based on the mismatch between high output growth in more labor- and, hence, female-intensive small-scale manufacturing and the sluggish recovery of capital-intensive large-scale manufacturing from the 2008–09 crisis (Government of Pakistan 2015).

The period of high industrial output growth between 1999 and 2004 was associated with employment gains for both women and men. Women's employment elasticities overtook that of men, again narrowing the gender gap in industrial employment. These dynamics took place while Pakistan's textile and clothing manufacturers prepared for the ATC expiry. In 2004, textile and clothing exporters faced a price squeeze that they likely compensated for by increasing export volumes. From a critical feminist perspective, Karin Astrid Siegmann (2007) interprets the accompanying preferential employment of women workers as using women's disadvantage in the labor market as an advantage for exporters. Their lower average wages of around 70 percent of men's hourly wages during that period enabled exporters to lower labor costs, thereby compensating for the downward pressure on export prices.

The trend of narrowing gender gaps in industrial employment was reversed again during the crisis of industrial production between 2005 and 2010. Low output growth of less than four percent during this period triggered by the drop in foreign demand coincided with – possibly more

influential – domestic factors that troubled export sectors. These dynamics led to a closure of a significant number of knitwear units and spinning mills affecting small or informal units in particular (Siegmann 2011) where production is both labor-intensive and dominated by women. Thus, job losses for women exceeded those for men, resulting in negative women's employment elasticities that are lower than men's employment elasticities, and women bearing the brunt of the recession (Siegmann and Majid 2014).

The stronger and more volatile response of women's industrial employment to the economic cycle is likely to be rooted in their marginalized status in the labor market. Apart from persistent and increasing gender wage inequality in Pakistan's industrial sector, this is expressed in women workers' lack of representation in trade unions and justified by social norms that view men as primary breadwinners. Given that in Pakistan, women's earnings are often viewed as supplementary while men are considered to have a right to regular employment, in case of recessions the formal sector is likely to see employers laying-off women first (Siegmann and Majid 2014).

Services

Overall, the services sector witnessed robust annual growth rates of four to seven percent during the past three decades, accompanied by a slight narrowing of the gender gap in employment. While men's services employment responded in a moderately elastic or inelastic but largely positive fashion to sectoral output growth throughout the period under analysis, women's employment responses to services sector growth were more elastic while also exhibiting greater volatility (Figure 6).

The decline in services sector growth at the end of the 1980s is likely to reflect the intensification of structural adjustment policies implemented in Pakistan during that period. The counter-rotating movement of employment elasticities, especially for women, suggests an "added worker effect." This effect refers to the take-up of jobs by so-called secondary workers, often women and young people, during recessions, compensating for employment and/or earnings of other household members (Borjas 2010, 70–1). During the period between 1989 and the early 1990s, restrained recruitment and even lay-offs among – largely men – public service employees may have triggered other, especially women, household members' entry into employment, for example, in domestic service, explaining the highly elastic response of women's employment to the slow-down of services sector growth. Here, too, women's elasticities of greater than unity reflect a decline in productivity and are unlikely to translate into decent conditions in feminized service sector employment.

Employment elasticities in services turned negative when an overvalued Rupee constrained wholesale and retail trade and, hence, services growth

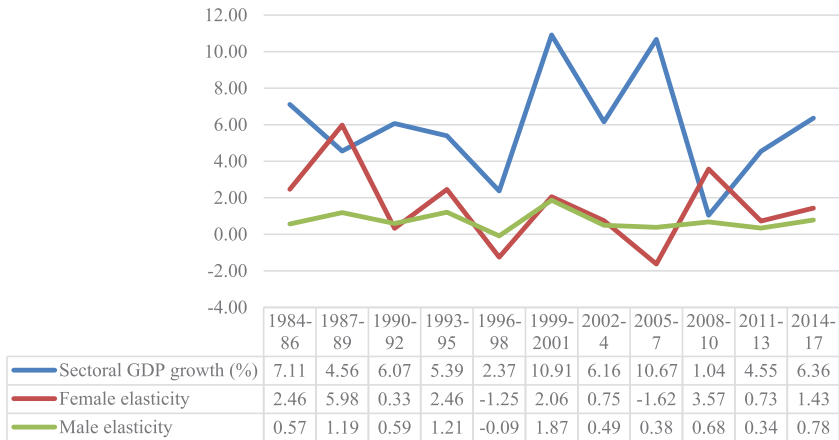|	1984-86	1987-89	1990-92	1993-95	1996-98	1999-2001	2002-4	2005-7	2008-10	2011-13	2014-17
Sectoral GDP growth (%)	7.11	4.56	6.07	5.39	2.37	10.91	6.16	10.67	1.04	4.55	6.36
Female elasticity	2.46	5.98	0.33	2.46	-1.25	2.06	0.75	-1.62	3.57	0.73	1.43
Male elasticity	0.57	1.19	0.59	1.21	-0.09	1.87	0.49	0.38	0.68	0.34	0.78

Figure 6 GDP growth and gendered sectoral elasticities in services, 1984–2017

during the second half of the 1990s. The stronger response of women's employment is likely to be driven by a higher concentration of women workers in retail employment compared to other – faster growing – services sub-sectors.

The return to very high growth rates in services sector output between 1999 and 2004 triggered by services privatization were associated with positive women's and men's employment elasticities during the first years after liberalization. They indicate gains in services sector employment, that is, in banks and telecommunication franchising, for both women and men.

Taken together, the discussion in this section confirms that men and women experience the dividends of growth in a highly differentiated manner, and that the differences in gendered employment sees variance both across sectors, and across time periods within a sector. Our analysis of these differences indicates that this variance is rooted both in the gender order as well as the macroeconomic dynamics, including how these dynamics are shaped by the policy environment.

Explaining gendered growth elasticities of employment

Having answered our first research question regarding the gendered growth responsiveness of employment, we now turn to our second question and explore the drivers of the differences in the gendered sectoral employment elasticities.

Our estimates of gendered sectoral growth elasticities of employment are displayed in Table 2 and Table A2. We estimate three models with the independent variables detailed above. Model 1 does not include independent variables that directly relate to gender inequalities but focuses

Table 2 SUR estimates of gendered growth elasticities of employment in Pakistan (with export proxy)

Dependent variable: Pooled women's and men's sectoral elasticities, 1984–2017

	Model 1		Model 2		Model 3	
	Women	Men	Women	Men	Women	Men
Export share in GDP (X; %)	− 0.43***	0.02	− 0.41	0.03	− 0.44	0.06
	(0.13)	(0.07)	(0.31)	(0.07)	(0.31)	(0.10)
Women's literacy (HC_f; %)	− 0.08**		− 0.07		0.68	
	(0.03)		(0.15)		(0.42)	
Men's literacy (HC_m; %)		− 0.00		0.01		− 0.11
		(0.01)		(0.04)		(0.08)
Women's as share of men's wage (W; %)			0.01	0.01	− 0.02	0.04
			(0.17)	(0.05)	(0.16)	(0.06)
Excess female mortality (GO; %)					4.69**	− 0.74
					(2.38)	(0.53)
Constant	10.53***	0.29	9.02	− 1.26	− 33.99	6.04
	(3.55)	(1.35)	(23.35)	(6.51)	(33.86)	(5.35)
R-squared	0.15	0.00	0.15	0.01	0.19	0.04
Observations	33	33	33	33	33	33

Notes: Bootstrapped and robust standard errors in parentheses. ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

on regressors related to the macroeconomic structure, such as the proxies for export orientation and human capital. Model 2 adds the gender wage ratio, whereas Model 3 includes the additional control for Pakistan's gender order proxied by excess female mortality.

The estimates displayed in Table 2 and Table A2 in the appendix differ in their proxy for export orientation. While the specifications presented in Table 2 include exports of goods and services as share of GDP, Table A2 uses the binary variable related to the ATC expiry instead and serves as a robustness check.

In interpreting the regression results, it is important to bear in mind that the low number of observations for the dependent variable limits the number of independent variables, making omitted variable bias a concern. In this context, the solid R-squared values for the female specifications in the full Model 3 are encouraging as they indicate that we are able to explain a substantial degree of the variation despite the low number of observations. For the male estimations, interestingly, the model fit is solid for the specification with the ATC expiry dummy, but poor when the export share in GDP is included. Besides, the contemporaneous nature of the

Table 3 Standardized coefficient estimates of gendered growth elasticities of employment in Pakistan (with export proxy)

Dependent variable: Pooled women's and men's sectoral elasticities, 1984–2017

	Model 1		Model 2		Model 3	
	Women	Men	Women	Men	Women	Men
Standardized Export share in GDP (X)	− 0.35***	0.06	− 0.34	0.09	− 0.36	0.21
Standardized women's literacy (HC_f)	− 0.31**		− 0.27		2.57	
Standardized men's literacy (HC_m)		− 0.01		0.10		− 1.36
Standardized women's as share of men's wage (W)			0.04	0.12	− 0.05	0.50
Standardized excess female mortality (GO)					2.93**	− 1.86

Notes: ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

dependent and independent variables means that results must be viewed as evidence of correlation rather than of causation.

Following Jane Miller and Yana van der Meulen Rodgers (2008), the discussion below highlights the role of variables with statistical and substantive significance in the explanation of gendered growth elasticities of employment in Pakistan. However, those variables that are not found to be statistically and economically significant still inform us about how our study compares with the theoretical predictions and empirical studies summarized earlier in the paper. Thus, our discussion includes both.

For ease of interpretation of the regressors' substantive relation with the elasticities, and for comparison between genders as well as across the covariates, we standardize our continuous variables in Table 3 and Table A3. Standardization of each variable is done by subtracting the mean of the series for the respective variable and dividing by its standard deviation. To understand the interpretation of the resulting standardized coefficients, consider that the coefficient value of the export share in GDP, X, in the female regression Model 1 is − 0.35 (Table 3). Thus, a one standard deviation increase in independent variable X is associated with a decrease of 0.35 standard deviations in female elasticity.

Overall, our regression analysis suggests that the macroeconomic structure more strongly mediates male employment responses to growth. For women, factors related to Pakistan's gender order seem more relevant.

The regression results for the export proxy displayed in Table 2 contrast with the assumption that export orientation stimulates a feminization of employment. In Model 1, the export share in GDP displays a statistically significant association with women's, but not with men's elasticities. Its standardized coefficient reflects a decrease of 0.35 standard deviations in the responsiveness of women's employment to a one standard deviation rise in the export share (Table 3). Against the backdrop of the slight overall decrease in the export share of about 3 percentage points over the period of analysis, this association in fact implies a contribution of export orientation to the feminization of employment in response to growth over time. This counters the critical feminist hypothesis that exporters of labor-intensive goods benefit financially from preferential recruitment of women workers because of the cost-reducing gender wage gap. Having said that, while the strength and direction of the variable's coefficient remains comparable, based on conventional benchmarks, export orientation is no longer statistically significant in the female Models 2 and 3 upon the inclusion of variables that directly relate to gender inequalities in Pakistan.[5]

After the export liberalization of textiles and clothing trade through the ATC, the employment intensity of growth in Pakistan declined (Table A2). This can be gauged from the coefficients of the post-ATC dummy for both female and male growth elasticities of employment across Models 1 to 3. With the exception of the female coefficient in Model 1, the coefficients are negative. Given the massive labor-saving investment in preparation of the ATC expiry (Siegmann 2005), this is likely to reflect a secular trend in Pakistan towards productivity rather than employment-driven growth that parallels the pattern that emerges from Heintz' (2006) cross-country analysis. The higher standardized and statistically significant coefficients of the ATC variable in the models estimating male elasticities suggest that in the period after the liberalization of Pakistan's main industrial and export sector, it is the responsiveness of men's employment, in particular, to GDP changes that has been reduced.

When controlling for Pakistan's patriarchal setup, the substantive role of women's literacy for women's employment elasticities changes dramatically. Once we include Pakistan's excess female mortality in Model 3, a one standard deviation increase in women's literacy is associated with more than two standard deviations increase in women's employment responsiveness to growth. The coefficient is statistically significant in the specification that includes the post-ATC dummy (Table A2) while, with 0.11, its p-value is near the benchmark level in the model containing the export share in GDP (Table 2). Our results suggest that the improvement in women's education over the past decades may well have increased their ability to benefit from growth in terms of greater employment access.

When considering Model 3 in the specifications including the ATC expiry dummy for men's employment, the coefficient although positive

and statistically significant, shows the substantively lower role of human capital endowment for explaining the responsiveness of men's employment to growth impulses compared to women's employment. This lends support to the finding of Anderson's (2016) cross-country study that equality in educational opportunities is important for making growth more employment-intensive for women and Monazza Aslam and Geeta Kingdon's (2012) argument that women's education can be a path to gender equality in Pakistan's labor market.

The substantive role and statistical significance of the gender wage ratio is low for male and female regressions in the models including the GDP share of exports. Once this export proxy is replaced with the ATC expiry dummy, the role of the gender wage ratio in female regressions changes, though. Here, the gender wage ratio's coefficient in Models 2 and 3 suggests a moderately positive and statistically significant association with women's employment elasticities of growth. The ratio's behavior has to be read against the decreasing trend in the female to male ratio in hourly real wages in Pakistan during the past decades, a trend largely driven by dynamics in industry (Figure 3).[6] This implies that a one standard deviation decrease in the gender wage ratio is associated with a 0.5 standard deviation decrease in the responsiveness to GDP changes. Contrary to critical feminist perspectives, this suggests that the observed rising gender wage inequality hampers facilitating women's entry into employment.

Last but not least, our proxy for Pakistan's gender order contradicts the assumption that a more gender-egalitarian setup increases the responsiveness of women's employment to growth impulses. The inclusion of this proxy visibly improves the model fit for the female regression. We find that the decline in female excess mortality observed in Figure 3 translates into a lowering of women's employment elasticities: A one standard deviation decrease of this regressor is associated with a disproportionate drop in women's elasticities of about 3 standard deviations. The male coefficient reflects a much weaker and statistically insignificant relationship. This result is puzzling. Pakistani women's better health status and access to healthcare is likely to reflect a greater valuation of women's lives and a higher degree of women's agency. In the context of the institution of *purdah* that limits women's and girls' mobility, greater agency could be assumed to ease women's take-up of employment opportunities. Yet, our regression results indicate the reverse.

We explain this effect by relating it to women's secondary status in the labor market based on a "male breadwinner bias." The volatility of women's elasticities in industry that follow boom and bust periods compared to men's inelastic employment responses to output growth also expresses this secondary status (Figure 5). From this perspective, a dampening effect of a more egalitarian setup on the responsiveness of women's employment

could actually reflect an improvement of women's position in the labor market.

CONCLUSION

Taking up Kabeer's (2016) invitation to engage with the intersection between macroeconomic dynamics and a specific gender order so as to better understand gendered outcomes of growth, we consider the inclusiveness of Pakistan's growth by calculating and analyzing gendered sectoral employment elasticities in the period between 1984 and 2017.

The cross-sectoral trend of higher and more volatile growth responsiveness of women's compared to men's employment that we identify reflects the disadvantaged position of women in Pakistan. In line with Boserup's (1970) model, we find a process of feminization of agriculture, leaving women workers with poorly paid and precarious jobs. Extending critical feminist predictions, we understand industrial dynamics as expressions of a "male breadwinner bias," while we interpret the counter-rotating trends of sectoral growth and women's employment in services as added worker effects.

Our econometric exploration of the mechanisms through which growth translates into employment brings to the fore that macroeconomic trends are more important mediators of men's employment elasticities of growth. For women's employment, in contrast, the successive inclusion of variables related to gender structures of Pakistan's society is more relevant to explain the responsiveness to growth impulses. This both supports and nuances Kabeer's (2016) feminist institutionalist argument about the mediating role of the gender order for explaining how growth impulses shape gendered employment.

Do the dynamics thus identified imply that growth has been good for women's employment in Pakistan? Our discussion has brought to light ambiguous interpretations of gendered employment elasticities. Echoing our disclaimer that the quality of growth-induced employment varies, these interpretations contribute to the debate within and beyond feminist economics about whether access to employment in itself contributes to women's empowerment. Our findings of higher women's relative to men's employment elasticities of sectoral growth imply a secular trend of closing gender gaps in employment. Furthermore, we identify a strong, catalytic role of Pakistan's progress in women's education in narrowing gender gaps in employment once the effect of Pakistan's patriarchal gender order is controlled for. From the perspective of gender equality in the labor market, this is good news.

However, high women's elasticities have also meant greater volatility and, hence, precarity of women's employment that reflects their normative framing as secondary income earners. Besides, women's subordinate

position is reflected in the role that gender wage inequality plays in facilitating their entry into employment. Taken together, this suggests that macroeconomic "business as usual" during the past decades has not reinforced the improvements in women's health and access to education through economic empowerment.

These results underline the research and policy relevance to consider how different dimensions of gender equality mediate the gendered inclusiveness of growth in divergent ways. The relative improvement in women's literacy that is strongly and positively associated with women's employment elasticities of growth suggests that greater gender parity in education enables women to benefit from growth in the form of better access to paid employment. The reverse is the case for improvements in women's relative life expectancy over our period of analysis, understood as indicative of women's social status. We interpret the related effect as a reduction in the volatility and hence precarity of women's employment associated with improved status. Future research that further disaggregates economic sectors and takes indicators of the quality of gendered employment into consideration could help to consolidate our understanding of whether growth has been good for women in Pakistan.

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NOTES

[1] In line with Anderson (2016) we use the terms "employment responsiveness" and "employment intensity" interchangeably.

[2] Claudia Goldin (1994) explores reasons for this U-shaped female labor force function.

[3] Both the estimation of point elasticities and econometric analysis have been performed using the statistical software package Stata.

[4] With an "elastic response," we refer to an $\epsilon = > 1$, while "moderately elastic" ranges between 0.5 and 1. An "inelastic response" addresses a value of $\epsilon = 0$ to < 0.5.

[5] In Models 2 and 3, p-values are 0.187 and 0.150, respectively.

[6] Over the same period, women's to men's wage ratios slightly improved in agriculture from 65 percent in 1984–66 percent in 2017. In services, they oscillated between 91 (1984) and 95 percent (2017).

REFERENCES

Amjad, Rashid. 2015. "Economic Management Under IMF Tutelage: Key Lessons for from the Musharraf and PPP Rule 1999–2013." In *Pakistan – Moving the Economy Forward*, edited by Rashid Amjad and Shahid Javed Burki, 48–83. Cambridge: Cambridge University Press.

Amjad, Rashid and Shahid Javed Burki. 2015. "Overview." In *Pakistan – Moving the Economy Forward*, edited by Rashid Amjad and Shahid Javed Burki, 1–21. Cambridge: Cambridge University Press.

Anderson, Bret. 2016. "Do Macroeconomic Structures and Policies Shape the Employment Intensity of Growth Differently for Women and Men?" *Journal of Economic Issues* 50(4): 940–62.

Anderson, Bret and Elissa Braunstein. 2013. "Economic Growth and Employment from 1990-2010: Explaining Elasticities by Gender." *Review of Radical Political Economics* 45(3): 269–77.

Arizpe, Lourdes and Josefina Aranda. 1981. "The "Comparative Advantages" of Women's Disadvantages: Women Workers in the Strawberry Export Agribusiness in Mexico." *Signs: Journal of Women in Culture and Society* 7(2): 453–73.

Aslam, Monazza and Geeta Kingdon. 2012. "Can Education be a Path to Gender Equality in the Labour Market? An Update on Pakistan." *Comparative Education* 48(2): 211–29.

Becker, Gary S. 1971. *The Economics of Discrimination.* 2nd ed. Chicago: University of Chicago Press.

Borjas, George J. 2010. *Labor Economics.* 5th ed. Boston: McGraw-Hill/Irwin.

Boserup, Ester. 1970. *Women's Role in Economic Development.* London: Allen and Unwin.

De Mello, Luiz and Mark A. Dutz. 2012. *Promoting Inclusive Growth: Challenges and Policies.* Paris: OECD.

Dollar, David and Roberta Gatti. 1999. "Gender Inequality, Income, and Growth: Are Good Times Good for Women?" Policy Research Report on Gender and Development Working Paper No. 1. World Bank, Washington, DC.

Easterly, William. 2001. "The Political Economy of Growth Without Development: A Case Study of Pakistan." Paper for the Analytical Narratives of Growth Project, Harvard University, Cambridge, MA.

Elson, Diane and Nilüfer Çagatay. 2000. "The Social Content of Macroeconomic Policies." *World Development* 28(7): 1347–64.

Forsythe, Nancy, Roberto Patricio Korzeniewicz, and Valerie Durrant. 2000. "Gender Inequalities and Economic Growth: A Longitudinal Evaluation." *Economic Development and Cultural Change* 48(3): 573–617.

Goldin, Claudia. 1994. "The U-Shaped Female Labor Force Function in Economic Development and Economic History." Working Paper No. 4707, National Bureau of Economic Research, Cambridge, MA.

Government of Pakistan. 2015. *Pakistan Economic Survey 2014–2015.* Islamabad: Government of Pakistan.

_____. 2020. *Pakistan Economic Survey 2018–19.* Islamabad: Government of Pakistan.

Grünenfelder, Julia and Karin Astrid Siegmann. 2016. "Laboring Practices: Pakistan." In *Encyclopedia of Women & Islamic Cultures,* edited by Suad Joseph, 1–26. BrillOnline Reference Works. http://dx.doi.org/10.1163/1872-5309_ewic_COM_002055.

Hasan, Parvez. 2015. "Failed Economic Promise: Lessons from Pakistan's Development Experience." In *Pakistan – Moving the Economy Forward,* edited by Rashid Amjad and Shahid Javed Burki, 22–47. Cambridge: Cambridge University Press.

Heintz, James. 2006. *Globalization, Economic Policy and Employment: Poverty and Gender Implications.* Employment Strategy Papers No. 2006/3. Geneva: International Labour Organization (ILO).

Hill, Kenneth and Dawn M. Upchurch. 1995. "Gender Differences in Child Health: Evidence from the Demographic and Health Surveys." *Population and Development Review* 21(1): 127–51.

Honaker, James, Gary King, and Matthew Blackwell. 2011. "Amelia II: A Program for Missing Data." *Journal of Statistical Software* 45(7): 1–47.

Islam, Rizwanul. 2019. "Labour Market Outcomes and Inclusive Development: Experiences of South Asian Countries." In *Growth, Disparities and Inclusive Development in India,* edited by Rajendra P. Mamgain, 75–102. Singapore: Springer.

Kabeer, Naila. 1996. "Agency, Well-Being and Discrimination: Reflections on the Gender Dimensions of Poverty." *IDS Bulletin* 27(1): 11–21.

_____. 2016. "Gender Equality, Economic Growth, and Women's Agency: The "Endless Variety" and "Monotonous Similarity" of Patriarchal Constraints." *Feminist Economics* 22(1): 295–321.

Kabeer, Naila, Lopita Huq, and Simeen Mahmud. 2014. "Diverging Stories of "Missing Women" in South Asia: Is Son Preference Weakening in Bangladesh?" *Feminist Economics* 20(4): 138–63.

Kabeer, Naila and Luisa Natali. 2013. "Gender Equality and Economic Growth: Is there a Win-Win?" IDS Working Paper 2013/417. Brighton: IDS.

Kandiyoti, Deniz. 1988. "Bargaining with Patriarchy." *Gender and Society* 2(3): 274–90.

Kapsos, Steven. 2005. "The Employment Intensity of Growth: Trends and Macroeconomic Determinants." Employment Strategy Papers No. 12, ILO.

Kazi, Shahnaz. 1999. "Gender Inequalities and Development in Pakistan." In *Fifty Years of Pakistan's Economy: Traditional Topics and New Concerns*, edited by Shahrukh Rafi Khan, 376–414. Karachi: Oxford University Press.

Khan, Mahmood H. 1999. "Agricultural Development and Changes in the Land Tenure and Land Revenue Systems in Pakistan." In *Fifty Years of Pakistan's Economy: Traditional Topics and new Concerns*, edited by Shahrukh Rafi Khan, 97–149. Karachi: Oxford University Press.

Mahbub ul Haq Research Centre. 2016. *Human Development in South Asia 2015 – Empowering Women in South Asia*. Lahore: Mahbub ul Haq Research Centre.

Majid, Hadia. 2016. "Female Labor Supply in Pakistan: Mapping the Last Three Decades." Forman Christian College Pakistan: The Long View, 2047 Workshop, December 2, Lahore, Pakistan.

Miller, Jane E. and Yana van der Meulen Rodgers. 2008. "Economic Importance and Statistical Significance: Guidelines for Communicating Empirical Research." *Feminist Economics* 14(2): 117–49.

Organisation for Economic Co-operation and Development (OECD). 2011. *Society at a Glance Asia/Pacific 2011*. Paris: OECD.

Okun, Arthur M. 1962. "Potential GNP: Its Measurement and Significance." Cowles Foundation Paper No. 190.

Pakistan Bureau of Statistics (PBS). 2018. *Labour Force Survey*. Islamabad: PBS.

Pattanaik, Falguni and Narayan Chandra Nayak. 2014. "Macroeconomic Determinants of Employment Intensity of Growth in India." *Margin: The Journal of Applied Economic Research* 8(2): 137–54.

Rilstone, Paul and Michael Veall. 1996. "Using Bootstrapped Confidence Intervals for Improved Inferences with Seemingly Unrelated Regression Equations." *Econometric Theory* 12(3): 569–80.

Seguino, Stephanie. 2000. "Accounting for Gender in Asian Economic Growth." *Feminist Economics* 6(3): 27–58.

_____. 2007. "Plus Ça Change?: Evidence on Global Trends in Gender Norms and Stereotypes." *Feminist Economics* 13(2): 1–28.

_____. 2020. "Engendering Macroeconomic Theory and Policy." *Feminist Economics*. 26(2): 27–61.

Seguino, Stephanie and Maureen Were. 2014. "Gender, Development and Economic Growth in Sub-Saharan Africa." *Journal of African Economies* 23(suppl 1): i18–61.

Siddique, Muhammad, Kiran Mustafa, Altaf Hussain, Muhammad Muddassar Khan, Muhammad Fayaz Khan and Faizan Qureshi. 2016. "Estimating Employment Elasticity of Growth for Pakistan." *Abasyn Journal of Social Sciences* 9(Special Issue: AIC): 667–73.

Siegmann, Karin Astrid. 2005. "The Agreement on Textiles and Clothing: Potential Effects on Gendered Employment in Pakistan." *International Labour Review* 144(4): 401–21.

_____. 2007. "Gendered Employment in the Post-Quota Era: The Case of Pakistan." In *At the Crossroads: South Asian Research, Policy and Development in a Globalized World*, edited by SDPI/SAMA Editorial & Publishing Services, 3–15. Islamabad/Karachi: SDPI/SAMA Editorial & Publishing Services.

_____. 2011. "The Crisis in South Asia: From Jobless Growth to Jobless Slump?" In *The Financial Crisis and Developing Countries: A Global Multidisciplinary Perspective*, edited by Peter A. G. van Bergeijk, Arjan de Haan, and Rolph van der Hoeven, 185–200. Cheltenham: Edward Elgar.

Siegmann, Karin Astrid and Hadia Majid. 2014. "Empowering Growth in Pakistan?" Working Paper Series 595, ISS, The Hague.

Siegmann, Karin Astrid and Nazima Shaheen. 2008. "Weakest Link in the Textile Chain. Pakistani Cotton Pickers' Bitter Harvest." *Indian Journal of Labour Economics* 51(4): 619–30.

Standing, Guy. 1989. "Global Feminization Through Flexible Labor." *World Development* 17(7): 1077–95.

State Bank of Pakistan (SBP). Various years. *The State of Pakistan's Economy*. Karachi: SBP.

Tejani, Sheba. 2016. "Jobless Growth in India: An Investigation." *Cambridge Journal of Economics* 40(3): 843–70.

United Nations (UN). 2015. *Draft Outcome Document of the United Nations Summit for the Adoption of the Post-2015 Development Agenda*. New York: UN.

United Nations Development Programme (UNDP). 2018. *Human Development Indices and Indicators. 2018 Statistical Update*. New York: UNDP.

The World Bank. 2019. *World Development Indicators*. Washington, DC: The World Bank. http://data.worldbank.org/data-catalog/world-development-indicators.

Zaman, Khalid, Iqtidar Ali Shah, and Mehboob Ahmad. 2012. "Understanding the Relationship Between Economic Growth, Employment, Income Inequality and Poverty in Pakistan." *Journal of Social and Economic Development* 14(1): 1–25.

APPENDIX

Table A1 Details on data sources and available years

Variable	Data source	Years available
Sectoral GDP	SBP (various years)	All years Note: sectoral GDP for 2016 and 2017 obtained from the Pakistan Economic Surveys
Sectoral employment	PBS (2018)	1984, 1985, 1986, 1987, 1990, 1991, 1992, 1993, 1994, 1996, 1997, 1998, 1999, 2001, 2003, 2005, 2006, 2007, 2008, 2009, 2010, 2012, 2013, 2014, 2017
Exports of goods and services as share of GDP	World Bank (2019)	All years
Literacy rates	PBS (2018)	1984, 1985, 1986, 1987, 1990, 1991, 1992, 1993, 1994, 1996, 1997, 1998, 1999, 2001, 2003, 2005, 2006, 2007, 2008, 2009, 2010, 2012, 2013, 2014, 2017
Wages	PBS (2018)	1990, 1992, 1993, 1994, 1996, 1997, 1998, 1999, 2001, 2003, 2005, 2006, 2007, 2008, 2009, 2010, 2012, 2013, 2014, 2017
Life expectancy	World Bank (2019)	All except 2017

Table A2 SUR estimates of gendered growth elasticities of employment in Pakistan (with post-ATC dummy)

Dependent variable: Pooled women's and men's sectoral elasticities, 1984–2017

	Model 1		Model 2		Model 3	
	Women	Men	Women	Men	Women	Men
Post-ATC dummy (X)	0.15	− 1.04**	− 0.78	− 1.17***	− 1.35	− 1.16***
	(1.03)	(0.43)	(0.88)	(0.32)	(0.84)	(0.30)
Women's literacy (HC_f) (%)	− 0.06		0.11***		0.97***	
	(0.04)		(0.01)		(0.35)	
Men's literacy (HC_m) (%)		0.05**		0.08***		0.07***
		(0.03)		(0.02)		(0.01)
Women's as share of men's wage (W) (%)			0.20***	0.03	0.19***	0.03
			(0.03)	(0.04)	(0.03)	(0.04)
Excess female mortality (GO) (%)					5.11**	− 0.09
					(2.14)	(0.16)
Constant	3.58**	− 2.45*	− 17.62***	− 6.06	− 68.11***	− 4.93*
	(1.40)	(1.35)	(2.77)	(4.31)	(22.45)	(2.96)
R-squared	0.04	0.15	0.10	0.17	0.14	0.18
Observations	33	33	33	33	33	33

Notes: Bootstrapped and robust standard errors in parentheses. ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

Table A3 Standardized coefficient estimates of gendered growth elasticities of employment in Pakistan (with post-ATC dummy)

Dependent variable: Pooled women's and men's sectoral elasticities, 1984–2017

	Model 1		Model 2		Model 3	
	Women	Men	Women	Men	Women	Men
Standardized Post-ATC dummy (X)	0.06	− 1.59**	− 0.30	− 1.79***	− 0.52	− 1.78***
Standardized women's literacy (HC_f)	− 0.21		0.43***		3.68***	
Standardized men's literacy (HC_m)		0.65**		0.97***		0.78***
Standardized women's as share of men's wage (W)			0.56***	0.28	0.53***	0.31
Standardized excess female mortality (GO)					3.20**	− 0.22

Notes: ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.