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**Has growth been good for women's employment in
Pakistan?**

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Abstract

In this paper, we analyse the gender inclusiveness of Pakistan's economic growth performance as measured by the rate at which employment changes when GDP increases by one percentage point.* Our results show not only differences in such employment elasticities across sectors but also across genders. Rooted in women's status as secondary workers within Pakistan's labour force, their employment is commonly more responsive to the business cycle. Surprising results include that gender wage equality is positively associated with employment elasticities. Furthermore, we question the optimistic narrative that education improves women's ability to take up employment in periods of positive GDP growth.

Keywords

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

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Has growth been good for women's employment in Pakistan?¹

1 Introduction

Recent years have witnessed increased international concern with the inclusiveness of growth. With de Mello and Dutz (2012: 9), we understand inclusive growth as growth in which “benefits of increased material prosperity are [...] shared evenly among the various social groups”. 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” (UN 2015).

That marginalized groups must also see the dividends of growth has meant that in addition to the inclusion of the poor, women's participation in the growth process has also recently received increased 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 2013), this body of research has made clear that there is a two-way, asymmetric relationship between growth and gender equality (Kabeer and Natali 2013): Although we find considerable empirical evidence across various countries indicating that gender equality, especially in education and employment, contributes to economic growth, the evidence supporting that economic growth influences gender equality is not as robust or consistent (Kabeer 2012).

When it comes to the impact of growth on various measures of gender equality, it appears that the initial conditions as well as the “social norms and material practices [...] that create inequalities of gender” for that particular indicator matter (Kabeer 1996: 14, see also Gaddis and Klasen 2014). The fact that the impact of growth on gender equality varies depending on the economic context as well as the specific features of the gender order highlights the need for country case studies focusing on singular measures of gender equality. We respond to both these factors by conducting an analysis of the gender inclusiveness of Pakistan's economic growth performance in terms of employment opportunities for women versus men.

By engaging in a single country analysis for one measure of gender equality rather than the highly aggregated cross-country regressions that typically feature in macro-level studies, we are able to provide a more nuanced understanding of the mechanisms through which economic growth and gender

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inequality interact as called for by Kabeer (2016: 296). An added benefit of a country study in comparison to cross-country studies is that it makes the investigation more policy relevant.

Our motivation for picking Pakistan stems from its previous characterization as a country that has witnessed ‘growth without development’ (Easterly 2001). 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. Besides, they 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 2015, World Economic Forum 2016). The Human Rights Commission of Pakistan (2015) has pointed out that, overall, economic development remains one of the weakest elements in women’s protection framework, increasing women’s experience of exploitation. In this context, a better understanding of the nexus between economic growth, women’s employment, and ultimately their empowerment can inform the design of policies and interventions that lead to greater gender justice in Pakistan.

Our emphasis on employment stems from both 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 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 multiplier effects on other indicators including those related to women’s general well-being and their rights (Kabeer and Natali 2013).

In earlier work, we conceptualized the role of economic growth for women’s economic position as a transmission in two stages: we considered the growth responsiveness of women’s employment as a first stage. The empowering potential of women’s access to paid employment constitutes a second stage. For the latter, regular and formal forms are of special importance (Siegmann and Majid 2014).

In the current analysis, the growth responsiveness of employment has been measured by the employment elasticity of growth, i.e. the rate at which employment changes when GDP increases by one percentage point. Seguino and Were (2014: i34) point out that: “Elasticity estimates tell us something about women’s relative access to employment. This is a useful exercise since gender job segregation is pervasive and there is no guarantee that job creation will equitably benefit women and men.”

Yet, while access to paid employment is important, it is not a sufficient condition for women’s empowerment. This is because an employment increase might actually be triggered by the take up of ‘survival’ jobs in response to crises. Moreover, the quality of employment and therefore its empowering potential varies from sector to sector. Therefore, if growth induces additional

employment specifically for women, the sector in which women are employed also matters – more regular, formal forms of employment as those found typically outside of agriculture have greater potential for women’s empowerment.

From a policy perspective, the crafting of responses aimed at more gender-inclusive macro-economic development requires an understanding of the drivers for gender differences in employment responses across different sectors. In this paper, we therefore ask the following questions:

- i. Has macro-economic growth been associated with different sectoral employment elasticities for women and men in Pakistan?
- ii. If yes, how can these differences be explained?

We address our research questions in two steps. As a first step, we calculate and compare female and male employment point elasticities of growth for the period between 1990 and 2009 for agriculture, manufacturing, and services. The estimation of sectoral elasticities addresses, on the one hand, our interest in the quality of employment. In addition, Islam (2004) points out that sectoral disaggregation might provide more reliable estimates of output and employment in the context of a large degree of informal employment

Subsequently, we investigate the drivers of the resulting gendered elasticities through regression-based analysis. More specifically, we examine the link between gendered sectoral elasticities with gender inequality and macro-economic indicators considered within the literature to be associated with female employment, in particular.

Our results show not only differences in employment elasticities across sectors – with agriculture exhibiting the largest – but also across the genders. Reflecting Kapsos’ (2005) earlier analysis, women’s employment is commonly more responsive to both GDP growth and economic downturns. Both factors indicate women’s status as secondary workers within Pakistan’s labour force. Our regression results confirm the predictions within the literature vis-à-vis industrial upgrading and highlight the positive role of human capital for women’s employment in particular. Yet, we also find some surprising results such as those regarding gender wage equality that is shown to have a positive impact on employment elasticities. Finally, we do observe a role of the gender order, but only through its interactive effect on industrial employment, and there too only for women.

Our paper proceeds as follows. In the following section, we provide some background regarding Pakistan’s macro-economic trends and strategies during the past two decades as well as about the country’s gender order that makes Pakistan’s economy, including the labour market, a ‘bearer of gender’ (Whitehead 2006). We build an analytical framework in Section 3 by contrasting conventional economics’ understanding of employment elasticities of growth with feminist economics contributions. Section 4 outlines our approach to calculating and explaining gendered elasticities as well as the sources of the data we use. We describe the independent variables of our regression model while also exploring sectoral growth and gendered employment and their interplay between 1990 and 2009. Our findings vis-à-vis

our research questions are presented and discussed in section 5. We conclude with recommendations for policies that have the potential to stimulate ‘empowering growth’ as well as with reflections on remaining knowledge gaps (section 6).

2 Gender order and growth strategies in Pakistan

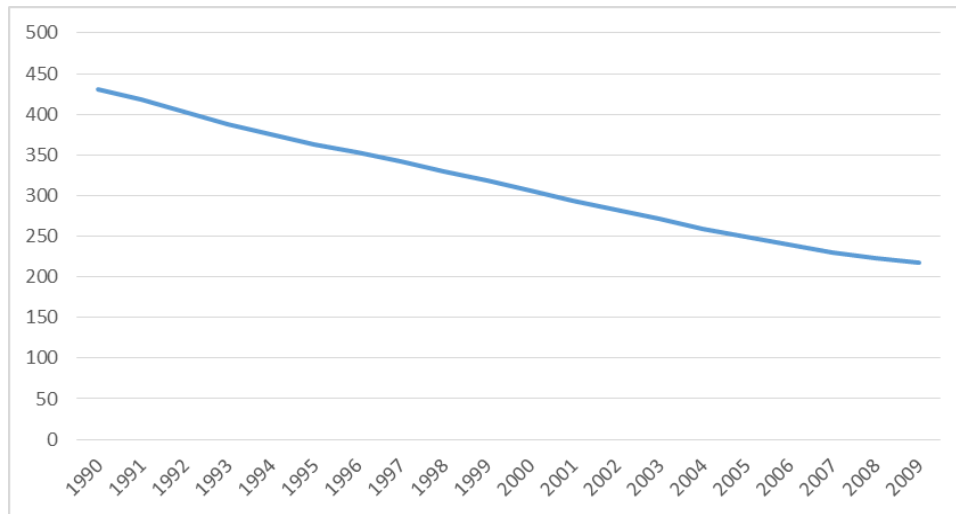
2.1 Gender order and inequality in Pakistan

As highlighted above, Pakistan’s economic and social landscape is characterized by severe marginalization of women in various spheres. This marginalization is rooted in a gender order that Kandiyoti (1988: 278-281) characterized as ‘classic patriarchy’. This sub-section outlines key features of this gender order and explores some indicators expressing it.

Pakistan adheres to the patriarchal extended family as the cultural ideal of classic patriarchy. This household model gives the senior man authority over other household members. 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 changes with their position in the life-cycle, though. The deprivation and hardship they experience as young brides is eventually superseded by the authority they will have over their own daughters-in-law (Kandiyoti 1988: 278). Besides, class and socio-economic position mediate the social position of women in Pakistan. The institution of *purdah*, denoting the spatial segregation of women’s and men’s spheres of circulation in the name of family honor, is a key factor that further reinforces women's subordination and their economic dependence on men (Grünenfelder and Siegmann 2016, Kandiyoti 1988: 280). Among others, this is because the status marker of *purdah* leads women to forego economically advantageous options for alternatives that are perceived as in keeping with their respectable domestic roles (Kandiyoti 1988: 280).

Women’s marginalization under classic patriarchy translates into their poorer health and educational status compared to men. They are seen as less deserving of access to food, adequate health care, and education. This is compounded by the institution of *purdah*, restricting women’s mobility beyond the domestic sphere, and constructions of women as carers. The resulting gender-based deprivations and inequalities in health and education are reflected in a range of indicators. While Figure 1 shows declining trends in maternal mortality in Pakistan, it still remains in excess of 200 deaths per 100,000 births. This makes Pakistan’s maternal mortality ratio (MMR) one of the highest in the region (El-Saharty and Ohno 2015).

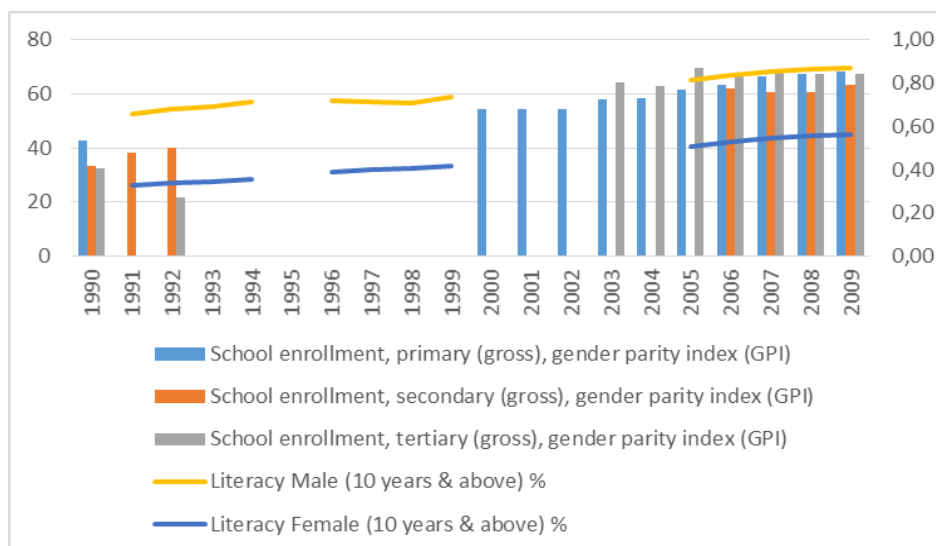
Figure 1
Maternal Mortality Ratio in Pakistan - 1990 to 2009



Source: World Bank (2016b)

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: 72). As a result, we see that men outperform women both in terms of enrolment at all levels of education as well as in terms of literacy (Figure 2). Yet, there have

Figure 2
Gendered Education in Pakistan - 1990 to 2009

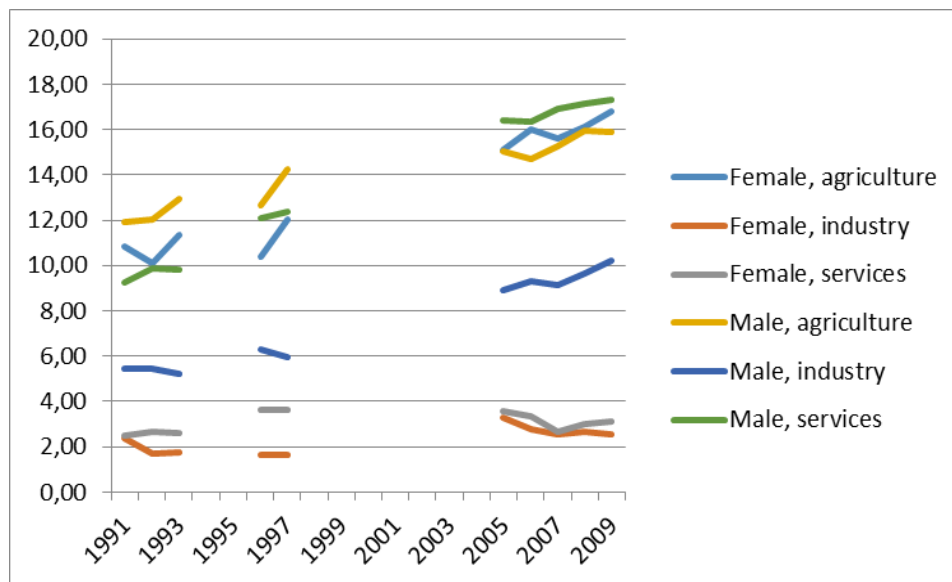


Source: World Bank (2016b), PBS (various years)

been gains not just in terms of improvements in overall levels but also in terms of gender parity. Furthermore, it is at the secondary level where parity in enrolment seems to be the worst. This is perhaps unsurprising since enrolment in secondary education is usually concomitant with the onset of puberty where mobility restrictions for women first take full effect. Interestingly though, tertiary education also sees higher gender parity indicating that those parents who allow their girls to proceed to secondary levels are more likely to have their daughters proceed with education.

Hence, while gains are being made in the areas of health and education, the improvements in terms of gender parity are gradual. These and other factors seriously disadvantage women when it comes to labour force participation and their position in the labour market. In fact, we find similar evidence of women's secondary status relative to men when we consider some labour market metrics.

Figure 3
Gendered Sectoral Employment in Pakistan, 1991-2009 (millions)



Source: authors' calculations based on PBS (various years)

The gender order in Pakistan expressed in social norms like *purdah*, and constructions of women as carers, legitimizes reproductive work as women's main responsibility. In comparison to men, women spend five additional hours per day doing housework even when doing paid work (OECD 2011). This limits women's mobility and hence their ability to participate in the paid labour market outside the home (Grünenfelder and Siegmann 2016: 19). Half of ever married women state 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). As a result, women's overall labour force participation rates are substantially lower than men's. They were slightly more

than half of men's in 2009 and the lowest in the region (Majid 2016, Mahbub al Haq 2016, PBS 2010)². Figure 3 reflects this gender gap in sectoral employment.

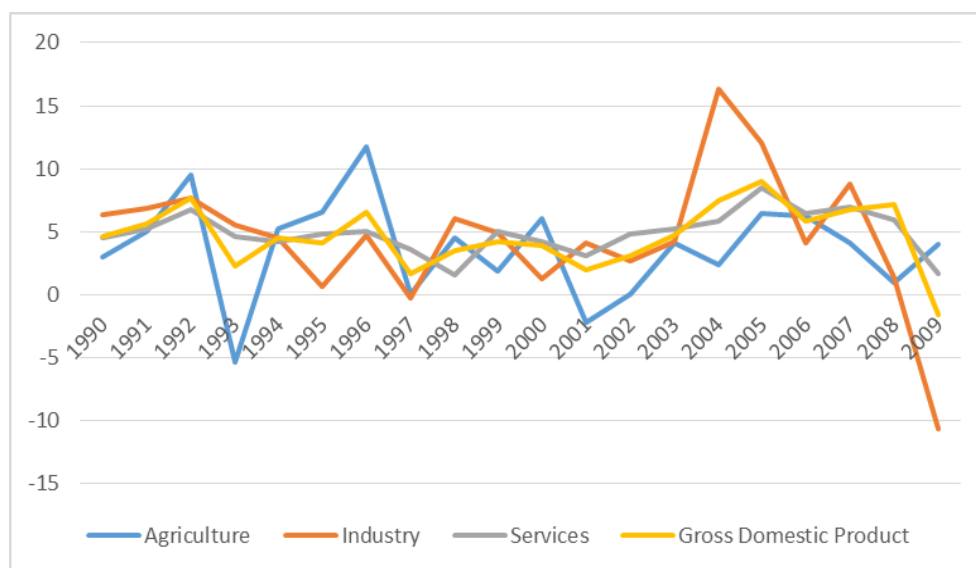
Employed women face wage-based discrimination, earning on average 34 percent less per hour than men between 1990 and 2009. The wage differential persists across education levels and even for the same work (Mahbub ul Haq Research Centre 2016, Majid 2016).

2.2 Growth trends and strategies

The disadvantage that women face in the labour market has positioned them differently from men with regard to the macro-economic trends and policies outlined in this sub-section.

Figure 4 depicts the overall and sectoral growth trends in GDP for Pakistan from 1990 to 2009 – our period of analysis.

Figure 4
Overall and Sectoral GDP Growth in Pakistan – 1990 to 2009 (%)



Source: SBP (various years)

² The underlying measurement of labour force participation is the so-called 'augmented' participation rate. They capture women's employment more adequately, in line with UN definitions. It is worth noting here that the statistics on labour force participation rates are based on surveys that only minimally cover the informal sector. Given the significant contribution of this sector in Pakistan's economy – only 27 percent of non-agricultural employment was formal in 2009 (Lim 2015: 21), and women's concentration in especially home-based work (Akhtar 2011), it is expected that the official estimates vastly underestimate women's participation in the labour force (Grünenfelder and Siegmann 2016: 3-4).

The average growth seen in the country in this time frame was fairly high – in excess of four percent overall, as well as for industry and services, and at 3.73 for agriculture. Yet, it was among the lowest for the region (Figure A1 in the appendix).

Moreover, we also observe considerable swings in both the overall and sectoral growth patterns for the country between 1990 and 2009 with sectors even seeing negative growth – the most recent of which occurred for industry in 2009 and may be best explained by considering both the international financial and oil crises as well as the domestic electricity crisis, and law and order situation. Interestingly, although industry witnessed the largest up- and down- swings between 2000 and 2009, the services sector saw the biggest gains in terms of average growth at 5.28 percent.

The few existing studies of the growth responsiveness of employment in Pakistan have revealed a relatively low reactivity in international comparison. In contrast to the global trend of declining growth elasticities of employment, Heintz' (2006: 8) estimates for Pakistan have been low, but rather stable from the 1960s to the mid-1990s. Kapsos' (2005: 35-36) estimates highlight three points vis-à-vis growth elasticities of employment for Pakistan: 1. The existence of a curvilinear time trend in elasticities between 1991 and 2003, with the highest elasticity being observed for the 1995-1999 period; 2. Higher employment elasticities for women relative to men, yet with a persistence of the inverted U-shape; and 3. Highest employment elasticities for agriculture.

The time trend can be attributed to increased trade openness, which came into full effect in the mid-1990s for Pakistan. Between 1994 and 1997 tariff rates and other taxes on international trade were cut substantially (WTO 1995), improving Pakistan's international positioning in labour-intensive export industries, such as the textile and garment sector. The high growth responsiveness of employment in agriculture that Kapsos (2005) identifies runs counter regional and global trends of structural economic change away from agriculture and into industry and services. He offers a range of explanations for relatively high female employment elasticities of growth (Kapsos 2005: 9): They may point to a process of catching up of female employment shares or to greater relative responsiveness of female employment to *both* economic growth and economic contraction. Furthermore, high female elasticities could also be rooted in gender-based occupational segregation, whereby women may tend to work in more labour-intensive sectors than men. For the case of South Asia as a region, he highlights the substantially larger initial gender gap in labour force participation and the subsequent catching-up by women in the labour market as a cause for the observed gender difference in employment intensities of growth.

3 Building a framework of analysis: is growth good for women's employment?

Conventional and feminist economics theory have understood and evaluated employment elasticities of growth 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 employment elasticities of growth as a social good. In a seminal paper based on US gross national product (GNP) and employment data between 1954-62, Okun (1962) addressed the question on how much the economy can produce under conditions of full employment. Hence, he saw unemployment as exogenous and real GDP as the dependent variable. The coefficient he defined corresponded to the rate of change of real output associated with a given change of the unemployment rate, focusing on an estimation of 'potential' GNP (Perugini and Signorelli 2007: 210). The empirical regularity that he found, later denoted as 'Okun's law', suggests that each percentage point decline in the unemployment rate is associated with a 3 percent increase in GNP. This implies that low levels of labour utilization depress productivity (Okun 1962: 6). Okun therefore interprets positive employment changes as beneficial for output growth.

The heterodox economics tradition, too, has established a positive relationship between growth and employment. Yet, it has interpreted the same association differently. Kaldor (1966) "claimed that output growth itself induced shifts in productivity and not the other way around" (Tejani 2016: 845-6). According to him, the "[...] faster the rate of growth of manufacturing output, the faster will be the rate of growth of labour productivity in manufacturing owing to static and dynamic economies of scale" (Thirlwall 1983: 345). He explained this as not just due to a specialization of labour and differentiation of products resulting from an expansion of the market, but also because of learning by doing on the part of labour (Tejani 2016: 846). Here, too, a greater responsiveness of employment with respect to output is seen as economically desirable as, according to the so-called Kaldor-Verdoorn effect, elastic labour supply enables endogenous increase in labour productivity through output growth (Tejani 2015: 3-4). This 'win-win' situation for both employment creation and productivity growth contrasts with the assumption of a trade-off between improvements in labour productivity and the growth of employment (Heintz 2006: 7).

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 employment elasticities of growth from a gender perspective. The first and basic step is to do away with the default assumption that the macro-economy operates in a gender-neutral way. Still, while some conclude that economic growth happens at the expense of women's position in

the labour market, others assume that that ‘good times are good for women’ (Dollar and Gatti 1999: 21).

Forsythe et al. (2000) cover these divergent perspectives when distinguishing three types of approaches to the relationship between gender inequalities and economic growth, namely, modernization/neo-classical perspectives, Boserup’s thesis, and critical feminist approaches, respectively. All three have direct implications for the understanding and evaluation of gendered employment elasticities of growth.

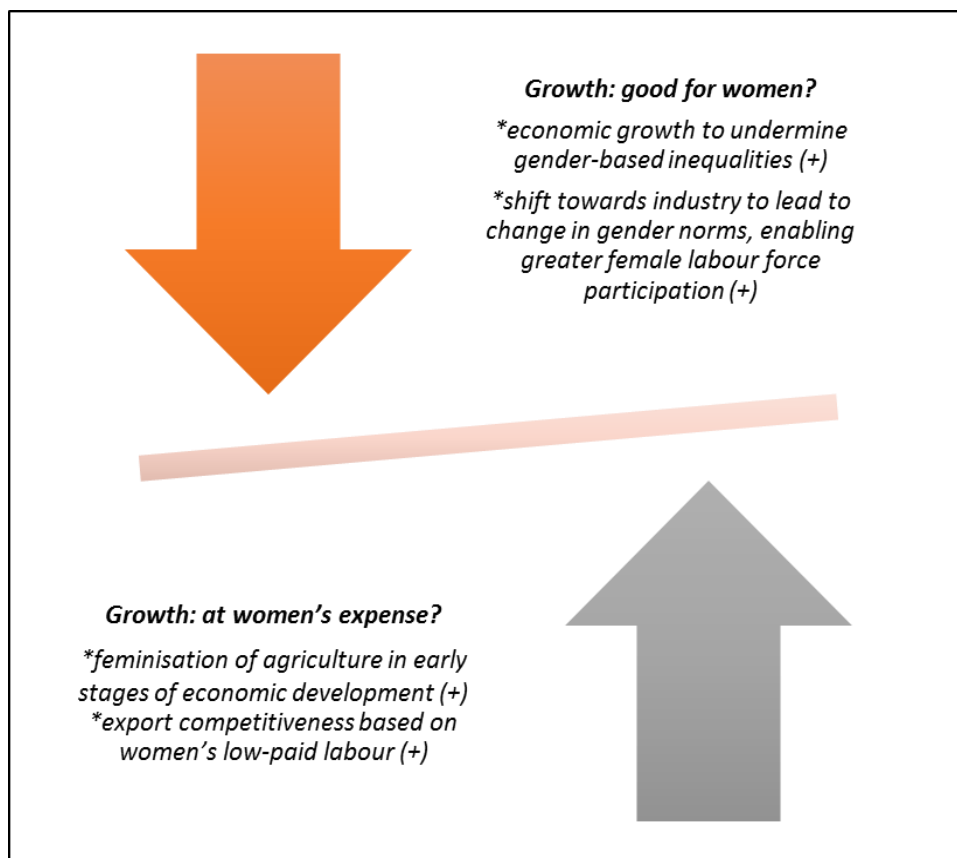
Based on Becker’s (1971) ‘The Economics of Discrimination’, among others, the modernization/neo-classical approach assumes economic growth to undermine gender inequalities, e.g. in employment and wages that result from discriminatory practices. According to Becker (1971: 15), a ‘taste for discrimination’ entails additional costs, such as the payment of higher wages to favoured groups, for those who engage in such practices. For those, who do not discriminate, it provides benefits, e.g., the opportunity to employ discriminated groups at relatively lower wages for employers willing to seize the opportunities generated by the discriminatory activities of competitors (Forsythe et al. 2000: 574-5). From this perspective, positive economic growth rates would thus be accompanied by a gradual convergence of female and male employment elasticities of growth.

Likewise based on an essentially neo-classical theoretical framework (Benería and Sen 1981: 282), Boserup (1970) argues that there is a curvilinear relationship between economic growth and women’s status that translates into changes in female employment. According to her, early stages of development are characterized by a feminization of agricultural employment. This is a result of the preferential recruitment of male workers in urban manufacturing. Such organization of labour markets is shaped by discriminatory practices that are embedded within prevailing institutional arrangements like colonial rule. Urbanization, however, associated with women’s greater access to education later leads to a change in gender norms, enabling female labour force participation and employment to rise. 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 female employment to growth.

Critical feminist economists, in contrast, have argued that women’s ‘comparative disadvantages’ in the labour 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 would imply a feminization of export-related employment, in particular, accompanied by a simultaneous entrenchment of the gender wage gap. Standing (1989) explained the absolute and relative growth in the use of female labour around the world during the period of globalization with the wide acceptance of lower pay for women workers:

“They are prepared to work for low wages for long work weeks, normally without agitating to join unions, and when their productivity declines after a few years of youthful diligence they are replaced by new cohorts” (Standing 1989: 1080). This is relevant in a context in which low labour costs have been a key factor in influencing product demand (Seguino and Were 2014: i33-34). For the period between 1975 and 1995, 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, female employment creation goes hand in hand with economic growth, in a context of significant export orientation and gender-based wage differentials.

Figure 5
Conceptual Framework for Understanding Gendered Employment Elasticities of Growth



Source: authors' design

These variegated understandings of gendered employment responses to GDP growth have helped us to build the conceptual framework summarized in Figure 5. The plus signs reflect positive female employment elasticities of

growth hypothesized by the different theoretical contributions outlined above.³ Their evaluation in respect of women's empowerment, however, is not necessarily positive: When economic growth is associated with a less discriminatory environment and more gender-equal social norms, this clearly benefits women. Yet, output increases that go hand in hand with, e.g. precarious agricultural employment and entrenched gender wage inequalities are likely to take place at women's expense.

We explore the relevance of the dynamics summarized in Figure 5 for the context of Pakistan by translating our conceptual framework into an empirical model below.

4 Methods and data

We address our research questions in two steps. As a first step, we calculate and compare female and male employment elasticities of growth for the period between 1990 and 2009. Subsequently, informed by the above framework, we analyse the resulting gendered elasticities and their differences.

Kapsos (2005: 2-3) distinguishes two common approaches to estimate employment elasticities of growth, namely arc and point elasticities. For the calculation of arc elasticities, the percentage change in employment between two periods is divided by the percentage change in output, while point elasticities are estimated through a log-linear regression model.

We calculate arc elasticities as follows:

$$(1) \varepsilon_{ijk} = \frac{[E_{ijk} - E_{i-1,jk}] / E_{i-1,jk}}{[Y_{ik} - Y_{i-1,k}] / Y_{i-1,k}}$$

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 . Since the main nationally available source for labour statistics, the Labour Force Survey (LFS), has data gaps for the 1990-2009 period, we base our calculation on the closest preceding year available. Sectoral GDP data have been obtained from the SBP. They have been deflated with 1980 as the base year. This calculation resulted in 13 observations each per sector - agriculture, industry, and services – and gender – female and male.

The computation of arc elasticities is simple, yet, year-on-year values tend to exhibit a great deal of instability. Acknowledging that the choice of a particular method is often dictated by the availability of data, Islam (2004: 5) therefore advises to use the econometric method whenever required time series data are available in order to avoid problems caused by data fluctuations. For the comparison of female and male employment elasticities of growth, we therefore also calculate gendered point elasticities for three periods, namely, 1991-7, 1999-2005, and 2005-9, for agriculture, industry, and services.

³ A minus sign refers to a negative female elasticity.

Following Kapsos (2005), our point elasticities are estimated as:

$$(2) \ln E_{ijk} = \alpha + \beta \ln Y_{ik} + u_{ik}$$

where β_{jk} is the sectoral, gendered point elasticity, E_{ijk} , i, j, k , and Y_{ik} are as described above, and u_{ik} is a random error term.

Beyond the calculation and comparison of these gendered, sectoral point elasticities, we analyse the link between these and macro-economic variables highlighted in our conceptual framework as drivers of women's employment as well as inequality indicators through multivariate regression analysis. Gender- and sector-specific elasticities therefore become dependent variables in the estimated models. Pooling these gendered, sectoral estimates adds degrees of freedom to our statistical analysis. It is important to note that the dependent variable in the regression analysis are the gendered, sectoral arc elasticities as described in (1) in order to generate sufficient observations.

In our explanatory model, exports are assumed to be associated with labour-intensive development and female-intensive employment. In line with critical feminist economics perspectives outlined above and earlier empirical studies (e.g. Anderson and Braunstein 2013⁴, Kapsos 2005), this is expected to increase female employment elasticity of growth in industry in particular. Industrial upgrading (U) may lead to the reverse process. This is consistent with critical feminist approaches but also possibly with initial stages of Boserup's model. In contrast to the labour-intensive development underlying Standing's (1989) hypothesis of 'global feminization through flexible labour', Anderson and Braunstein (2013: 272) assume industrial upgrading to decrease female elasticity in industrial employment, in particular, and lead to preferential employment for men. Since exports as a share of GDP lumps together several sector-specific mechanisms, we focus our attention on upgrading as proxied by the share of high technology exports in manufactured exports in our regression analysis.

As a measure of gender-based inequality we also include the average female to male ratio in real hourly wages in our model (W). This is based on the possibility of a macro-economic competitive advantage based on women's disadvantaged economic position that critical feminist economists have identified.

Pattanaik and Nayak (2014: 140) argue that the relationship between output and employment is affected, among others, by the quality of human capital. Better education may enhance labour productivity and as a result growth. From a gender perspective, this is also relevant in Boserup's (1970) model. It assumes that gender differences in education mediate women and men's respective access to employment in different stages of economic development. Based on that, we hypothesize that high human capital may increase the gender-specific employment elasticity of growth (Pattanaik and Nayak 2014: 142). We therefore include a variable that proxies gendered

⁴ Anderson and Braunstein (2013) use a different proxy, though, namely current account balance as percentage share of GDP.

human capital (HC). It is measured as the percentage share of female or male literacy of female or male persons aged 10 years and older, respectively.

While earlier studies (Anderson and Braunstein 2013, Seguino and Were 2014, Tejani 2016) focused on the role of macro-economic structures, Kabeer (2016) emphasizes that growth effects on gendered employment are mediated by local structures of patriarchy. 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, in life-cycle as well as by their religious affiliation (Grünenfelder and Siegmann 2016: 2). It has not been possible, however, to further disaggregate growth figures, e.g. 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 in section 2 (also see e.g. Mahbub ul Haq Research Centre 2016: 63-104, UN Women 2016). Therefore, in addition to macro-economic variables that are assumed to influence gendered employment elasticities, in model 2, we have also included modelled estimates of maternal mortality ratio per 100,000 live births as a measure of gender equality (GE). As highlighted in section 2, we consider the high incidence of maternal mortality in Pakistan an expression of women's inferior status in Pakistani society.

Our analytical framework highlights the relevance of a sectoral perspective on employment elasticities of growth. We therefore include sectoral controls (C) for agriculture and industry (with the services sector as reference). These binary variables take a value of one if the elasticity is of agriculture or the industrial sector, respectively. Finally, the discussion on the dependent variable highlights that the employment experience for men versus women varies depending not just on the sector but also on the time-period. Keeping this in mind we introduce a phase dummy (D) which takes a value for one for the period 2003 to 2009 (inclusive). These years mark a significant departure from the earlier time-frame in terms of the degree of volatility in growth and employment (Figure 4). This is likely to be driven by the food, oil, security, and economic crises that hit the country at the time.

Our resulting regression model is:

$$(3) \varepsilon_{ijk} = \gamma_0 + \gamma_1 X_i + \gamma_2 U_i + \gamma_3 W_i + \gamma_4 HC_{ij} + \gamma_5 GE_i + \gamma_6 C + \gamma_7 D + \mu_{ijk}$$

where ε , i , j and k are as described above and μ is a random error term.

Time series for most explanatory data were downloaded from the World Bank's World Development Indicators (World Bank 2016a). For some of these, there were gaps in the data but were available in other surveys. For instance, for literacy levels, we use rates from the LFS. Wage data have been calculated on the basis of the Pakistan LFS. The mean and standard deviation (SD) for our explanatory variables are provided in Table 1 below.

Table 1
Summary Statistics Explanatory Variables - 1990 to 2009

Variable	Mean (SD)
High technology exports (% of manufactured exports)	0.64 (0.65)
Female literacy (%)	35.41 (6.64)
Male literacy (%)	60.96 (5.63)
Female/male wage ratio	0.65 (0.10)
Maternal mortality (per 100,000 live births)	315.19 (74.43)

Sources: World Bank (2016a), PBS (various years)

On average, less than one percent of the value of manufacturing exports has come from high technology exports. Having said that, these exports have seen a steep increase from 0.07 to 1.71 percent in the period between 1990 and 2009. The gap between female and male literacy can be gauged from the substantially lower female averages of around 35 percent of all women ten years and older, compared to nearly 61 percent for men. As shown in section 2, both gender equality in literacy and MMR improved significantly over the period of analysis. The gender wage ratio average reminds us that even the hourly wage gap between female and male wages has remained wide, with women earning only 65 percent of males' average wages. This mean gap over the two decades under consideration is the same as the gap in the 2014/15 LFS.

Given the highly differentiated manner in which men and women's employment responds to growth and contraction, as well as the gendered nature of Pakistan's economic and cultural environment we estimate gender-specific models. We use a seemingly unrelated regression (SUR) OLS-based technique as the error terms in the male and female elasticity regressions are likely to be correlated, something that SUR takes into account. The results of our SUR estimation are presented in Table 3 in section 5, and have to be interpreted in the context of the dynamics of sectoral output growth presented in the discussion on the dependent variable above.

5 Explaining gendered employment responses to growth

5.1 Comparing gendered employment elasticities of growth

For a comparison of gendered and sectoral elasticities of growth, we focus our discussion on the point rather than the arc elasticities as the former are not subject to the fluctuations that are a feature of the latter. We present these point elasticities in Table 2 below.

A look at Table 2 shows that the responses of female and male employment to sectoral output growth in Pakistan were markedly different between 1990 and 2009, and that these differences varied by sector. In some cases, the responses led to a narrowing of gender differences in sectoral employment. In others, the existing gaps widened.

Table 2
Sectoral Output Growth and 5-year Gendered Sectoral Employment Elasticities in Pakistan - 1991 to 2009

	Female elasticity	Male elasticity	Output growth (%)	Female/male elasticity
Agriculture (1991-1997)	0.27	0.44	4.96	0.61
Agriculture (1999-2005)	2.26	0.76	1.19	2.95
Agriculture (2005-2009)	0.42	0.34	6.22	1.25
Industry (1991-1997)	-1.58	0.94	2.74	-1.69
Industry (1999-2005)	1.27	0.56	9.53	2.27
Industry (2005-2009)	-1.47	-0.26	0.64	5.69
Services (1991-1997)	1.78	1.31	4.3	1.36
Services (1999-2005)	0.25	0.81	6.98	0.31
Services (2005-2009)	-0.88	0.32	5.17	-2.75

Sources: authors' calculation based on PBS (various years) and SBP (various years)

Note: **Bold** black figures indicate a narrowing of gender inequalities in sectoral employment, **bold red** figures indicate a process of widening gender gaps in sectoral employment through absolute and relative employment losses for women.

Agriculture

Our point estimates of both female and male agricultural employment elasticities of growth are all positive. For women's agricultural employment, they range from 0.27 for the period 1991-97 to a high of 2.26 for the period 1999-2005 and back to 0.42 during the period of 2005-9. Male agricultural employment point elasticities range from 0.44 for the period of 1991-7 to 0.76 for the period of 1999-2005 and back to a relatively inelastic 0.34 during the period of 2005-9⁵.

A ratio of female to male elasticities larger than 1 in the context of positive GDP and employment growth can be interpreted as a process of catching up of female employment (Kapsos 2005: 9, Seguino and Were 2014: i34). In Pakistan, this was the case over a longer period (1999-2009) for agriculture

⁵ With an 'elastic response', we refer to an $\epsilon \geq 1$, while 'moderately elastic' ranges between 0.5-1. An 'inelastic response' addresses a value of $\epsilon = 0 - < 0.5$.

alone, with ratios of female/male elasticities of 2.95 and 1.25 (Table 2). During our period of analysis, women's share in total agricultural employment rose from 47.6 to 51.4 percent. Yet, rather than catching up, this seems to indicate a process of feminization of agriculture, leaving women agricultural workers behind rather than them taking over.

This increasing share of women's agricultural employment is likely to be mediated by a gender order that constrains women's mobility and discourages their employment outside the homestead. As a result, women's migration to urban areas for employment is rare. In 2009/10, only 2 percent of women's inter-provincial and inter-district migrations were employment-related, whereas this share was 35 percent for men (PBS 2011). Similar to Boserup's (1970) observations, this can be associated with male workers being pulled towards opportunities in more productive sectors. The 1990s saw a take-off of export-oriented manufacturing that initially pulled more men into industrial employment.

The extreme drought between 1998 and 2002, which reached its peak in 2000-01, might have served as a push factor for women's take-up of agricultural employment. Between 1999 and 2001, both female and male agricultural workers experienced absolute employment losses. After the climax of the drought, women's absolute employment, but also their share in total agricultural employment rose steadily until it peaked at 52 percent in 2006. From the perspective of this natural disaster and its effects on employment, the elastic response of female agricultural employment in that period can be interpreted as an 'added worker effect' or distress sale of labour in response to agrarian crisis. The added worker effect refers to the take-up of jobs by so-called secondary workers, often women and young people, during recession, compensating for employment and/or earnings of other household members (Borjas 2010: 70-71). Besides, the increased entry of female household members might have been triggered by resultant male emigration for urban employment. Therefore, we do not interpret this feminization of agriculture as a welcome process of narrowing gender gaps in employment: "The dominance of low- and unpaid as well as seasonal agricultural employment for women in Pakistan implies that, in terms of widening the scope of strategic life choices or empowerment, they are likely to gain least from their work" (Siegmann and Majid 2014: 8).

Industry

In industry, female employment elasticities of growth are elastic, but very volatile. They swing between a strongly negative reaction of -1.58 to positive sectoral output growth for the period of 1991-7 to an elastic positive response of 1.27 for the period of 1999-2005 and back to -1.47 during the crisis period of 2005-9. Male elasticities are positive during the period of 1991-2005, ranging from a moderately elastic 0.94 for the period of 1991-7 to a less responsive 0.56 for the period of 1999-2005. Similar to the female response, male employment elasticities became negative (-0.26) during 1999-2005. Yet, while

women experienced absolute employment losses in that period, male industrial employment slightly increased.

The absolute decline in female industrial employment during a period of moderate industrial growth between 1991-97 is consistent with Boserup's (1970) modernist perspective of women's role in economic development. The negative response could be related to preferential recruitment of men in early phases of export-oriented development. However, it could also be explained by informalization of industrial employment that affects women's jobs, in particular. As mentioned above, increases e.g. in female-dominated industrial homework are unlikely to show up in the LFS.

The period of high industrial output growth 1999-2005 was associated with employment gains for both women and men, but relatively higher female employment growth, leading to a narrowing of the gender gap in industrial employment. These dynamics took place while Pakistan's most important export sector - textile and clothing manufacturing - prepared for a quantum leap in liberalization of trade in textiles and clothes under the World Trade Organization's (WTO's) Agreement on Textiles and Clothing (ATC) (Siegmann 2005). Siegmann's (2007) study mirrors this trend. It also shows that in 2004, during the year before full liberalization under the ATC, textile and clothing exporters faced a price squeeze that they probably compensated for by increasing export volumes. From a critical feminist economics perspective, Siegmann (2007: 10-12) interprets the accompanying preferential employment of women workers as using women's disadvantage in the labour market as an advantage for exporters. Their lower average wages of around 70 percent of male hourly wages during that period possibly enabled exporters to lower labour costs, that way compensating for the downward pressure on export prices in the more competitive climate after the ATC expiry. The 2006 amendment to the Factories Act 1934 that allows women's industrial work in night shifts up to 10pm, provided that the employer arranges for transport facilities can be seen as a flanking legal change. Ali and Knox (2008: 45) point out, however, that the condition of providing transport facilities by the employer will increase the expenses of the firm or organization, discouraging employers from employing female industrial workers.

The trend of narrowing gender gaps in industrial employment was reversed during the subsequent crisis of industrial production from 2005-2009. Low output growth of 0.64 percent per annum during this period triggered by the drop in foreign demand coincided with – possibly more influential - domestic factors that troubled export sectors, such as power shortages and security concerns. As a compound result of the ATC expiry in 2005, ripple effects of the financial crisis since 2008 and other domestic and external factors led to a closure of a significant number of knitwear units and spinning mills, affecting small or informal units in particular (Siegmann 2011: 190). The high ratio of female/male employment elasticity of sectoral growth means women were more affected by dismissals, bearing the brunt of the recession (Siegmann and Majid 2014: 10).

Overall, the stronger, but unsystematic response of women's industrial employment to the economic cycle may be rooted in their marginalized status

in the labour 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 bread-winners. Given that in Pakistan, too, women's earnings are often viewed as supplementary while men are considered to have a right to regular employment (Seguino and Grown 2006: 1086), in case of recessions the formal sector is likely to see employers laying-off women first (Siegmann and Majid 2014: 11).

Services

In the services sector, overall, robust annual growth rates of 4 to 7 percent during the past two decades were accompanied by an initial period of slightly narrowing gender gaps in employment, followed by further widening since 1999. Male services employment responded positively to sectoral output growth during the period 1991-2009, yet, this responsiveness has declined over the course of those two decades. Whereas a one percent increase in services output was associated with a 1.31 percent increase in male services employment during the period of 1991-1997, this plunged to a 0.32 percent response during 2005-9.

Women's employment's responsiveness to services output growth followed a similar pattern between 1991-2005. Whereas a one percent increase in services output was associated with an elastic 1.78 percent increase in female services employment during the period of 1991-1997, this dropped to a rather unresponsive 0.25 percent response during 1999-2005. From that year onward, the responsiveness of female services employment increases again, yet, in a counter-cyclical manner (-0.88).

One could hypothesize that these responses are associated with liberalization of the services sector since under Musharraf's dictatorship. It resulted in the massive increase in services sector foreign direct investment (FDI), especially in banking and telecommunication (SBP 2015: 783-4). Many related jobs, e.g. in banks and telecommunication franchising, favour male over female employment creation.

Overall, 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 is rooted in both the gender order as well as the policy environment.

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 highlighted above.

5.2 Explaining gendered employment elasticities of growth

Our estimates of gendered sectoral employment elasticities of growth are displayed in Table 3. As detailed in section 4, we estimate two models. Model 2 differs from model 1 only in its additional control for maternal mortality rates.

Table 3
SUR Estimates of Gendered Employment Elasticities of Growth
in Pakistan - 1990 to 2009

	Model 1		Model 2	
	Female elasticity	Male elasticity	Female elasticity	Male elasticity
High technology exports (%)	-5.564 (4.641)	-3.082* (1.719)	-3.821 (4.783)	-3.127* (1.824)
Female/male wage ratio	0.314** (0.133)	0.016 (0.043)	0.289** (0.132)	0.016 (0.043)
Female literacy (%)	1.175*** (0.402)		-0.097 (1.149)	
Male literacy (%)		0.357** (0.177)		0.377 (0.307)
Agriculture dummy	0.992 (1.378)	-0.057 (0.428)	0.992 (1.353)	-0.057 (0.428)
Industry dummy	-1.823 (1.378)	-0.011 (0.428)	-1.823 (1.353)	-0.011 (0.428)
Phase Dummy (2003-9)	-4.75 (4.624)	0.59 (1.46)	-5.405 (4.574)	0.626 (1.526)
Maternal mortality rate			-0.113 (0.096)	0.002 (0.018)
Constant	-55.664*** (19.205)	-20.305* (12.14)	24.938 (71.037)	-21.993 (23.994)
Observations	36	36	36	36
R-squared	0.28	0.165	0.306	0.165

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Source: authors' calculations based on World Bank (2016a), PBS (various years)

Overall, the results confirm some theoretical predictions summarized in section 3, and yield surprising results regarding others. This is especially the case regarding the role of wage equality.

In line with the secular trend towards productivity- rather than employment-driven economic growth that Heintz (2006) observes, the share of high-tech exports in overall manufacturing exports is negatively associated with both female and male elasticities across both models. This finding reflects the results of Anderson and Braunstein's (2013) cross-country study. Technological upgrading might imply automatization that affects both female and male employment negatively. Comparatively lower levels of female employment in Pakistan may drive the higher coefficient for female elasticities. Anderson and Braunstein (2013: 272) find lower female labour force participation to be associated with higher employment elasticities "[...] as unused opportunities for women to enter the labour market are greater". However, the stronger association with female compared to male elasticities is also consistent with the critical feminist economics' hypothesis of a 'comparative economic advantage of women's comparative disadvantage' for

labour-intensive exports. While exporters of labour-intensive goods may benefit from preferential recruitment of women workers because of the cost-reducing gender wage gap, industrial upgrading would, of course, have the reverse effect. At the same time, it is worth noting that the effect of the variable is significant only in the case of male elasticities, and the low share of high technology exports in total manufactured exports as indicated in Table 1. Hence, despite being small, the sector is likely to be dominated by men, which is why it is only male elasticities that see the statistically significant effect.

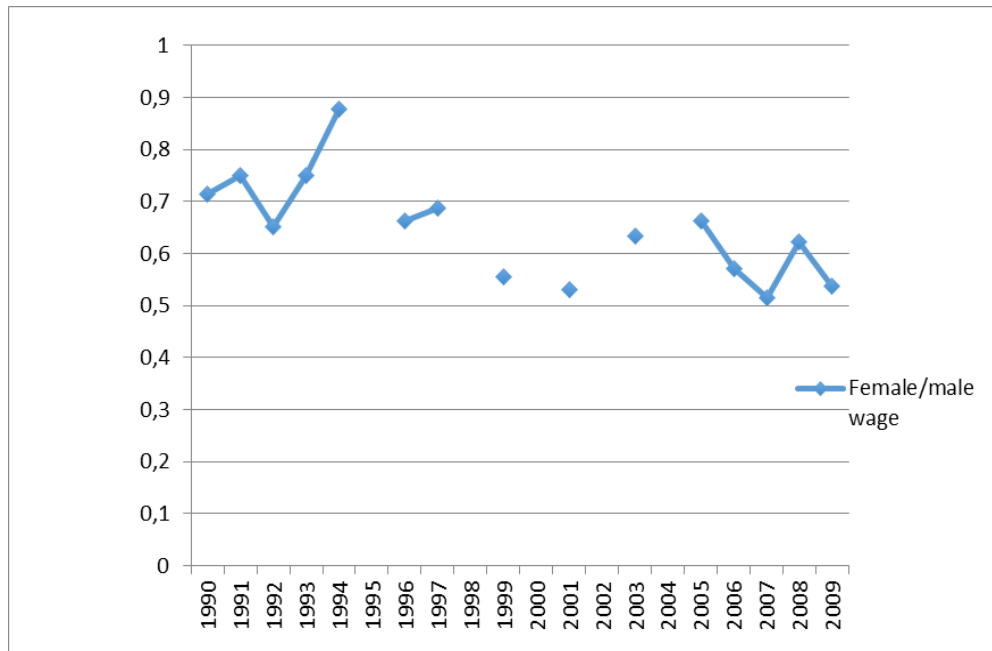
Gender wage equality is associated positively with women's employment responses to growth in both models. This result counters critical feminist economists' argument that the gender wage gap supports females' entry into employment in the context of labour-intensive export production. However, once we focus on the industrial sector alone, the picture changes. Here, the moderate, negative Pearson correlation coefficient of female employment and hourly real wage of -0.32 and the reverse association for male industrial workers (0.41) supports the theoretical argument. Yet, the regression result has to be read against the decreasing trend in the female to male ratio in hourly real wages in Pakistan during the past two decades that has largely been driven by the dynamics in the industrial sector (Figure 6)⁶. From this perspective, the coefficient indicates that the deterioration of the gender wage ratio has gone hand in hand with less responsiveness of female employment to growth, but also for men.

The coefficients for the proxies for human capital i.e. the female and male literacy rates support the optimistic assumption of market expanding productivity increases, leading to positive feedback loops on employment in model 1. Here, both female and male literacy display a statistically significant correlation with the gendered employment elasticities of growth. Moreover, not only do female elasticities increase with improvements in female literacy, but the coefficient value for female literacy is larger than that for male. This is likely to be reflective of the wide gap in gender literacy rates and suggests that an improvement in women's literacy may well be associated with an expansion in their employment in cases of positive growth.

The observed role of literacy in our models supports Aslam and Kingdon's (2012) argument that female education can be a path to gender equality in the labour market. Yet, this positive influence of literacy declines upon the inclusion of our proxy for the gender order i.e. the maternal mortality rate – not only does it remove the statistical significance for both female and male elasticities, it greatly reduces the variable's economic role in the estimation of female elasticities. In fact, the variable's sign becomes negative.

⁶ Over the same period, female to male wage ratios slightly improved in agriculture from 62 percent in 1990 to 64 percent in 2009. In services, they oscillated between 92 (1990) and 82 percent (2009). They peaked at 170 percent in 2005 (Table A1 in the Appendix).

Figure 6
Female to Male Ratio in Hourly Real Wages in Pakistan - 1990 to 2009



Source: PBS (various years)

Overall, neither one of the sectoral dummies is statistically significant in both models for female *and* male elasticities. The variable's negative sign indicates a lower responsiveness of industrial employment compared to gendered employment in the services sector for female industrial workers. Not only is average female employment in services for 1990-2009 higher for women compared to their employment in industry (Figure 3), but we see much wider trends in women's employment responsiveness to growth for the case of services. Both these factors help explain the negative effect observed for the case of the industry dummy. Industry employment, more so than agriculture or services employment – especially given that services as it is defined in the LFS includes very diverse sub-sectors, from relatively well-paid employment, e.g. in financial services, to low-paid domestic work – is a more accurate metric of women's status in the labour market.

6 Conclusions

This paper considers the inclusivity of Pakistan's growth by analysing gendered employment responsiveness to GDP growth in agriculture, industry, and services for the period 1990 to 2009. Estimating point elasticities following Kapsos (2005), we find that responsiveness varies across the genders with the results highlighting the secondary status of women in Pakistan's labour market. Where we do find positive employment responsiveness for women such as in the case of agriculture, we find that it is indicative of a feminization of the sector. Finally, our results of the point elasticities also suggest that the external policy environment matters.

Thus, while we do find evidence that growth has been good for women's employment, the results are mixed and highlight that the mechanisms through which growth translates into employment must be studied.

We turn to exploring these mechanisms in our regression analysis. In particular, we analyse the link between gendered sectoral point elasticities with drivers that have been identified within the literature such as industrial upgrading and human capital. But, we also try and capture the underlying gender order through a proxy, namely the maternal mortality ratio. Our results highlight the negative role of industrial upgrading and the positive link with human capital. At the same time, we find that the gender order works through its interaction with other variables especially industrial employment, and that too only for women, such that responsiveness to growth in the manufacturing sector is lower than that in the services.

Hence, our regression results confirm most of the predictions laid out in the literature. And while the positive role of human capital variables is heartening, especially in light of the increased push by the government of Pakistan to improve school enrolment in recent years, such favourable results vis-à-vis employment must be approached with caution.

Although this paper as well as our earlier work has laid out the positive linkages between employment and women's empowerment and it is indeed "[...] crucial to get the employment side of the macroeconomic picture right, success in this regard by no means automatically translates into other favourable outcomes, such as poverty alleviation" (Kapsos 2005: 6). Similarly, while Galor and Weil (2000) argue for a positive feedback loop between women's employment, reduced wage inequality, and lower fertility rates, evidence shows that greater labour force participation does not always translate into a lower reproductive burden for women, and in fact can result in lower overall welfare due to greater time poverty (us Saqib and Arif 2012). In this regard, it is clear that the social norms defining gender roles and therefore the social construct within which the labour market operates matters.

Indeed, in order for growth to translate into higher labour force participation by women and for women's status in the workforce to improve from that of secondary workers, we must look at the acceptable spheres of activities envisaged for women within the national narrative. Here, the role of school curricula and that of the media in perpetuating gender stereotypes vis-à-vis work becomes important. Similarly, the translation of employment into improved outcomes for women including their empowerment requires a re-definition of what constitutes 'productive' work and involves a greater appreciation of women's role in the care economy.

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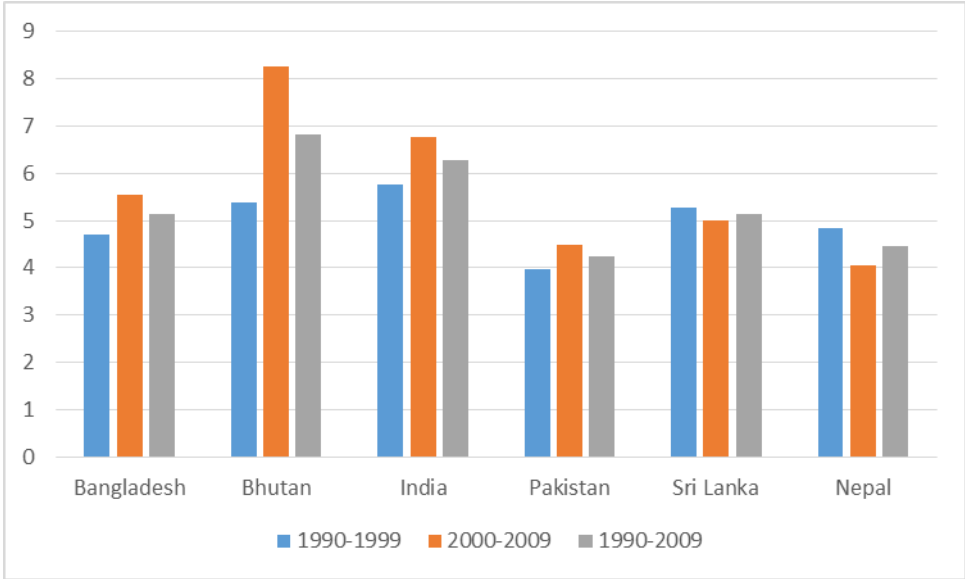
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Appendices

Figure A1
Average GDP Growth Trends in South Asia - 1990 to 2009 (%)



Source: World Bank (2016a)

Table A1
Female to Male Hourly Real Wages by Sector in Pakistan
– 1990 to 2009

	Agriculture	Industry	Services
1990	0.62	0.84	0.92
1991	0.64	0.85	1.15
1992	0.60	0.72	0.89
1993	0.64	0.85	1.15
1994	0.77	0.88	0.97
1995			
1996	0.68	0.88	0.67
1997	0.76	0.69	0.91
1998			
1999	0.60	0.70	0.95
2000			
2001	0.54	0.68	1.00
2002			
2003	0.65	0.78	1.03
2004			
2005	0.56	0.70	1.70
2006	0.45	0.63	1.63
2007	0.55	0.57	0.95
2008	0.71	0.57	1.31
2009	0.64	0.52	0.82

Source: PBS (various years)