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Understanding Saudi Private Sector Employment And Unemployment

Farah Hani, Michael Lopesciolo

CID Research Fellow and Graduate Student

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Understanding Saudi Private Sector Employment And Unemployment

Farah Hani[1], Michael Lopesciolo[2]

Working Paper, March 2021

Abstract:

This paper analyzes the changes in Saudi employment and unemployment between 2009 and 2018 and argues that a supply-demand skill mismatch exacerbated by insufficient job creation, and prevalent Saudi preferences and beliefs about employment underpin the high unemployment problem that coexists with low Saudi employment in the private sector in the country.

Keywords: Saudi Arabia, Employment, Unemployment, Occupations, Jobs

JEL Codes: J21, J23, J24

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We thank Ricardo Hausmann, Anders Jensen, Michael Walton and colleagues at the Growth Lab for their valuable comments on this work.

[1] Research Fellow at Harvard's Center for International Development – the Growth Lab; MPA/ID 2019
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Executive Summary

Why does unemployment persist in Saudi Arabia, a country with labor shortages that had compelled the private sector to recruit workers from abroad?

Unemployment is a top policy priority for Saudi Arabia. Saudi Arabia has been facing the challenge of high unemployment amid low private sector employment of its citizens for over two decades. The unemployment rate in Saudi Arabia has hovered around 12% since at least 2001; with youth and female unemployment at much higher level; ~27% and 33%, respectively, in 2017. In the same year, only 18.6% of private sector jobs in Saudi Arabia were held by Saudi nationals.

This paper follows a problem-driven diagnostic approach to characterize the phenomenon of high Saudi unemployment, and its coexistence with low employment levels of Saudis in the private sector. We analyze the most important trends related to Saudi employment and unemployment in the private sector, including the cost of hiring Saudi versus expatriate workers, to assess the factors prohibiting greater Saudi employment.

We observe that while Saudis have become more educated, unemployment among this group is on the rise, and it is driven by educated youth – rather than educated and experienced workers. By 2018, high unemployment has become a problem among women with a college degree, followed by men with a college degree. This has shifted from the situation in 2009, where the numbers of unemployed Saudi men and women were comparable. The increase in female labor participation over the past decade happened at a faster pace than female employment in the private sector. This is similar to the increase in supply of educated youth happening at a faster pace than youth employment. Simultaneously, we observe significant wage gaps between men and women across industries and occupations.

From a cost perspective, we provide evidence suggesting that the cost or price to hiring Saudi workers remains high compared to expatriate workers. Not only does wage data depict Saudis as costlier than expatriates across the skill distribution, we also find the de facto minimum wage to be binding. The minimum wage has been hiked over the past decade to encourage Saudis to take up private employment. While Saudi workers are more expensive, low Saudi job tenure is an additional notable concern for integration into the private sector. Interestingly, we provide evidence suggesting fixed costs associated with hiring women. This could potentially affect firms' decisions to hire Saudi women.

Based on these symptoms, we conclude high unemployment persists in Saudi Arabia for two main reasons. The first is, a supply-demand skill mismatch, exacerbated by insufficient job creation (relative to increasing Saudi labor supply). This is evident due to significant concentration of new jobs in low-skilled labor-intensive sectors, potentially unattractive to educated men and women. The second is, Saudi workers' preferences and beliefs on what is considered to be suitable work, generating a high reservation wage among Saudi workers. This is evident due to low Saudi tenure, and reasons given as to why Saudi workers leave their employment.

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1. Introduction

Saudi Arabia has been facing the challenge of high unemployment amid low private sector participation of its citizens for over two decades. The unemployment rate in Saudi Arabia, high and stagnant, has hovered around 12% since at least 2001; with youth and female unemployment at much higher level; ~27% and 33%, respectively, in 2017.[3] At the same time, only 18.6% of private sector jobs in Saudi Arabia were held by Saudi nationals in 2017. The rest were held by expatriates, who receive lower pay and thinner benefits.[4]

This relatively low private sector employment of Saudi nationals resulted in large part from Saudi Arabia's oil wealth which facilitated widespread and lucrative public sector jobs. A full 42% of employed Saudis worked directly for the government in 2017. These jobs are widely desired for their high pay and lenient demands. Expatriates, on the other hand, hold most positions in the private sector, and have long been favored given significant wage gaps; the government's National Transformation Plan reports the ratio of Saudi to expatriate cost of labor at 400%. In 2016, for instance, the median monthly wage for expatriates was only 900 SAR (US$240), compared to around 3000 SAR (US$800) for Saudis.

Confounding demographic, political, and fiscal dynamics have made this situation a top concern for Saudi policymakers. First, according to population data published by the Saudi General Authority for Statistics, 59% of Saudi Arabia's population was under 30 years old in 2016. Second, the 2015 collapse of oil prices has added a fiscal dimension to the problem: The Saudi government's wage bill reached 45% of total expenditure in 2016, with a fiscal deficit of 17% of GDP (IMF 2018a). This has constrained its ability to create swaths of public sector jobs for young college graduates, 250,000 of whom are exiting university annually (Diwan 2018).

The above factors have compelled Saudi policymakers to actively intervene in the management of the labor market since 2011, to increase Saudi participation in the private sector. The Saudi government, similar to other Gulf countries, has always sought to integrate its talent in the private sector, but the year 2011 marks a distinct turn in its approach to the private sector. More specifically, the government moved to pursuing a series of price and quantity policies, which aim to increase the percentage of private sector jobs held by nationals, in an attempt to manage the unemployment problem. Most distinctively, the lax style that has allowed the private sector to freely hire expatriates without restrictions and costs came to an end, as the government imposed binding quota restrictions (Nitaqat program)[5] and expatriate levy fees, thus "taxing" the employment of expat labor to motivate the private sector to absorb Saudi labor.

[3] The Labor Market Bulletin Methodology from the General Authority for Statistics defines an unemployed individual as someone greater than 15-years old who was workless in the week prior to having their household visited as part of the Labor Force Survey, while also having looked for a job in the past four weeks (and is thus considered economically active). Given that unemployment among expatriates is negligible, only unemployment rates among nationals are considered throughout this paper.

[4] Data for this section taken from the Labor Force Survey (GASTAT) (2017) and refers to values from 2017 unless otherwise specified.

[5] Nitaqat - the Saudi nationalization (Saudization) program is a minimum quota system mandating Saudi participation in the private sector at the firm size-industry level

These policy efforts, particularly Nitaqat, have improved the labor market outcomes of Saudi workers – if measured as increased participation and employment – but have also come at a significant cost to businesses, which therefore brings about questions on their effectiveness at nudging the labor market towards the desired equilibrium in the long-run. Saudi employment in the private sector accelerated after 2011, the year during which Nitaqat program was launched. In 2017, 1.3 million more Saudis were employed than in 2011, and only 20% of those additions were in the public sector (Labor Force Surveys). The private sector Saudization rate increased from 11% to 19% over the same period, representing a significant increase in total Saudi private sector employment. Yet, the 16-month period following the 2011 implementation of Nitaqat, for example, witnessed a spike in the rate of firm exit, from a pre-reform rate of 19% to 28%, representing nearly a million lost jobs (Peck 2017).

The tension between Saudi Arabia's short-term socio-economic goals and long-run diversification ambitions makes unemployment one of the most pressing priorities facing the country today. Understanding the dynamics behind unemployment and low Saudi employment in the private sector can inform future policy choices. In this paper, we aim to analyze the patterns of Saudi unemployment and employment in the private sector to explain a puzzling phenomenon: persistent unemployment which coexists with low private sector employment (*Figures 1 and 2*).

We follow a problem-driven, diagnostic approach to analyze the phenomenon. We start, in Section 2, by providing an overview of the Saudi economic model, to illustrate the symptoms of the labor market.

The analysis begins in Section 3 which examines employment and unemployment trends, at individual and sectoral levels. This section presents facts that are relevant to any labor market policy design in Saudi Arabia. We find that the composition of the employed and unemployed Saudis has shifted since 2009. In 2009, the numbers of unemployed men and women were comparable, and the employment of Saudi women in the private sector was modest. By 2018, the employment of both Saudi men and women has increased, but at the same time the supply of college-educated Saudis has increased at a faster pace than employment – making the unemployment problem worse. Additionally, Female labor force participation, especially among college-educated women – increased. The women entering the labor market are predominantly college-educated and over the past decade, college-educated women the largest group of unemployed Saudis, surpassing the quantities of unemployed men.

At the same time, we provide evidence suggesting that the cost or price to hiring Saudi workers remains high compared to expatriate workers. On one hand, despite the unemployment problem in Saudi Arabia and the increased supply of educated Saudi workers entering the labor market, the Saudi minimum wage (also the median wage) is increasing.[6] We present evidence of the Saudi, de facto, minimum wage being highly distortive, with the Saudi wage distribution bunching around

[6] In 2013, the minimum wage for a Saudi worker to count towards a firm's Nitaqat score changed from SAR 1,500 to SAR 3,000. By the end of year 2020, after this paper was completed, the new "de facto" minimum wage increased to SAR 4,000.

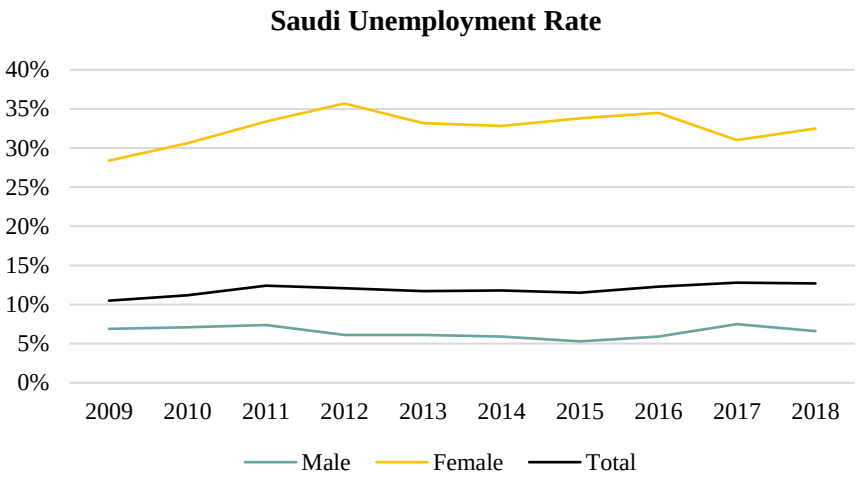
the minimum wage. On the other hand, we discuss job tenure where the mean tenure across the Saudi labor market equaled around 2.2 years in 2016 – a low average compared to other countries; for example, the figure in USA is 4 years, and European Union 10 years. While the tenure of both Saudi and immigrant workers is low, that of Saudi workers is consistently lower than that of expatriate workers across occupations. We argue this imposes further burden on employers. Finally, we find evidence suggesting upfront fixed costs associated with female unemployment, such as those required to prepare the workplace. These additional costs could constrain firms' ability to hire more women.

Section 4 goes beyond section 3 and asks why these employment and wage dynamics persist, thus keeping unemployment high and undermining private sector employment. We prioritize two main pillars that, we believe, answer this question. The first pillar is a supply-demand skill mismatch, exacerbated by insufficient job creation (relative to increasing Saudi labor supply). Observing job appearances over the past years reveals that 70% of job appearances between 2015 and 2016 were suitable for low- or very-low skilled workers. At the same time, between 2010 and 2016, Saudi entrants to the labor market were concentrated in a 2-3 primarily in clerical occupations. These imply that the majority of jobs appearing in the economy may not be suitable for the group of unemployed: increasing educated and increasingly women, and suitable jobs are not available at an adequate pace.

The second pillar we discuss is Saudi workers' socioeconomic beliefs and preferences related to work, generating a higher reservation wage among Saudi workers. In 2015, a Gallup survey asking Saudis about the sector they prefer to work in revealed that 78% of the unemployed preferred to work in the public sector. These preferences stem from the perceived probability of lucrative employment in the public sector and drive a reservation wage that, first, lead to less commitment to private sector employment – as revealed through the short tenure of Saudi workers. And second, Saudi workers' reservation wage in turn compels policymakers to ensure a relatively high minimum wage to encourage Saudis to take private sector jobs.

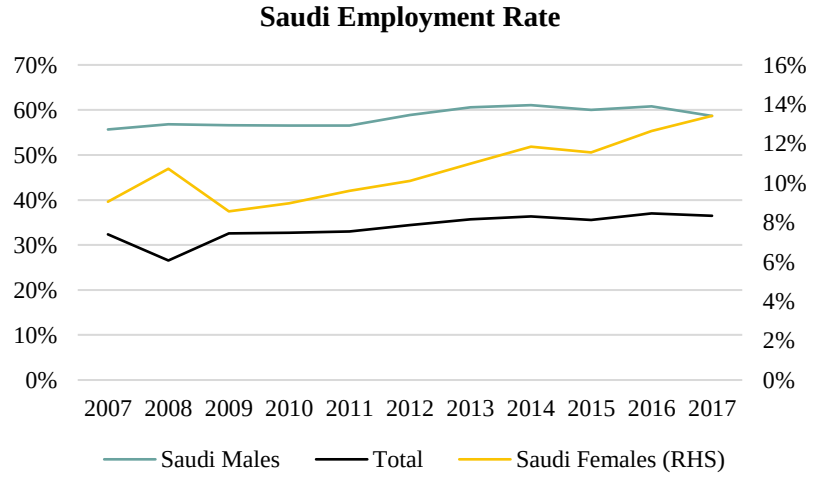
We conclude in Section 5, that the instruments put in place throughout the Saudization era were successful in increasing Saudi employment in the private sector over the past decade. Yet, ultimately, the unemployment challenge cannot be met by shifting the existing stock of well-paying jobs from expatriate to Saudi workers. Instead, necessary policy reforms must seek to create more skilled jobs, while effectively addressing Saudi's beliefs on employment and their role in the country's development. Understanding female unemployment and promoting female inclusion will require particular attention and a special effort.

Figure 1: Saudi Unemployment Rate



Source: Labor Force Surveys

Figure 2: Saudi Employment Rate



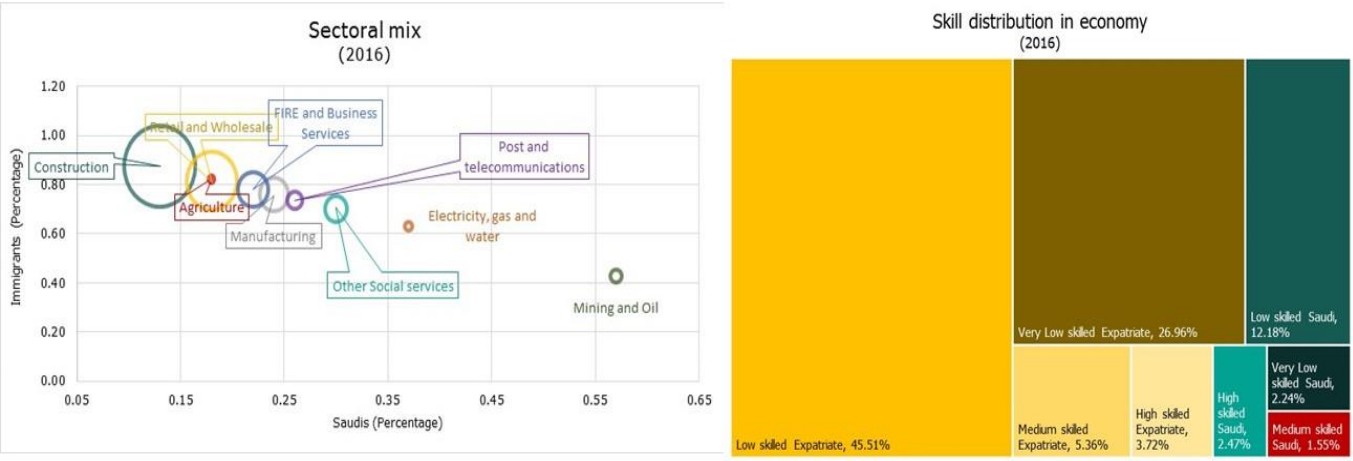
Source: Labor Force Surveys

2. Saudi Development Model And Labor Market Policies

Following the 1974 oil boom and to expedite its development, Saudi Arabia adopted a model driven by heavy reliance on oil revenue. Similar to other Gulf countries, infrastructure investments in Saudi Arabia expanded with the influx of oil revenue; with labor shortages, Saudi businesses were able to recruit expatriates across the skill distribution, to cover the country's need for both labor to work in construction, retail, accommodation sectors and also technical sophistication beyond the Saudi workforce (Diwan 2016). As such, non-Saudis went from constituting 20% of the labor force in 1970 to around 60% by the 1990s (Fakeeh 2009). The impact has been long-

lasting: in 2016, more than 80% of non-civil servant jobs are held by foreigners who continue to lift up the Saudi economy; the majority of sectors, in 2016, constituted predominantly of foreign workers, with less than 50% of their labor force being Saudi. Finally, 45% of labor in the economy were low-skilled immigrants *(Figure 3).*

Figure 3: Saudi Labor Force Composition: Sectoral And Skill Mix



Source: Saudi Social Security Dataset (GOSI)

At the same time, as Saudi businesses turned towards foreign labor, the Saudi government redistributed oil revenue to citizens by providing lucrative public sector jobs. This is thought to have dis-incentivized Saudi citizens from pursuing private sector employment. Recent estimates show that Saudi men working in the public sector make about twice as much as they would in the private sector (Diwan 2018). Furthermore, female labor participation has been traditionally low in the conservative Saudi society, where social norms restrict the role of women (Bursztyn, Gonzalez, and Yanagizawa-Drott 2018). This is further complicated by gender segregation policies requiring women and men to operate in separate premises of the workplace.

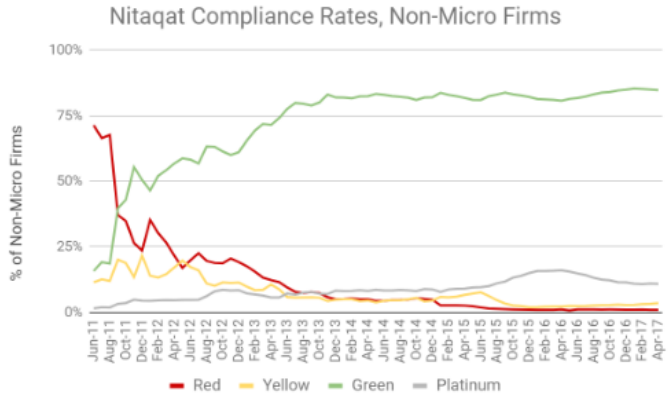
Saudization efforts have been in place since the 1970s, as the Saudi government recognized the importance of integrating the Saudi workforce in the economy. Yet, enforcement was lax. Some ad-hoc attempts were made to fully convert specific sectors to national labor, such as a ban on expatriate labor in wholesale produce markets, gold and jewelry markets, and the taxi market in 2004 (Fakeeh 2009). However, these attempts were short-lived, with public outcry over the 200-300% price increases in the limousine sector, for example, leading to a reversal of the policy (Al-Ghamdi 2018). Instead, the Saudi government focused on expanding and nationalizing jobs within the government and state-owned enterprises.

More recently, several confounding factors created an urgency to diversify as well as a need for creating new jobs for the growing young population (Diwan 2018). The 2011 regional political crises, coupled with high youth unemployment, shed the light on the need for more jobs. While the public sector had been a significant employer, the large Saudi population makes this option

insufficient. Additionally, the oil price shock in 2015 drove revenues down such that the deficit jumped from 3.4% to 15.8% of GDP. Heavy spending on public wages -- 18.5% of GDP in 2015, or 45% of public spending -- suddenly looked unsustainable (IMF, 2018a). By 2016 the Saudi government responded with Vision 2030, a development strategy outlining ambitious plans for modernizing the country into a diversified, knowledge-based economy (Diwan, 2016). This not only makes achieving diversification a top priority, but equally important the issue of Saudi employment in the private sector, as policymakers understand the need for high-skilled labor to move the economy forward. Combined with a rapidly growing young population; these pressures have pushed the government to take active measures to address Saudi unemployment.

In June 2011, the country's Saudization efforts intensified. The economy-wide 30% Saudization target was swapped for Nitaqat, a system of quotas that varied by firm size and industry *(see Appendix 1)*, backed up by the option of tightening visa and hiring restrictions for noncompliant firms. With data monitored credibly through visa records and social security data, compliance was rapid, with the vast majority of firms shifting from red (insufficient Saudization) to green (meets Saudization targets) within a year of its implementation *(Figure 4)*. Employment increased substantially among red and yellow firms, with firms marked as green showing no trend towards additional employment. Reforms making quotas more stringent were adopted in 2017, with some sectors targeted for near-100% Saudization, particularly in retail.

Figure 4: Nitaqat Compliance Rates, Firms With At Least 10 Employees



Source: Nitaqat Dataset, Ministry of Labor

Nitaqat was complemented by changes to prices in the labor market, to encourage the Saudi workforce to accept private sector jobs and reduce the reliance of the private sector on expatriate workers. Specifically, a monthly expatriate levy of SAR 200 (US$26.70) was enacted in 2012, payable by firms for each expatriate worker employed. This is a significant surcharge, given that about a quarter of expatriates are paid only 400 SAR per month. It aimed to reduce the wage gap between Saudi and expatriate workers. Additionally, in February 2013, the Saudi minimum wage was doubled to SAR 3,000 per month. These increases were partially borne by the government through payroll rebates tied to a firm's Nitaqat band (Evidence for Policy Design, 2015). The

monthly levy was doubled to 400 SAR at the start of 2018, with smaller charges on expatriate dependents and expatriates working in Saudi-majority firms also put in place (IMF, 2018b). Other investments have aimed at improving the productivity of Saudi workers and addressing market failures. Private sector internships were made mandatory, and substantial investments were made in vocational and university education, job fairs, and job matching programs (Evidence for Policy Design 2015).

3. Labor Market Diagnostic

Data

We follow a diagnostic approach to analyze and understand the factors contributing to the high unemployment-low private sector employment in Saudi Arabia. We explore:

- The structure of employment and unemployment in Saudi Arabia, by examining supply and demand dynamics from gender, educational and age lenses; and,
- Cost barriers influencing employment, such as labor regulations, the fixed cost associated with hiring Saudis, and worker tenure.

The diagnostic allows us to draw conclusions about the labor market, which we use to construct a syndrome (Section 4) explaining the persistence of high Saudi unemployment with low Saudi private sector employment. We leverage literature on the Saudi labor market, overall Gulf labor trends and dynamics.

To do so, we rely on two data sources: The General Organization for Social Insurance (GOSI) and the Nitaqat program. The GOSI data is the full, longitudinal social security data of private sector employees in Saudi Arabia (except for domestic workers), running from 2009 to 2016. Jobholder and firm characteristics are collected, at the job spell/ contract level, and these start and end date of employment, monthly wage, age, education, gender, region, sector, sub-sector, occupation title, and nationality. It includes public sector workers that are enrolled in the insurance scheme (such as those working for SOEs) but does not include civil servants, military personnel, or police employees. The dataset available is the full set of contract data between the years 2009 and 2016; because the policy push for Saudization begins in 2011, we largely focus on 2011 to 2016 data. A 1% random sample of contracts (236,000) is used for the ease of Stata processing. This data can also be collapsed to the firm level. Some known limitations with the data include:

- Data collection on expatriate employment before 2013, and especially before 2011, was incomplete, with many expatriates not formally registered with GOSI.

- In addition to the problem of "Ghost Saudization",[7] inconsistencies between wages reported to GOSI and actual wages paid, especially to expatriates, may be prevalent. Informal employment is also not captured.
- The dataset does not give an indication of whether workers that leave their jobs become unemployed or join the public sector.
- Education data is missing for about 15% of Saudis and 70% of non-Saudis.

The Nitaqat data spans from June 2011 to April 2017 and is comprised of weekly verifications of a firm's size, economic activity, Saudization score, and corresponding color band. Both datasets span the entire private sector. A major limitation is that while both the GOSI and Nitaqat data are intended to represent the full private sector, the two datasets do not match/merge well.

Additionally, we utilize customs data provided by the Ministry of Economy and Planning in some calculations of firm exports per capita in Section 4. This is a full set of import and export declarations for firms and individuals for the years 2009 to 2016, include information on the item imported/exported by HS code, the time and location of the transaction, the trading partner country, the value exported or imported, and the firm doing the importing/exporting. This dataset could be matched with GOSI firm-level aggregations.

Finally, we leverage the publicly available Labor Force Surveys published by the General Authority for Statistics, as well as Annual Statistics published by the central bank (SAMA).

A larger limitation to the analysis presented in this paper is the omission of the informal economy. Saudi Arabia defines informal workers as "individuals who have not lawfully entered the country; not authorized to work, do not have a contract with the employer or not registered at the Ministry of Labor and Social Development" (Takamol 2017). Informality was estimated at 21.4% in 2016, a sizeable sector that we are unable to capture or represent in this paper. We note that accounting for these shadow activities, especially in a future effort succeeds in capturing them would imply different results than reported in later sections.

[7] Discussions on Nitaqat are often accompanied by anecdotal reports of "Ghost Saudization" – that is, fake employment whereby Saudi individuals appear on a firm's payroll but do not assume any tasks or duties. Yet, there is no concrete evidence or measures of the phenomenon.

The Structure Of Employment And Unemployment In Saudi Arabia

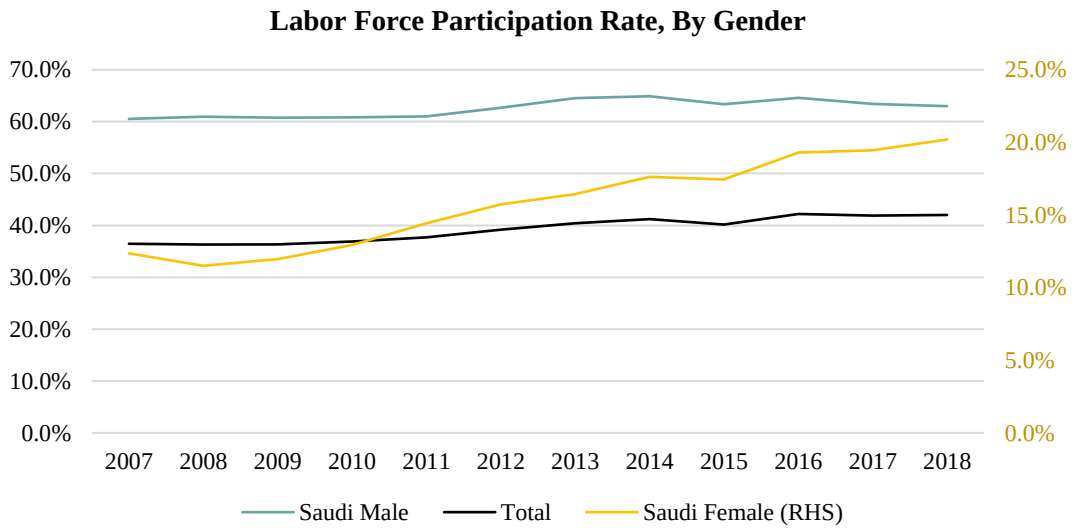
In this subsection, we examine the most important labor supply and demand trends, with the purpose of clearly defining the attributes of employed and unemployed Saudis, along gender, schooling level and age dimensions. Unemployment is the concern, and hence characterizing the unemployed in Saudi Arabia helps inform policy strategies. Yet, the focus solely on the unemployed is misleading in the context of Saudi Arabia and understanding the characteristics of Saudis and expatriates employed by the private sector has equal, if not greater, importance.

On one hand, Saudis' traditional preference for public sector jobs, and the open immigration system that allows a flexible flow of foreign labor to private firms imply that the composition of Saudi private sector participation and employment is worthy of close examination to understand the determinants of their employment. On the other hand, the government's policies over the past decade, particularly the Nitaqat program, or the Saudization quota system, has changed the composition of Saudi (and expatriate) employment in the Saudi private sector. This changing composition potentially carries several lessons particularly on the areas of success and failure of these policies. This can ultimately inform a diagnosis of the constraints or enablers of greater Saudi employment in the private sector.

Gender

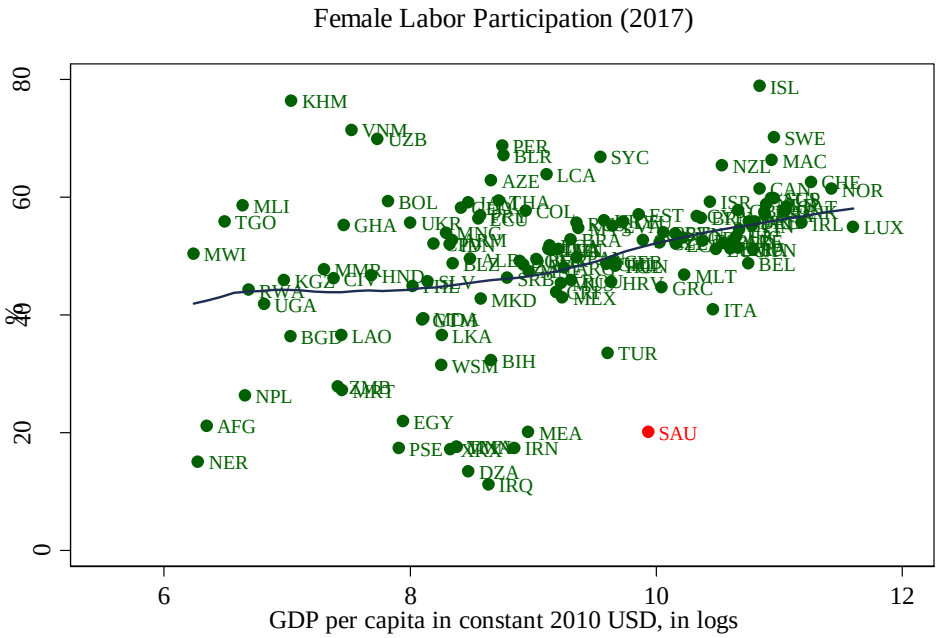
Female labor participation in Saudi Arabia has been and remains very low. In 2010, female labor force participation was 12.9% (*Figure 5)*. Since then, Saudi female labor force participation grew at a much fast. By 2018, female labor force participation increased to ~20% - a 7.3 pp gain compared to 2011. Male labor force participation witnessed an increase of ~2 pp. Yet, female labor participation in Saudi Arabia remains at some of the lowest level, particularly taking into consideration the country's income per capita (*Figure 6)*. The problem of low female labor participation seems to be a problem among women with low levels of schooling: for example, 2018 figures show that female labor force participation increases from less than 10% for women with secondary schooling or equivalent to more than 60% for women with a diploma or bachelor degree (*Figure 7*).

Figure 5: Labor Force Participation in Saudi Arabia



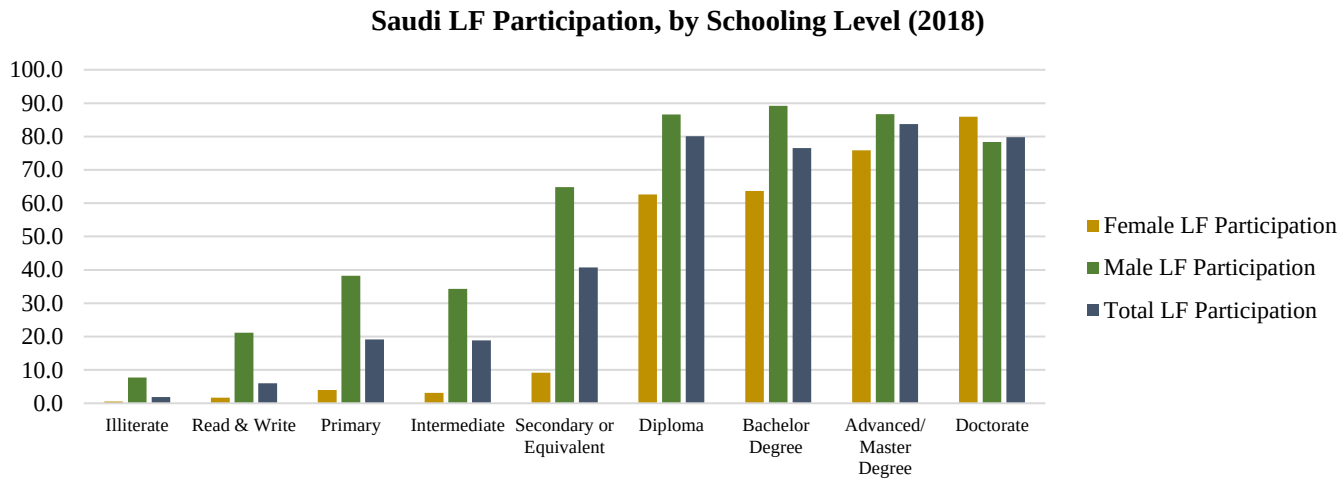
Source: Labor Force Surveys

Figure 6: Female Labor Participation By Income Level (2017)



Source: World Development Indicators

Figure 7: Saudi Labor Force Participation, By Schooling Level



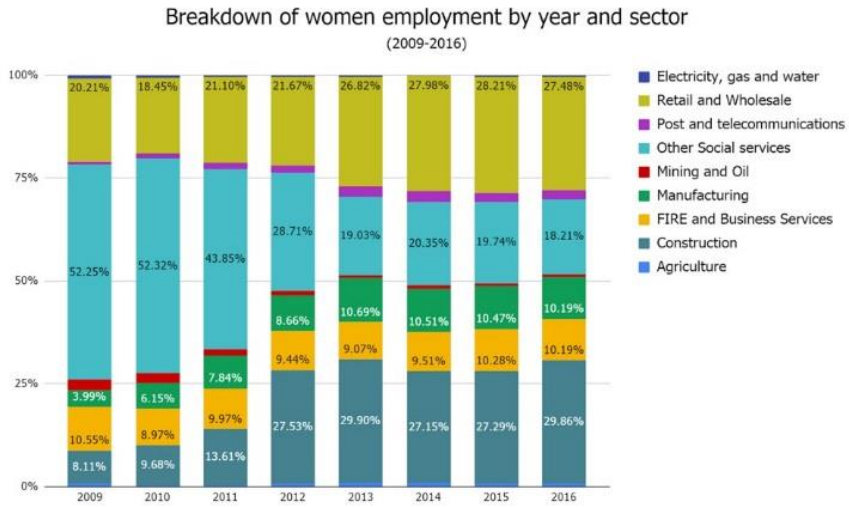
Source: Labor Force Survey (2018Q4)

Saudi employment in the private sector has followed a similar dynamic and has increased significantly for both men and women. Similar to men, jobs held by women are concentrated in the public sector (Labor Force Surveys). Since 2011, the change in private sector employment has been rapid: while male Saudis saw an increase in private sector employment of about 45% in 2011 and 2012 and little growth thereafter, Saudi female non-government employment more than tripled in 2011 and 2012, and has grown by another 50% since 2013. This improvement in female employment comes from a very low level and therefore is still low.

Saudization policies have helped propel this growth. Nitaqat has contributed to boosting Saudi women employment, as a premium on Saudization score for each woman hired was initially part of the quota package (Saudi women counted as two Saudi men). This provision was abolished by 2015 (Husein, Balouziyeh & Burns 2016). *Figure 8* provides an indication of the changing female employment over the past decade: 30% of Saudi women worked in construction, followed by 27.5% in the retail sector in 2016, while social services are the sector where Saudi women make up the largest percentage of the workforce. According to the Saudi Social Security data (GOSI), at least 63% of these women are employed in clerical, services and sales; followed by 16% in specialized jobs and only 7% in managerial jobs.[8]

[8] Female employment is perceived as more susceptible to Ghost Saudization, yet there is no concrete evidence or measures of the phenomenon.

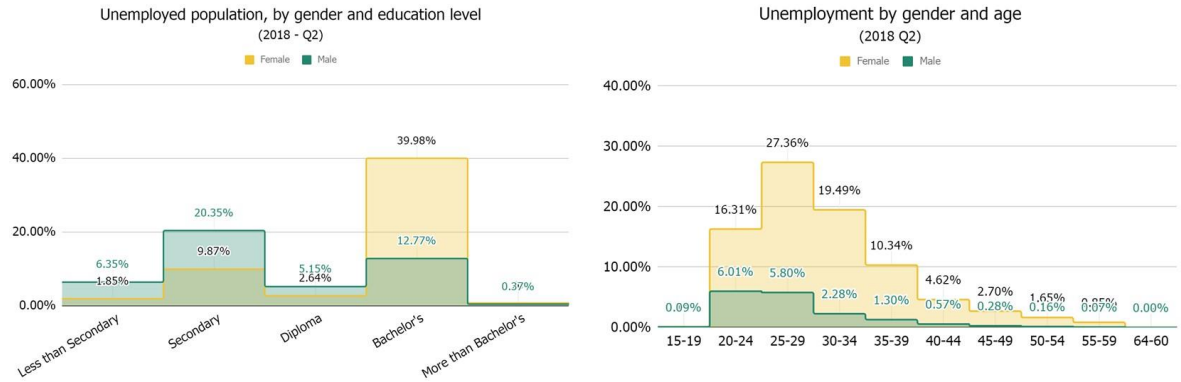
Figure 8: Employment Of Saudi Women



Source: Saudi Social Security Dataset (GOSI)

Yet, more needs to be done as women still represent the biggest fraction of unemployed Saudis. According to the 2018Q2 Labor Force survey, out of 787,895 million unemployed Saudis, ~40% are women, with college-educated women the largest group of unemployed individuals in Saudi Arabia. This figure was ~31.4% in 2011Q2. That is, while female labor participation has been increasing, especially among college-educated women, this increase in participation is yet to translate to high female employment. Female unemployment exceeds that of men across age groups and especially among college-educated individuals (*Figure 9*).

Figure 9: Saudi Unemployment



Source: Saudi Labor Force Survey (2018Q2)

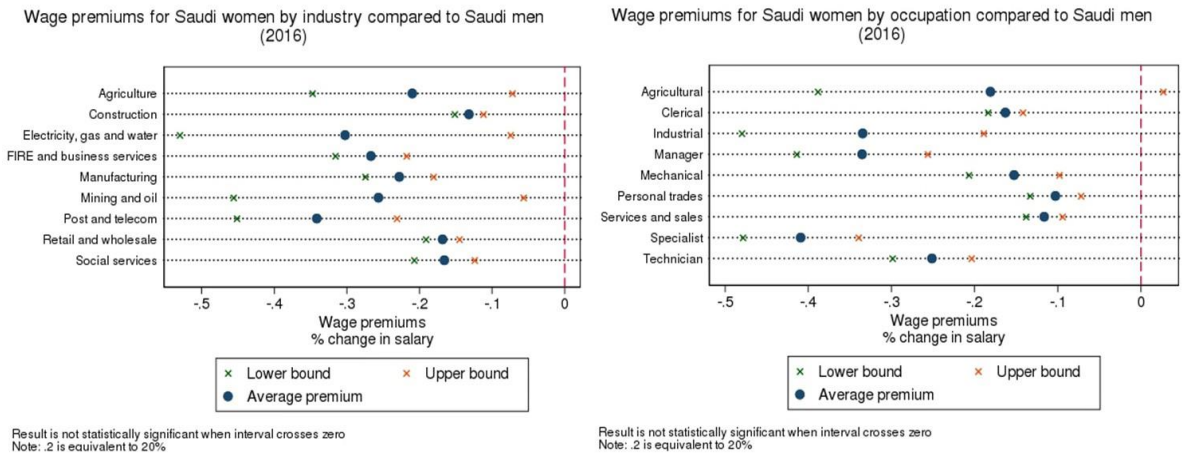
Wage return may be contributing to this trend. While we expect women in Saudi Arabia to exhibit high reservation wages, given the externalities associated with female employment in a conservative society, social security data reveals differences in the wage distributions of Saudi

men and women. Both distributions are bunched around the minimum wage: 43.7% of working Saudi men earned less that SAR 3,100 in 2016, whereas 65.9% of working Saudi women earning less than SAR 3,100 in 2016 (GOSI dataset). We estimate the wage premium associated with gender, by occupation (j) or industry (n), based on equation (1), and find Saudi women facing a negative wage premium compared to Saudi men in the private sector across industries and occupations (*Figure 10*). That is, holding the level of schooling, occupation [industry], age and tenure constant, women, across industries [occupations] face a negative wage premium associated with their gender. Negative wage premiums in the context of higher reservation wages for women, given social restrictions (mobility, low female labor force participation) could discourage women from taking employment, and make them more selective than men.

Equation (1):

$Log_salary_{i,j} = \alpha + \beta_1.female_{i,j} + \beta_2.immigrant_{i,j} + \beta_3.level\ of\ schooling_{i,j} + \beta_4.age_{i,j} + \beta_{n/j}.industry\ or\ occupation_{n/j} + \varepsilon_i$ for individual i in occupation j (or industry n)

Figure 10: Saudi Women Wage Premia

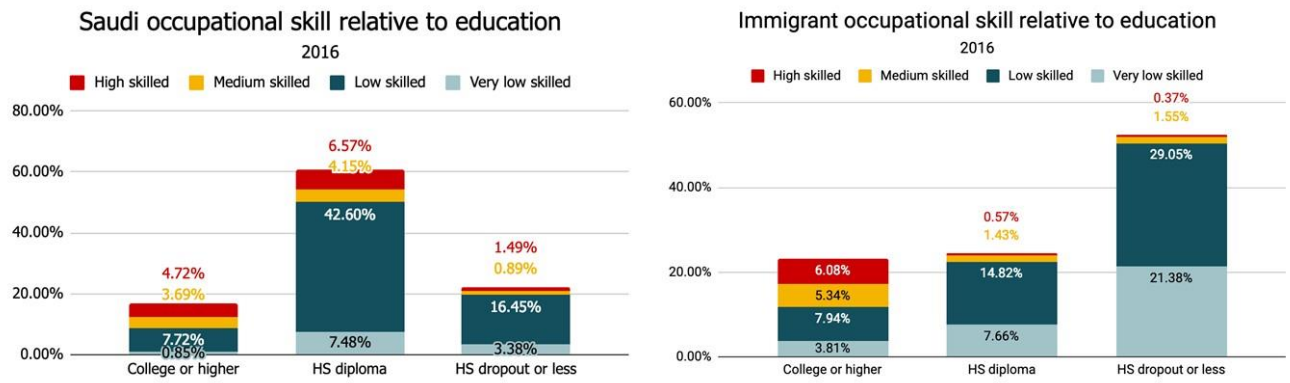


Source: Author's calculation using the Saudi Social Security Dataset (GOSI)

Education And Age

As of 2016, about 60% of the Saudi private sector workforce were secondary school graduates. An additional 17% had received some sort of tertiary education, with the remainder not having completed high school. Yet slightly more than 12% of Saudis occupy high skilled (managerial and professional), 7% occupy medium-skilled jobs (technical jobs), while ~78% work in very low- or low-skilled occupations (skill level defined based on ILO ISCO classification). 30% of these occupations are clerical, and the rest are personal trades, sales and services, and mechanical occupations (*Figure 11*).

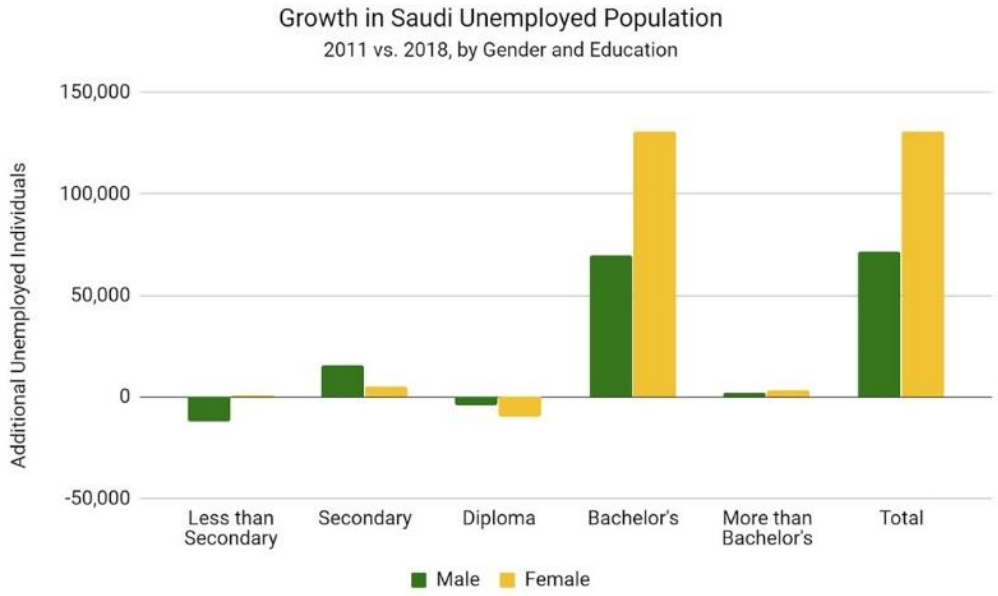
Figure 11: Saudi And Expatriate Occupational Skill Level, By Education Group



Source: Constructed using the Saudi Social Security Dataset (GOSI), based on ILOSTAT Employment by Occupation Classification

Recently, unemployment has shifted towards better educated Saudis. *Figure 12* illustrates this trend, driven primarily by a significant increase in unemployed bachelor's degree holders, particularly women. The unemployment rate among bachelor's holders was 17.7% in 2018, compared to 11% among high school graduates, a major divergence from 2011, during which the unemployment rate for both groups was around 15%.

Figure 12: Change In Saudi Unemployment, 2011 Versus 2018, By Gender And Education level

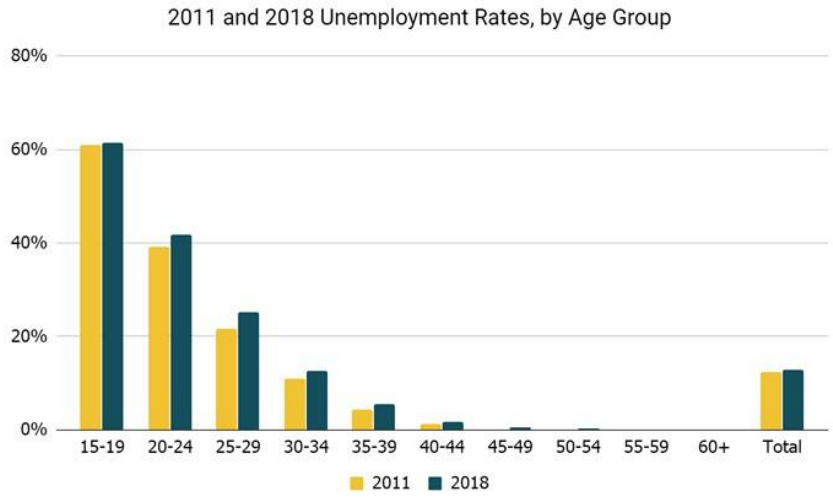


Source: Saudi Labor Force Survey (2011, 2018Q2)

Unemployment is concentrated in younger cohorts. In fact, youth unemployment (the youth defined as those between 15 and 30 years of age) stood at 29% in 2018. *Figure 13* shows that the

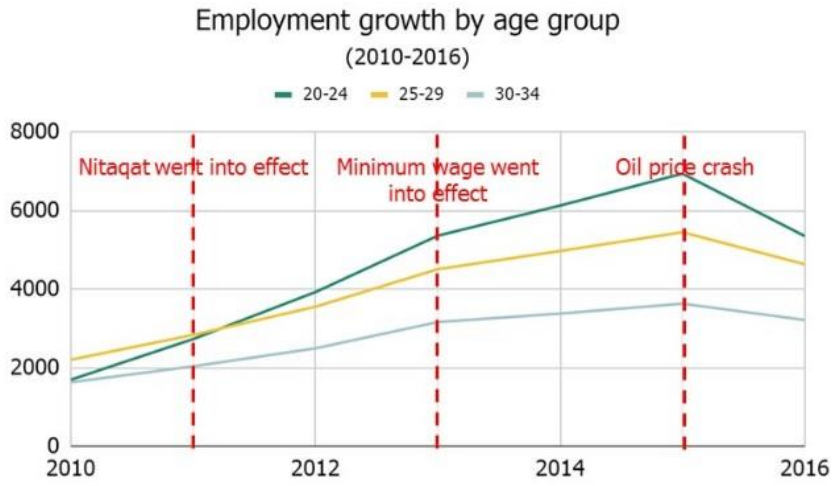
age distribution of unemployment has not changed since Saudization efforts intensified, despite an acceleration in the employment of young Saudis (*Figure 14*). This leaves us with the idea that current employment trends seem insufficient compared to the number of graduates entering the labor force annually.

Figure 13: Saudi Unemployment By Age Group



Source: Saudi Labor Force Survey

Figure 14: Change In Saudi Employment, By Age



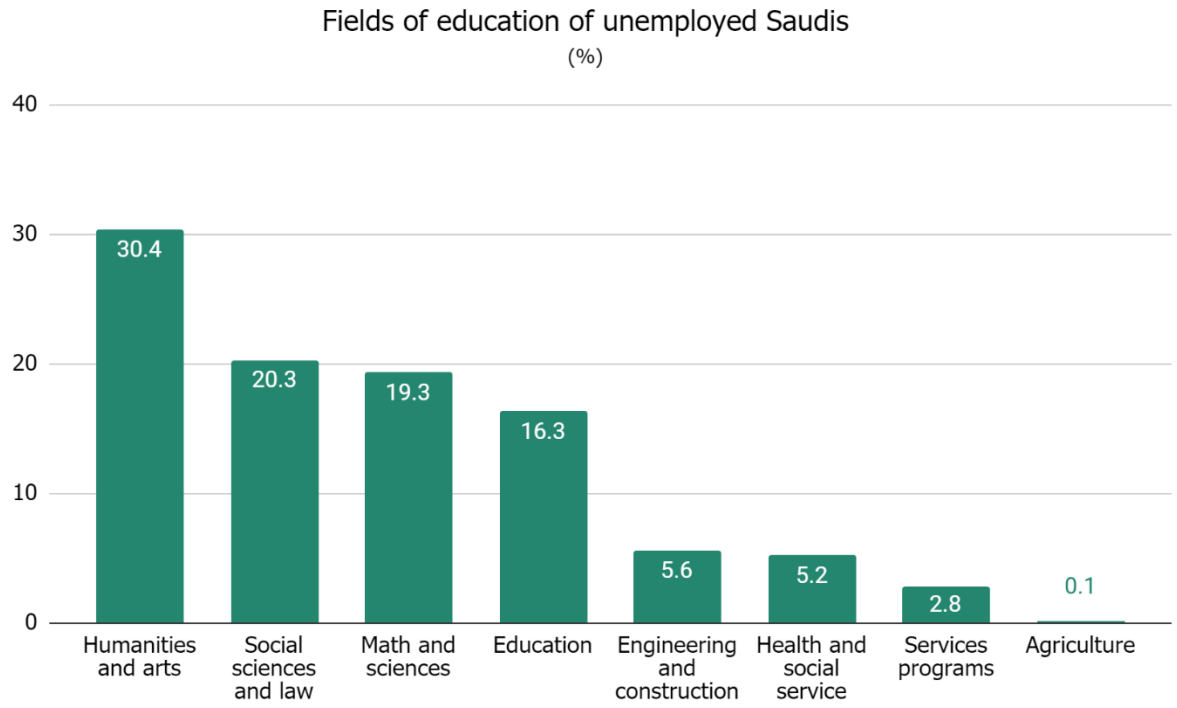
Source: Saudi Social Security Dataset (GOSI)

Inadequate schooling quality may be one of the reasons for disappointing labor market results among holders of bachelor's degrees. Initial analysis on the return to tertiary shows positive and significant wage premiums to tertiary education in 2016 for both Saudi and expatriate workers, but

that of expatriate workers is higher than Saudi workers. Yet, the education data for expatriate workers in the GOSI dataset includes missing values which may bias the results and thus we do not report these numbers. Yet, if this result is correct, then: holding age, occupation and gender constant, tertiary education for expatriate workers is associated with higher wages premiums than Saudi workers, which implies that expatriate workers with tertiary education must be contributing additional valuable skills to justify the premium.

A close look at unemployment rates by field of study shows disparities among the fields: unemployment rates among Saudis specialized in humanities is high. It is also surprising that unemployment is high While no general conclusion can be drawn at this stage with regards to the impact of the field of study on individuals' labor market outcomes, there is an initial indication of excess supply of skills among nationals (*Figure 15*).

Figure 15: Unemployment Among Saudis Holding At Least A Diploma (Or Above) – 2018Q2



Source: Saudi Labor Force Survey (2018Q2)

Cost Barriers Influencing Saudi Employment

In this subsection, we examine the cost elements hindering greater employment of Saudis in the private sector jobs, with the purpose of understanding whether the price of hiring Saudis is a binding barrier to firms. Existing studies on the Saudi labor market (Ramady 2013; Peck 2017) illustrate hiring Saudis, from firms' perspective, as costlier than hiring expatriates. This cost differential persists across the skill or occupational spectrum and is the result of direct government policies or indirectly incurred due to risks, to firms, associated with hiring Saudi workers.

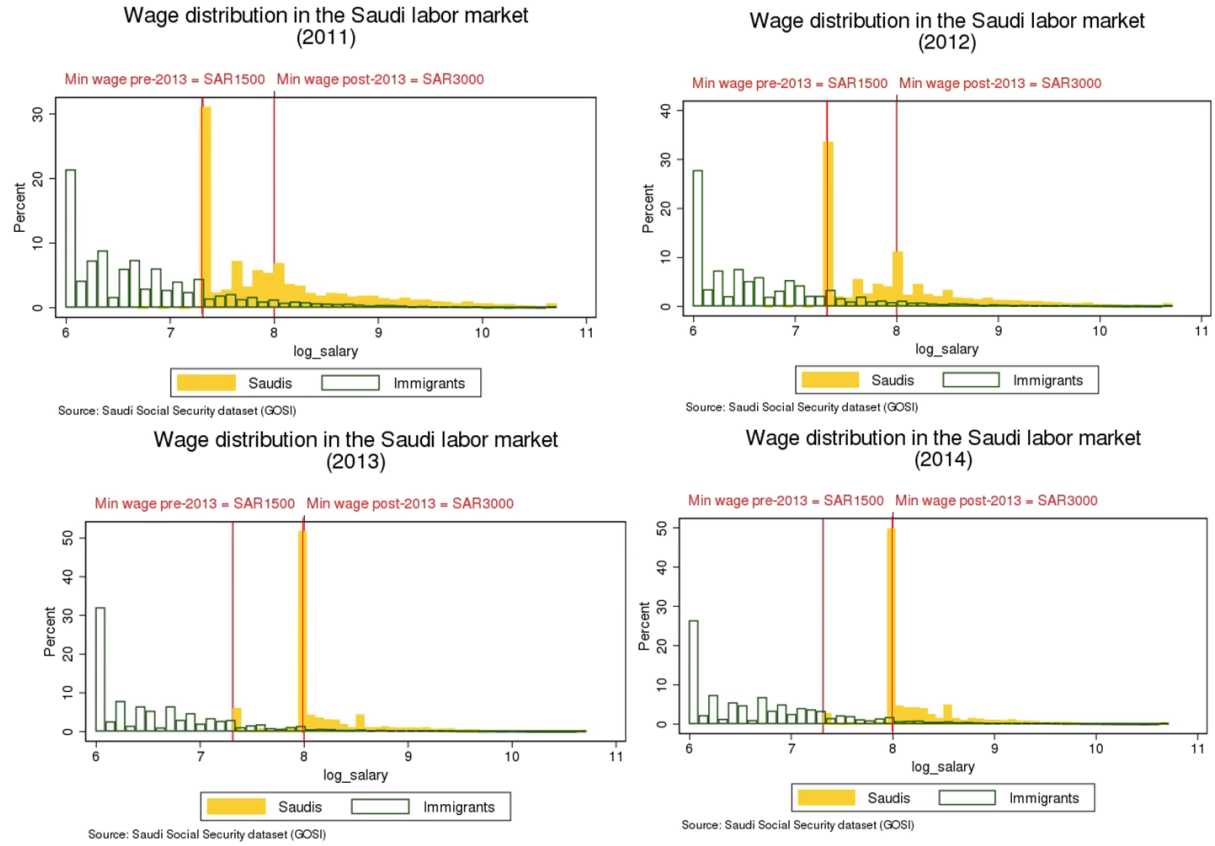
An example of direct government policies making Saudi workers costlier to firms than expatriate is an increasing minimum wage – applicable to Saudi workers and is binding for a firm's Saudi workers to count towards its Saudization score.[9] Additionally, norms as well as rules on coworking spaces require employers to provide separate working spaces for women and men, a potential upfront cost that might be prohibitive in some cases. Finally, we attempt to assess costs or risks associated with Saudi employment by examining worker tenure.

Wages

A high minimum wage requirement for Saudis in the private sector has aggravated the dualism between Saudi and expatriate labor markets. Traditionally, the policy and practice of placing premiums on Saudi workers' wages has resulted in two distinct distributions of wages for expatriates and Saudis (*Figure 16*). In 2013, Saudi labor regulations doubled the Saudi minimum wage to SAR 3,000 (US$800), 7.5 times the minimum reportable expatriate wage (SAR 400, or US$106). This significant difference in wages is most pronounced among low- and medium-skilled workers, where a median Saudi wage is around SAR 3,000, whereas a median expatriate wage stands at SAR 800.

[9] A firm's Saudization score determines a firm's placement in the Nitaqat band system. For Saudi workers to count towards the Nitaqat quota, they must earn at least the minimum wage.

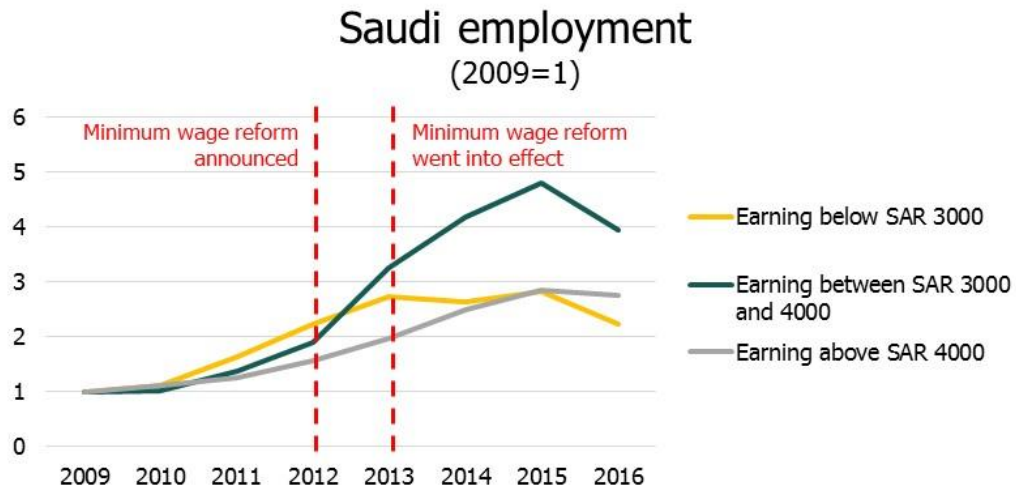
Figure 16: Saudi Versus Expatriate Workers - Wage Distribution



Source: Saudi Social Security Dataset (GOSI)

In theory, minimum wage reforms aim to close the gap between public and private sector wages, increasing the supply of Saudi workers in the private sector. Yet, it is not clear how much of a push the 2013 increase in minimum wage has provided. Job creation near the bottom of the Saudi wage distribution was rapid in the early Saudization years, but has stagnated following the minimum wage increase, while jobs less impacted by the minimum wage increase (those earning between SAR 3000 and 4000) have grown at a healthier rate (*Figure 17*).

Figure 17: Saudi Employment By Wage Category



Source: Saudi Social Security Dataset (GOSI)

The minimum wage may be hindering job creation in entry level positions by potentially discouraging firms from hiring Saudis. In 2012, 33% of Saudis earned SAR 1,500 per month, the de facto minimum wage at the time. In 2016, around 50% of Saudi workers earned exactly the minimum wage (*Figure 16*). This significant bunching of the labor force at the minimum wage points to a substantially curtailed wage distribution. Bunching is even more severe in provinces like the Northern Region, Hail, and Tabuk, where the portion of Saudi workers making SAR 3,000 was 82%, 79%, and 75% respectively. Comparing wage distributions by industry, we observe bunching in most industries, with the exception being Mining and Oil (with a median wage of SAR 10,400); Electricity, Gas, and Water; and Post and Telecom. Regions and industries that show greater bunching may be struggling to add Saudi workers: for example, in 2018, the Northern Region, Hail, and Tabuk had Saudi unemployment rates of 22.9%, 16.2%, and 14.5%, all substantially higher than the 12.9% national rate.

Fixed Costs

As private firms were urged to hire more Saudi workers since 2011, another important factor influencing their willingness and ability were fixed costs. Firms potentially face considerable fixed costs as they begin to hire Saudis. Peck (2017) explains the fixed cost as the need to establish referral networks, build experience screening and selecting Saudi candidates, and acquire physical working space appropriate to include women. An interview conducted with a business leader in Saudi Arabia confirmed this dynamic, citing the importance of learning when it comes to Saudi recruitment as an example, and noted that this can put disproportionate pressure on small firms.

Empirical evidence is in line with the theory, especially at low levels of Saudization. Peck (2017) underscores that firms that did not employ Saudis before the June 2011 imposition of Nitaqat shut

down at a higher rate than red firms that employed at least one. Yet, stagnant recruitment of Saudis in firms initially marked as green, which had incurred any fixed costs, suggests this hypothesis may be limited to firms only beginning to hire Saudis.

The discussion on the fixed costs associated with hiring Saudi workers is likely to be of high importance when it comes to Saudi female employment. Our analysis suggests a possible positive association between fixed costs and the hiring of women. We estimate a linear regression with year fixed effects, to analyze the change in a firm's female employment in year t, given the firm having hired at least one woman in years t-1 and t-2. We use the Social Security data between 2011-2016 to obtain a firm-level dataset, with variables on the number of employees, by gender and main economic activity. The regression is based on Equation (2).

Figure 18 summarizes the result. Column (1) shows the results of regressing the absolute change in a firm's female employment on two lags of a dummy variable, where a value of 1 signals at least one female employee at the firm, a lag of the total number of female employees and a lag of total employment. Column (2) shows a similar regression but with year-on-year percentage change in female employment as a dependent variable. Column (3) shows the results of regressing a dummy variable of whether a firm hired women during the past year on the same variables.

The result in column (1) suggest that, on average holding a firm's economic activity, its size (total employment) female employment in 2011 and its location constant, having had at least one woman in the firm's workforce in year 2011 is associated with an increase of 6 female employees by year 2016. The result in column (2) suggest that on average, holding all else constant, having had at least one female employee in year 1 is associated with a ~4 percentage-point increase in female employment in year 3. Finally, the result in column (3) suggests that on average, holding all else constant, having had at least one female employee in year 1 is associated with a ~5 percentage-point increase in the likelihood that the firm hires a woman in year 2. These results are large and statistically significant.

Equation (2):

$$Change\ in\ number\ of\ female\ employees_{i,t} = \alpha + \beta_1 . female\ dummy_{i,t-1} + \beta_2 . female\ employment_{i,t-1} + \beta_3 . total\ employment_{i,t-1} + \varepsilon_i$$ for each firm i at time t

Figure 18: Change In Female Employment In Firms

OLS Regression, Firm level, 2011-16 *Do firms with women employees at the beginning of a period hire more women by the end of the period?*			
	(1) **Absolute change in 2016, relative to 2011**	**(2)** **Year on Year % change between 2011-2016**	**(3)** **Did firm hire any female employee this year?**
Women employees dummy in T-1	6.56*** [0.915]		5.33%-point *** [0.13%-point]
Women employees dummy in T-2		4.16%-point*** [0.69%-point]	4.4%-point *** [0.13%-point]
Total female employees in T-1	0.233** [0.107]	-0.1%- point** [0.043%-point]	0.06%-point*** [0.0014%-point]
Total employment in T-1	0.0037 [0.0031]	0.008%-point [0.005% point]	0.0012%-point [0.00%-point]
Observations (Firms)	312,623	153,474	422,334
Controls	Firm size, sector, region	Firm size, sector, region w year FE	Firm size, sector w year FE
Robust standard errors in brackets			
*** p<0.01, ** p<0.05, * p<0.1			

Source: Author's calculation using Saudi Social Security Data (GOSI)

Attrition

Employee tenure in the Saudi economy is generally low for both Saudis and expatriates. With the mean tenure across the Saudi labor market being around 2.2 years, Saudi Arabia ranks significantly below other countries. The comparable figure in the European Union, for example, is about 10 years (Eurofound 2015). The Saudi Social Security data shows the median tenure of Saudi and non-Saudi workers between 2011 and 2016 was 6 and 18 months, respectively, compared to just over 4 years among workers in the U.S. (Bureau of Labor Statistics, 2018). *Figure 19* shows tenure is a problem especially for Saudis earning less than SAR 10,000 (log=9), which represent more than 80% of the Saudi workforce.

Figure 19: Tenure Variation By Wage level, For Expatriates And Saudis (2016)



Source: Saudi Social Security Dataset (GOSI)

Saudi tenure is lower than expatriate tenure across the majority of occupations and sectors (*Figure 20)*. An analysis of tenure by occupation and industry shows Saudis' tenure falls below that of expatriates across occupations and in most industries. Troublingly, the minimum wage increases in 2013 does not seem to have lengthened Saudi tenure meaningfully. We observe worker tenure "completed" by 2013 – that is the tenure of workers who had left the private sector by 2013 – and compare it to those who continued to work after 2013 or entered the market after 2013. The means of these distributions were 1.33 years and 1.9 years respectively (*Figure 21*). These figures are 3.2 years and 2.9 years respectively, for expatriate workers.

Saudi attrition may be problematic for employers, who incur fixed costs and high wages to hire Saudis. In a 2018 study on Saudization in four- and five-star hotels in Saudi Arabia, 70% of HR managers interviewed agreed that Saudi attrition is a source of frustration (Azhar et al. 2018). As such, the attractiveness of Saudis may be affected - as the rate of return on investment in Saudi employees is negatively affected given their higher cost and faster turnover (implying increased search and training costs). Additionally, with low tenure, Saudis are likely to struggle to build job- and firm-specific experience.[10]

[10] The Social Security data (GOSI) does not include reason for exiting a job; therefore, we are unable to comment on the nature of these departures

Figure 20: Completed Tenure By Occupation (2016)

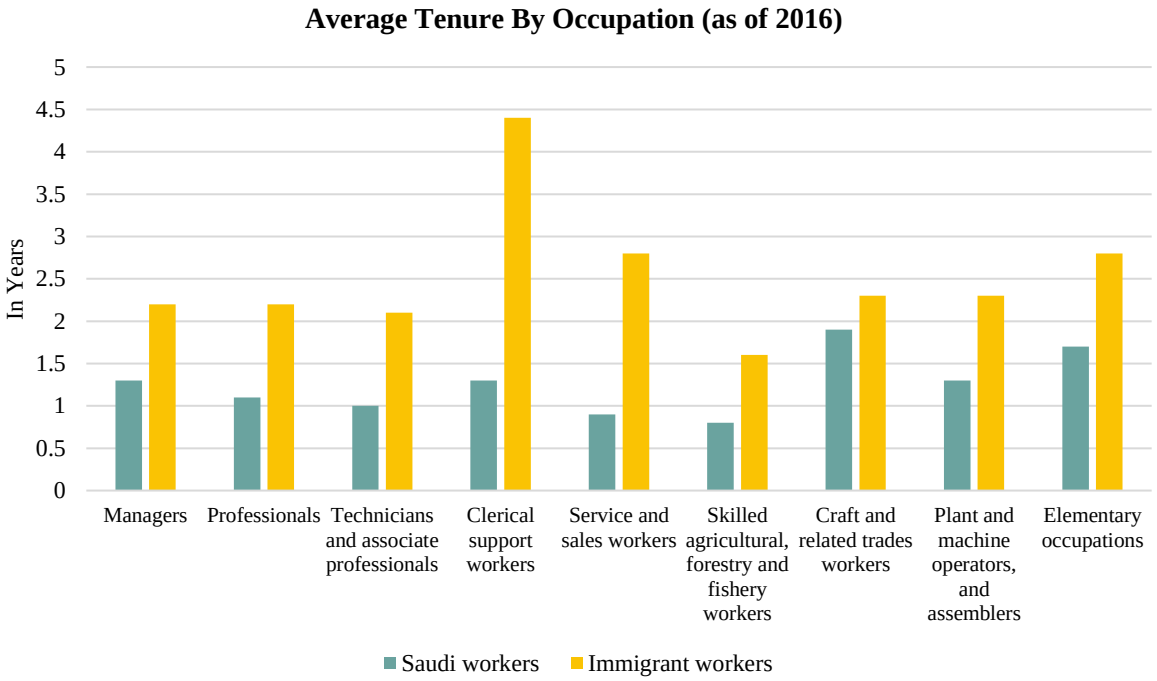
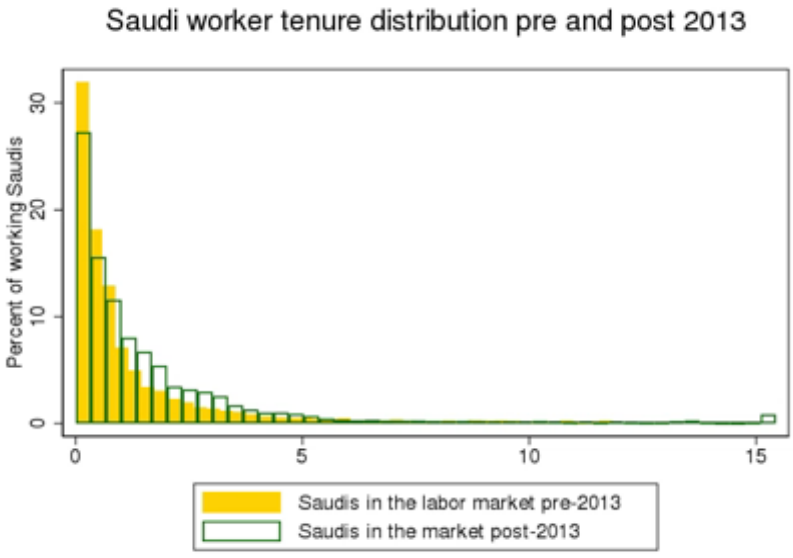


Figure 21: Saudi Worker Tenure Distribution (Pre- And Post-2013)



Source: Saudi Social Security Dataset (GOSI)

Notes on the Nitaqat (Saudization) program

The set of Saudization policies put in place since 2011 add an important layer of complexity on top of the long-standing policy framework or structural dynamics. This subsection considers policymakers' theory of change with regards to the country's labor market policies since 2011, in comparison to the actual outcomes discussed in the previous subsection.

Saudization seems to be an attempt to overcome the economic and cultural barriers that have hindered the participation of Saudis in productive economic activities, without extreme disruption to the private economy and Saudi living standards. The policy package is aimed at moving the country towards equilibrium, beginning a virtuous cycle of increased and improved national involvement in the private sector and a reduced reliance on low-cost labor.

The government's theory of change behind the reform is that it will speed up accumulation of knowhow and boost productivity of Saudi workers, especially in light of heavy investment in university education, vocational training, and private internships. The government also possibly considers the program as a method to correct for the information asymmetry facing Saudis (with regards to private employment) and business owners (perception of Saudis' skills and productivity) by instituting quotas mandating businesses hire Saudi beyond current levels. This may discourage firm reliance on foreign labor, and the imposition of levies on expatriate labor serves to complement the effort,[11] while making private sector jobs more appealing to Saudi workers and incentivize tenure in the private sector, through a high minimum wage (Ramady 2013).

On the supply side, Saudi labor would face stronger incentives to engage in private sector work and become more adept in these roles. Taboos against working in certain sectors or against female employment in the private sector would wane as both become normalized. Indeed, recent academic research shows that perceived misgivings about female work are greater than actual misgivings, implying that norms could update rapidly after an initial push from policy, improving absorption of job-seeking women into the workforce (Bursztyn, Gonzalez, and Yanagizawa-Drott 2018). Saudi workers would be exposed to sectors and skills currently dominated by expatriates, receive training and gradually develop managerial skills. Yet, these reforms do not affect Saudis' high reservation wages and assume an increase in minimum wage will make private jobs more attractive, correcting for this issue.

On the demand side, firms would be forced to shift their business models away from low-cost labor, rebalancing production methods to rely on technology, capital, and middle-skilled workers. Businesses accustomed to ignoring Saudis as a possible part of their workforce may hold incorrect or incomplete assumptions about their potential. Working with Saudis might correct this asymmetric information; improved perceptions of national work ethic were documented in the UAE following increased exposure in the workplace (Al-Waqfi and Forstenlechner 2010).

[11] There is ample room for this transfer of value between sectors. In 2011, for example, the labor share of GDP in Saudi Arabia, per the Conference Board's 2018 Total Economy Database, was only 22%, placing it 123th out of 125 countries measured.

Moreover, the reforms assume low and declining labor productivity in Saudi Arabia is in part due to the availability of very cheap labor (Diwan 2018). Pushing the firms least able to adjust to higher labor costs to shrink or close could increase the allocation of resources to firms better able to utilize technology, capital, and middle-skilled workers, a boon for the economy overall.

The government has not been reluctant to use fiscal space to absorb some of the increased costs through payroll rebates to prevent sharp increases in consumer prices or firm shutdowns.[12] The government has also investment in an array of labor market policies to eliminate other frictions to private sector work; such as promoting of job matching services, part-time and flexible work, and other arrangements for students, women, and other sensitive groups.

[12] While large deficits during the oil price crash are a concern, the fiscal deficit was reduced to around 5% of GDP by 2018. Moreover, central government gross debt remains low at around 19% of GDP, compared to assets held by the Public Investment Fund worth 33% of GDP and foreign reserve holdings of 71% of GDP (IMF, 2018a).

4. Saudi Syndrome: Explaining The Persistence of High Unemployment-Low Private Sector Employment

The diagnostic analysis presented in the previous section leads us to three main conclusions with regards to the nature of the Saudi high unemployment- low private sector labor force participation problem. The purpose of this section is to discuss the root causes of these problems. The three conclusions are: First, the analysis of the employment and unemployment composition in Saudi Arabia suggests the shift taking place over the past decade due to Nitaqat has been successful for certain segments, but remains insufficient to counter the magnitude of Saudi labor entering the labor force, particularly young educated Saudi women and men. Second, the cost of Saudi labor to firms remains substantial, with a binding minimum wage for large segments of the Saudi labor force and productivity losses associated with Saudi labor. Third, the Nitaqat program succeeded in generating employment; however, the labor market reform agenda, as described in *Notes on the Nitaqat program* falls short from addressing the two preceding conclusions of large-scale Saudi labor entry into the market and high Saudi wages.

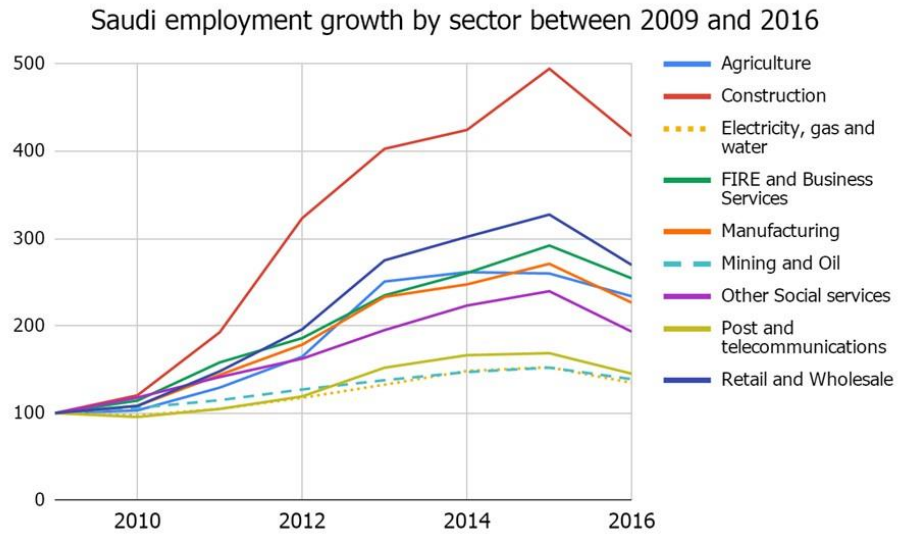
The diagnosis of the Saudi labor market reveals a disequilibrium, persistent due to structural factors; in this section, we discuss specifically two urgent constraints: a supply-demand skill mismatch exacerbated by insufficient job creation (a root cause corresponding to the first conclusion above), and the prevalent Saudi employment preferences and beliefs which recent institutional frameworks, namely Nitaqat program and the increasing minimum wage, have not yet altered (corresponding to the second conclusion above).

Supply-Demand Mismatch, Coupled With Insufficient Job Creation

The structure of the economy in Saudi Arabia is such that, after mining, the largest economic sectors are non-tradable sectors. Specifically, construction and retail are Saudi Arabia's biggest non-oil sectors in terms of employment. According to the labor force survey (2017Q4), employment in construction and retail, among those enrolled in social security,[13] was at ~65%. This figure of employment concentrated in the two sectors combined in GOSI was ~70% in 2016. Our analysis also shows that Saudi employment in each of the construction and retail sectors has witnessed the fastest growth, in comparison to other sectors, since 2011 (*Figure 22*). This implies that these two sectors contribute most jobs added to the economy in every period. For example, in the period of 2015-16, we estimate new jobs in construction and retail represented 70% of the total jobs added to the economy (*Figure 23*).

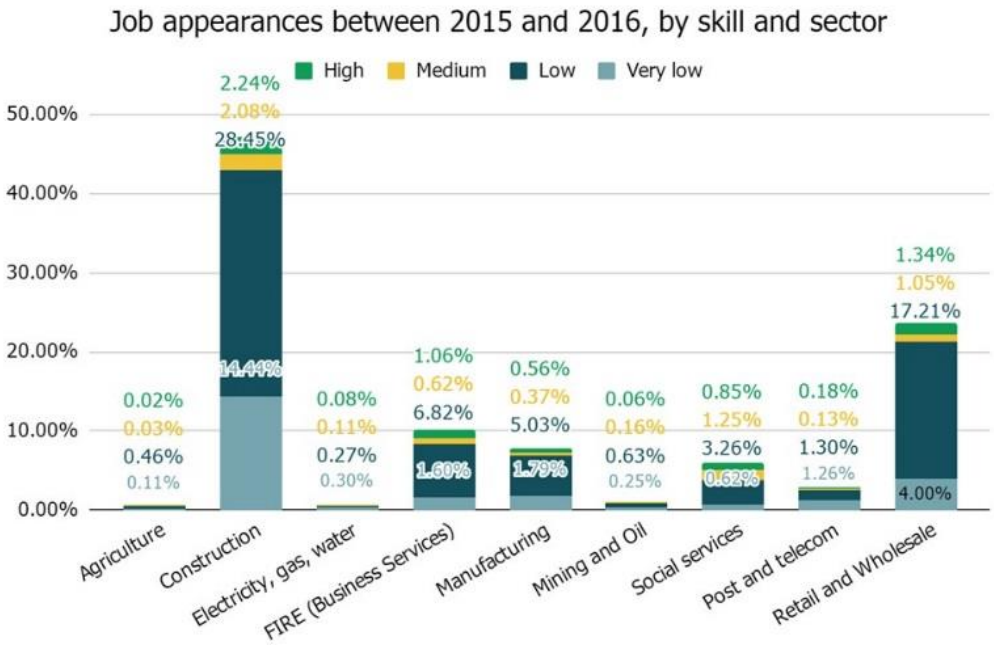
[13] That is, workers who are not civil servants

Figure 22: Growth In Saudi Employment, By Sector



Source: Saudi Social Security Dataset (GOSI)

Figure 23: Job Appearances In The Saudi Economy (2015-2016)



Source: Saudi Social Security Dataset (GOSI)

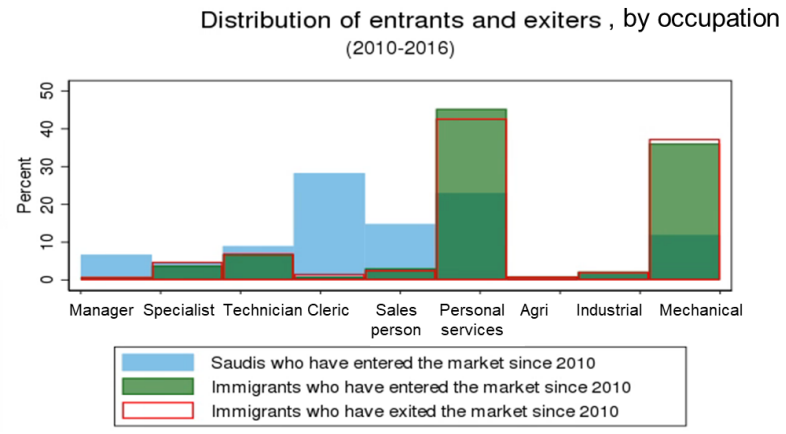
While large and vital to the Saudi GDP and employment growth, the construction and retail sectors attract and rely predominantly on low-skilled and low-cost workers. *Figure 23* also shows most jobs added in construction and retail, between 2015 and 2016 are suitable for very low- or low-skilled workers. Consequently, 87% of total job appearances, that is across sectors, between 2015

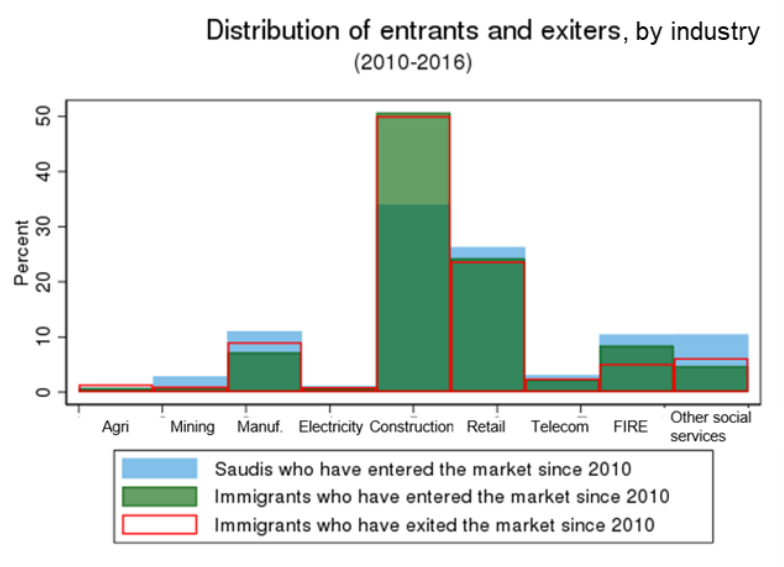
and 2016 are suitable for very low- or low-skilled workers. This result is consistent with the drop in the rate of unemployment among high school graduates in the economy *(discussed in Section 3)*. With the majority of unemployed Saudis being medium-skilled young college graduates, and predominantly women, the economy faces a clear mismatch between skills supply and demand. The labor market is primarily demanding very low- and low-skilled workers, not the medium-skilled Saudis with higher education.

Recent labor reforms, such as Nitaqat and the expatriate levy, do not fully align with this reality, as these efforts are centrally primed for "substituting" expatriates with Saudis. More specifically, while the quotas force firms to hire more Saudis, the expatriate levy increases the price of "the substitute," making the decision to hire Saudis relatively less costly. As such, Nitaqat and expatriate levies, used together, seek to reduce firm reliance on foreign labor and encouraging firms to hire nationals instead (Randeree 2012).

However, there is evidence to suggest that Saudis and expatriates are not substitutes. Using social security data, we are able to observe the distribution of expatriates who have entered and exited the Saudi market since 2010 and compare it to the distribution of Saudis who entered the market between 2010 and 2016. *Figure 24* is a histogram showing the percentage of jobs added to the economy between 2010 and 2016, and are held by Saudis, by occupation, versus the percentage of jobs added to the market and are held by expatriates, versus jobs held by expatriates which ended sometime between 2010 and 2016, by occupation. The histogram shows that expat-held jobs which ended between 2010 and 2016 were replaced by jobs held by expats. New jobs were added to the economy which are held by Saudis – these are predominantly in clerical, sales personal services and mechanical occupations. Practically, this data suggests that expatriates who exited the market between 2010 and 2016 have been largely replaced by expatriates. Saudi employment does not follow a specific trend with respect to expatriate exit or entrance. Additionally, the clear concentration of Saudis and expatriates, by sector and occupation, supports the hypothesis that Saudis and expatriates are not substitutes and are potentially needed to perform different types of jobs on the skills spectrum (also confirmed in study by Al-Shanbri et al. 2016).

Figure 24: Distribution Of Individual Labor Market Entrants And Exit-ers (2010-2016)





Source: Saudi Social Security Dataset (GOSI)

Furthermore, firm-level labor productivity measures support the above findings that firms are unable to substitute expatriates for Saudi workers, but rather have absorbed Saudi workers to comply with Nitaqat. Labor productivity is a measure of how efficiently workers in an economy or sector or firm produce output. We use the Saudi Social Security data merged with Customs data which provide information on the value of exports for exporting firms to study the growth in exports per worker for these firms. Linking firm-level social security records to customs data allows a measurement of firm productivity, in the form of the monetary value of non-oil exports per worker. We estimate a linear regression (equation 2) in search of evidence that Saudi employment that took place between 2011 and 2016 has indeed affected firm-level labor productivity outcomes. The result underscores these concerns. A fixed effects regression at time and firm level, controlling for firm size and firm sector based on the 2011-16 data, shows that, an additional Saudi worker is associated with a statistically significant fall in productivity of about $135 per worker per year *(Figure 25)*.

Equation (3):

$$\Delta Exports\ per\ worker_{i,t} = \alpha + \beta_1 \Delta Saudi\ employees_{i,t} + \beta_2 \Delta NonSaudi\ employees_{i,t} + \gamma_{i,t} X_{i,t} + \eta_t + \varepsilon_{i,t}$$

Figure 25: Exporters' Labor Productivity And Workforce Composition

OLS Regression, Non-Oil Exporters, 2011-16 *(Controlling for Firm Size and Sector, Region w Time FE)*	
How do non-oil exports per capita change with hiring over time?	
Additional Saudi Employee	**-$135.25***
	[$78]
Additional Expat Employee	**$0.63**
	[$5.81]
Observations (Firm-Years)	4,879
Observations (Firms)	1,553
Robust standard errors in brackets	
*** p<0.01, ** p<0.05, * p<0.1	

Source: Author's calculation using the Saudi Social Security Dataset (GOSI)

The experience of sectors selected for full Saudization further corroborates the hypothesis that Saudis and expatriate workers are complements rather than substitutes. In March 2016, the mobile phone sale and repair sector was selected for full Saudization, with quotas rising to 50% by June and 100% by September (Arab News 2016). While potentially an attractive sector for many young Saudis in terms of working conditions, the impact of the move on the sector was substantial, with more than half of all firms in the sector closing within a year of the announcement. Overall employment in the sector shrank from 32,527 to 9,536, and Saudi employment fell from 7,278 to 3,217. An important caveat is that we cannot observe the long-term effect of the quota in the data yet. Another plausible interpretation for the drop in employment in the mobile phones sector is that this policy change triggered competition for low-skilled Saudis - a scarce resource, and firms may have struggled to retain low-skilled high-cost but also high-in-demand Saudis, and so these firms decided to shut down.

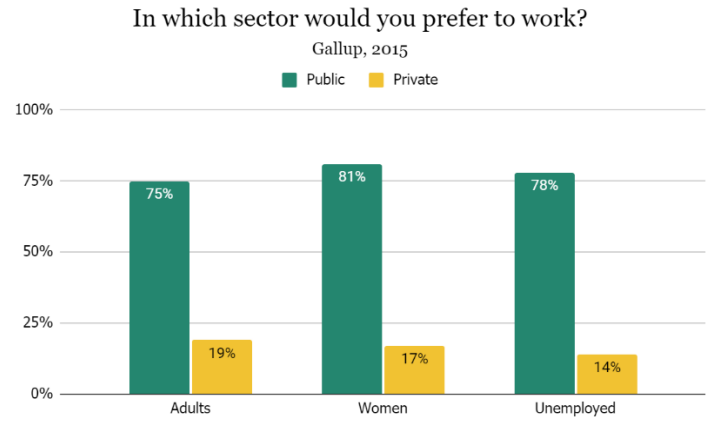
Following directly from the above constraint, a serious part of the problem appears to the insufficient creation of adequate jobs to reach Saudi full employment. Overall employment growth in the Saudi economy has been slowing down. While the economy has added a net positive amount of jobs annually, it has done so at a decreasing rate since at least 2012-2013 (*Figure 22*). This is incompatible with the increasing number of young Saudis entering the labor market annually. For example, per the most recent Saudi Labor Force Survey, around 343,500 Saudis entered the labor force in the period between 2017Q2 and 2018Q2; similarly, 321,244 Saudis entered in the period between 2016-2017. Yet between 2016 and 2017, only around 89,000 Saudi jobs were added to the private sector. Additionally, as less than 15% of jobs are medium- and high-skilled occupations (Social Security data), the outlook is complicated and unfavorable to the college educated job seeker (who at many times is a woman. As such, the current structure of the economy may not support a scenario in which Saudis can productively participate in rewarding jobs.

Saudi Preferences And Beliefs

The availability of public sector jobs, an outside option perceived as highly probable to Saudi nationals, has very likely been a critical factor contributing to the persistence of unemployment. As discussed in *Section 2*, a fundamental pillar of Saudi Arabia's model is, historically, guaranteed jobs in the public sector. This information on likelihood and return of public employment is available and known to Saudi youth and is likely to influence their preferences and decisions in joining the labor market. In 2015, a Gallup survey revealed that 78% of the unemployed in Saudi Arabia prefer to work in the public sector, citing job security as a primary reason. Only 14% expressed preference to work in the private sector (*Figure 26*). The vast literature on Saudi and Khaleeji participation in the private sector points towards historical social stigma associated with non-government work among nationals.

Such preferences potentially translate into a high reservation wage preventing greater employment of Saudi workers in the private sector. If that was the case, we expect Saudi job seekers to be turning down openings in the private sector and staying unemployed until employment in the public sector becomes available, potentially generating "wait unemployment" (Hyder 2007). Alternatively, Saudi job seekers may take on employment in the private sector but depart from the job once a public sector job is available. We expect Saudi workers to be following both these strategies. The latter is evident given the observed tenure for Saudi workers across occupations. Additionally, 24% Saudi workers asked about the reason for leaving their last job in the Labor Force Survey have indicated, in 2018Q4 round, having had a low salary in the job, suggesting a wage perceived as unacceptable compared to the reservation or expected wage. This was the highest category selected, followed by being laid off at ~24% as well.

Figure 26: Sector Preference For Saudi Workers



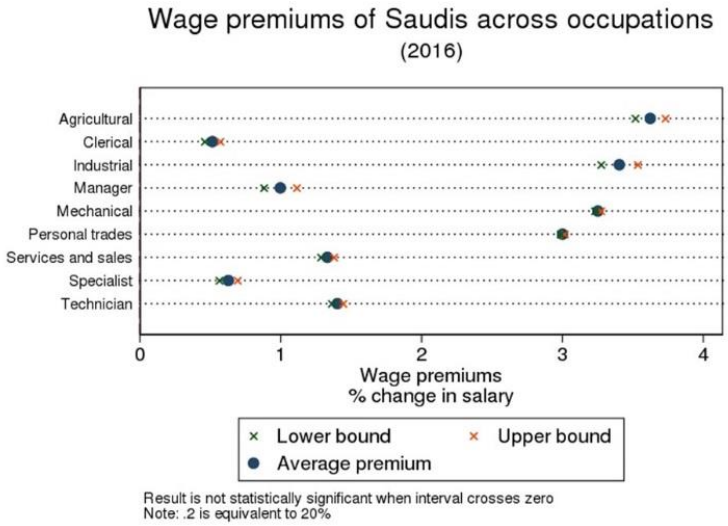
The majority of Saudis in the private sector earn significant wage premiums over expatriates as evidence in *Figure 16* that illustrates the distinct wage distributions for Saudi workers compared to expatriate workers. We use a linear regression to estimate the wage premium on being a Saudi worker relative to an expatriate worker, controlling for observed characteristics: gender, tenure,

age, industry and level of schooling. We find positive and significant wage premia for Saudi workers – relative to expatriates – across occupations (*Figure 27*). The wage gaps are most pronounced in agricultural, personal trade and mechanical jobs; whereas the gap is smaller in managerial or specialist positions which we expect are higher paid jobs. These wage gaps reflect the high minimum wage for Saudis (SAR 3000 per month in 2016) but these also reflect a high reservation wage of Saudis.

Last decade's labor market reform attempts particularly minimum wage increases and also Nitaqat seek to address Saudi workers' resistance to join the private sector and high reservation wage, yet effectiveness is uncertain. We unpack the argument by considering two possible scenarios under Nitaqat.

In scenario one, Saudis are reluctant to take on private sector work, invest in building relations in the private sector, or engage in on-the-job training, since the option of switching to a public sector job is seen as likely in the near future. In the context of Nitaqat, the temptation to shirk could be especially powerful, as workers know that they are difficult to replace -- they would feel the need to work hard. Simultaneously, employers are unlikely to exercise their power to "punish" shirking Saudi employees because they will want minimal disruption to their Saudization quota performance, measured on a weekly basis. This scenario implies low effort and hence lower productivity of workers relative to the wage premium firms pay to Saudi workers. Both scenarios ultimately depict the complexity of Saudi integration into the private sector.

Figure 27: Wage Premium For Saudis In The Private Sector, Compared To Expatriates



Source: Saudi Social Security Dataset (GOSI)

5. Conclusion

Having explored the dynamics underpinning Saudi unemployment in the context of low integration in the private sector, it is clear that overcoming these constraints requires long-term structural

shifts in the Saudi economy. The journey to adequately integrate Saudis in the private sector will involve the instruments put in place throughout the Saudization era and increases in Saudi employment in the private sector over the past decade are a testimony to the success. Yet, ultimately, the unemployment challenge will not be resolved by shifting the existing stock of well-paying jobs from expatriate into Saudi hands, especially because higher-paid expatriates bring the skills and experience necessary for the Saudi economy and for job creation.

Our findings in this paper indicate that the shortage of jobs suitable for young educated Saudi workers will hinder an improvement in labor market outcomes: the majority of jobs appearing in the economy may not be suitable for the predominantly young, educated and female unemployed Saudis and suitable jobs are not available at an adequate pace. Saudi's resistance to work in the private sector, demonstrated through preferences and a high reservation wage, make the effort to boost employment costly and more challenging. Labor market policies since 2011, including Nitaqat, the expat levy and hiking the minimum wage, have been different attempts to address these issues yet while successful at improving the labor market outcomes of certain groups, they have been less effective for others.

As such, the necessary reform is in turn difficult and complex. Our findings point towards to main areas of action: the first being attracting or enabling the growth of sectors and firms that generate skilled jobs to match the profile and preferences of the unemployed groups. At the same time, addressing Saudi's reservations on private sector employment is necessary. This can include, on one hand, efforts to reduce the wedge between private and public sector employment. Groh et al (2016), for example, suggest public sector reform that makes the conditions, such as working hours, of public sector jobs more comparable to conditions in private sector jobs. On the other hand, the more pronounced unemployment levels among women call for special effort to understand female unemployment and promote female inclusion in the workplace.

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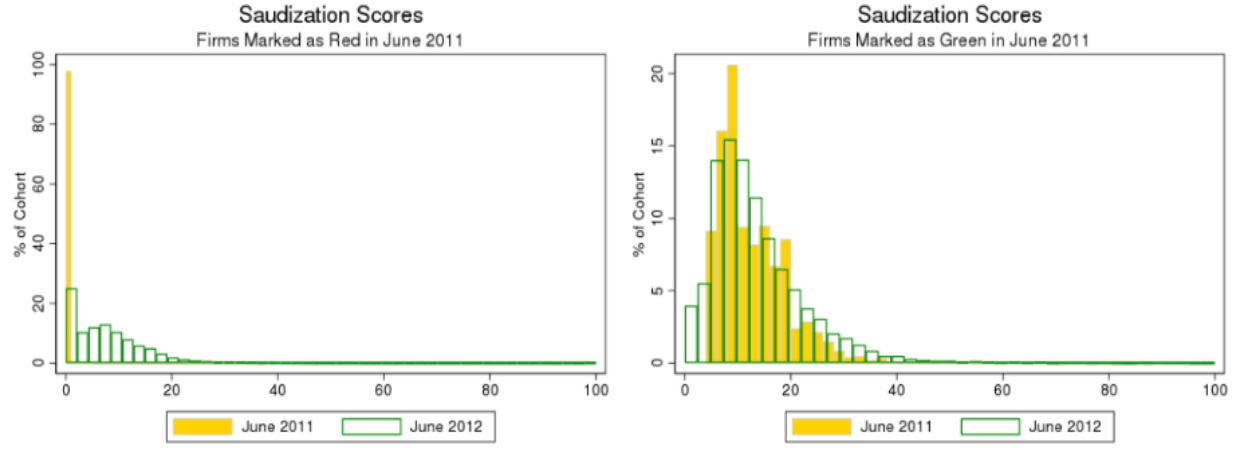
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Appendix 1 – Nitaqat (Saudization Policy) Mechanics

Compliance with the Nitaqat bands was fast, with the bulk of the firm distribution rapidly shifting from red and yellow into green. Quotas were initially calibrated so that the majority of firms would be obliged to shift their hiring behavior. At the start of the program in June 2011, 71.4% of non-micro firms – that is, firms with at least 10 workers – were classified as red, 11.5% as yellow, 15.7% as green, and only 1.5% as platinum. Within a year, that had shifted to 37% combined red and yellow, compared to 63% green and platinum. By June 2013, only 15% of non-micro firms were in the red and yellow bands; that number fell to 8% by 2014 and 3% by 2016.

This led to a large increase in Saudi employment, concentrated among firms that were under threat of sanctions. *Figure 28* highlights that, within a year of the announcement of the program, the Saudization scores among firms initially marked as red had increased enormously and no longer clustered around zero. Contrastingly, firms marked as green showed no trend increase, as underscored in *Figure 29*.

Figure 28: Saudization Scores Within The Initial Cohort, June 2011 Versus June 2012



Source: Nitaqat Program – Ministry of Labor And Social Development

Figure 29: Summary Statistics, Saudization Scores Within The Initial Cohort Of Firms

	Firms Marked as Red at Program Start				Firms Marked as Green at Program Start			
Saudization Score	*Mean*	*25th Pctl.*	*Median*	*75th Pctl.*	*Mean*	*25th Pctl.*	*Median*	*75th Pctl.*
June 2011	0.1%	0.0%	0.0%	0.0%	13.0%	8.0%	11.1%	16.7%
June 2012	8.3%	2.1%	6.7%	11.7%	13.9%	7.7%	11.6%	17.8%

Source: Nitaqat Program – Ministry of Labor And Social Development

The February 2013 minimum wage was similarly influential, with an immediate shift in the wage distribution among Saudis. While the wage was not technically legally binding, it operated by requiring a Saudi to be paid at least 3,000 SAR per month to be counted as a full Saudi employee in the Nitaqat tabulation -- lower salaries were counted as fractional. 55% of Saudis registered in

the GOSI dataset earned less than 3,000 SAR in 2012. That number fell to 10%.in 2013 and 5% in 2014.

In recent years, small and very small firms have been disproportionately likely to bear the brunt of the Nitaqat sanctions. By 2017, 94% of non-micro firms in the red band were small, despite them only making up 85% of the total number of non-micro firms in the economy, while large firms were virtually all green or platinum. Moreover, 22% of micro firms were categorized as red.

More recently, Saudization policy became more complex. As part of Vision 2030, a new, more complicated system known as "balanced Nitaqat" was unveiled in mid-2016, which would replace the Saudization percentages with a point system based on five characteristics of a firm's workforce: hiring of Saudis, hiring of Saudi females, average wages paid to Saudi, Saudis in very high-wage positions, and average Saudi tenure (EY 2016). Eventually, this idea was scrapped, and replaced in September 2017 with a revamped quota system, which shrank the dividing line between micro and small firms from 10 to 6, added two additional size categories, and substantially tightened the bands. Sectors have once again been targeted for 100% Saudization, particularly in retail.

Below summarizes the evolution of the Nitaqat quotas for the Wholesale and Retail Trade sector, showing the increase in complexity as firm sizes and colors multiply.

2011: Original Nitaqat

Firm Size	*Small*	*Medium*	*Large*	*Huge*
# Workers	*10-49*	*50-499*	*500-2,999*	*3,000+*
Red	0-4%	0-4%	0-9%	0-9%
Yellow	5-9%	5-16%	10-23%	10-24%
Green	10-26%	17-33%	24-34%	25-36%
Platinum	27%+	34%+	35%+	37%+

2014: Addition of Micro Firms and Green 1-3

Firm Size	*Very Small*	*Small*	*Medium*	*Large*	*Huge*
# Workers	*0-9*	*10-49*	*50-499*	*500-2,999*	*3,000+*
Red	0 Saudis	0-4%	0-4%	0-9%	0-9%
Yellow	-	5-9%	5-16%	10-23%	10-23%
Green 1		10-15%	17-22%	23-27%	23-27%
Green 2	1+ Saudis	16-21%	23-28%	24-27%	24-27%
Green 3		22-26%	29-33%	28-31%	28-31%
Platinum	-	27%+	34%+	35%+	35%+

2017: Quota Tightening and New Firm Sizes							
Firm Size	*Very Small*	*Small*	*Medium 1*	*Medium 2*	*Medium 3*	*Large*	*Huge*
# Workers	*0-5*	*6-49*	*50-99*	*100-199*	*200-499*	*500-2,999*	*3,000+*
Red	0 Saudis	0-8%	0-14%	0-17%	0-19%	0-24%	0-25%
Yellow	-	9-16%	15-22%	18-23%	20-25%	25-30%	26-31%
Green 1	1+ Saudis	17-20%	23-26%	24-27%	26-29%	31-35%	32-36%
Green 2		21-25%	27-31%	28-32%	30-34%	36-41%	37-42%
Green 3		26-33%	32-39%	33-40%	35-42%	32-50%	43-51%
Platinum	-	34%+	40%+	41%+	43%+	51%+	52%+