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IN SEARCH OF A NEW DEVELOPMENT MODEL FOR TUNISIA: ASSESSING THE PERFORMANCE OF THE OFFSHORE REGIME

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Abstract

The main purpose of this paper is to examine the offshore regime in Tunisia and to assess the overall effects of this export promoting strategy for the years 2002-2014. Using firm-level data, we look in particular at its impact on turnover, productivity, wages, job creation, profitability and survival of firms. We compare offshore firms to onshore firms to assess if the incentives that were provided to the former have been successful. Analysis of offshore premium on samples including all firms and only exporting firms show that both categories of offshore firms have a better performance for all indicators. Generally, the important gap between the performance indicators such as turnover, productivity and wages and the very high level of profitability displayed by offshore firms, all categories considered, compared to onshore firms points out that incentives given by the Tunisian Investment Code is benefiting more firms than to the country. When considering the specific example of offshore exporting and importing firms, performance is weaker than their onshore counterparts across the board, except in the areas of gross job creation and profitability. Lower productivity of two way offshore traders suggest that these firms are low performers and that they self-select in the offshore regime in order to cover their export fixed costs. The survival analysis highlights an increased probability that offshore two-way traders will exit the market once tariffs and tax exemptions privileges end, usually after 10 years. Thus, incentives given in the Tunisian Investment Code are attracting mainly firms in lower rungs of the Global Value Chains. Instead of incentives, Tunisia should rethink its Investment Code in favor of highly added sectors that requires more complex skills and capital.

JEL Classification: F14, L15

Keywords: trade premium, trade policy, offshore firms

ملخص

الغرض الرئيسي من هذه الورقة هو دراسة النظام البحري في تونس وتقييم الآثار الإجمالية لهذه الاستراتيجية لتعزيز الصادرات للسنوات 2002-2014. باستخدام البيانات على مستوى الشركة، ننظر بشكل خاص في تأثيره على الإنتاجية والأجور وخلق فرص العمل والربحية وبقاء الشركات. نقارن الشركات البحرية بالشركات البرية لتقييم ما إذا كانت الحوافز التي قدمت إلى السابق ناجحة. ويظهر تحليل الأقساط البحرية على العينات بما في ذلك جميع الشركات والشركات المصدرة فقط أن فئتي الشركات البحرية لديها أداء أفضل لجميع المؤشرات. وبشكل عام، فإن الفجوة الهامة بين مؤشرات الأداء مثل في الإنتاجية والأجور ومستوى الربحية المرتفعة جدا مقارنة بالشركات البرية تشير إلى أن الحوافز التي يقدمها قانون الاستثمار التونسي تستفيد من المزيد من الشركات من البلد. وعند النظر في المثال المحدد للشركات المصدرة، فإن الأداء أضعف من نظيراتها البرية في جميع المجالات، باستثناء مجالات خلق فرص العمل الإجمالية والربحية. ويشير انخفاض إنتاجية التجار في الاتجاهين في الخارج إلى أن هذه الشركات منخفضة الأداء وأنها تختار ذاتيا في النظام البحري من أجل تغطية تكاليفها الثابتة للتصدير. ويبرز تحليل البقاء على قيد الحياة احتمالا متزايدا بأن يخرج التجار في الاتجاهين في الخارج من السوق بمجرد انتهاء امتيازات التعريفات الجمركية والإعفاءات الضريبية، وذلك عادة بعد 10 سنوات. ومن ثم، فإن الحوافز المقدمة في قانون الاستثمار التونسي تستقطب أساسا الشركات في درجات أدنى من سلاسل القيمة العالمية. وبدلا من الحوافز، ينبغي أن تعيد تونس النظر في قانون الاستثمار لصالح القطاعات ذات القيمة المضافة العالية التي تتطلب مهارات ورؤوس أموال أكثر تعقيدا.

1. Introduction

The Tunisian government has maintained an offshore regulatory regime to promote exporting manufacturing companies since 1972. This regime relies on an investment law (Law 72-38), which offers firms several tax and duty incentives. Offshore regimes are often applied as part of broader economic reform packages, in order to achieve higher levels of growth. The financial weight of Tunisia's offshore incentives is significant, and questions are now arising about their benefits and whether it is in the country's economic interests to continue to pursue such a strategy. According to the ECOPA (a consulting firm) report commissioned by the International Finance Corporation, advantages granted to sole exporting firms under the offshore regime represent about 52% of the total cost of fiscal and financial incentives for the period 2008-2011. Some economists argue that offshore regimes are an effective tool for initial economic improvement; but that they become ineffective once a country develops and opens to trade. Although the offshore regime yielded significant results in the past, the policy debate in Tunisia today raises questions concerning its continued relevance and its contribution to the Tunisian economy.

In light of the above, the central aim of this article is to examine the offshore regime in Tunisia and assess its overall contribution to Tunisian exports. In doing so it aims to contribute to current policy debates around the effectiveness of Tunisia's export promotion strategy. We begin by describing the offshore regime in Tunisia, providing an overview of statistics regarding offshore firms as well as other initiatives undertaken to increase Tunisian exports. We then go on to critically examine the literature on the subject in Section 3, followed by a discussion of the empirical methodologies used to assess the performance of this regulatory regime as well as an overview of the results in Section 4. The findings of the survival analysis are presented and interpreted in Section 5. Observing its effects on turnover, productivity, wages, job creation, profitability and survival, we conclude in Section 6.

2. Offshore Regime and Trade Policy in Tunisia

After nearly twenty years of protectionism following the independence of Tunisia (1956) and a policy based on import substitution, the country started to change gradually its trade policy and undertook reforms towards more openness. Several free trade agreements were adopted as part of this transformation. A major measure was the creation of an offshore regime in order to attract foreign direct investment for export-oriented production.

2.1 The offshore regime in Tunisia

The idea for the offshore regime emerged in the late sixties at a time when there was growing discontent with the socialist and collectivist policies that had been adopted by the Minister Ahmed Ben Salah. These policies were viewed by many as having contributed to a protracted economic and social crisis. This domestic context combined with a growing global trend and external pressure for liberalization led to the eventual abandonment of socialist policies in favor of private initiative. A new development strategy thus focused on the promotion of exports and the implementation of the offshore regime by the adoption of the Law 72-38. This regime contributed to accelerating Tunisia's liberalization, with some former import-substitution industries shifting to exports.

The offshore regime is now regulated by the Investment Incentives Code (Code d'Incitations aux Investissements). This regime offers several incentives to exporting companies, as mentioned in Table 1.

The Investment Incentives Code, as well as the legislation on foreign exchange rate, distinguishes further between "resident" and "non-resident" firms. At least 66% of the capital of the latter is held by non-residents. Wholly exporting nonresident firms have the obligation to repatriate their profits.

This dual track strategy earned some success at that time as offshore firms, employed low-skilled labor and increased the exports of the manufactured products. But its limits became apparent beginning in the 80s. The dichotomy between the highly incentivized offshore sector and tightly regulated onshore firms had the effect of weakening the economy, with revenue losses, low technology transfer and few if any employment opportunities for the growing skilled labor force. The era of "liberalization", witnessed a paradoxical mix of specific forms of state intervention combined with privatization and opening of the economy to foreign investment and capital flows. This period was characterized by growing political tensions and a severe balance of payment crisis that paved the way for the adoption of a Structural Adjustment Program [SAP] in late 80s. As Figure 1 shows, exports increased significantly during the period 2002-2014, and the offshore firms contribute to the largest share of exports.

We observe in Figure 2 that exports from offshore firms represent a steady average share of about 73.9% of total exports during the period, with two peaks in 2003 and 2014 (79% and 80%) and a minimum in 2008 (69%). As regards the share of offshore firms in total turnover and benefits, it corresponds to about 18% and 25.3%, respectively. The evolution of the three indicators is similar. A gap between turnover and profits appeared in 2003 with a larger increase in profits compared to turnover.

Figure 3 shows the share represented by offshore firms in each sector. The largest share of offshore firms is found in the "transport equipment" manufacturing sector, where 38% of operating firms are offshore and employ 88% of employees. This sector is followed by "computer, electronic, electrical equipment, machinery and optical products" manufacturing sector and then by the "Textile, clothing, leather and footwear" manufacturing sector. Since the implementation of the offshore regime nearly thirty years ago, the labor-intensive textile manufacturing sector has attracted the largest share of FDI. Offshore firms appear to be less attracted by services sectors such as "Administration and support service activities", "Professional, scientific, technical services activities", "Information and communication services", "Whole sale, and retail trade", etc.

In Figure 4, we observe that the relatively small share of offshore firms (2.79% of total number of firms in average) accounts for more than a fifth of total employment in average (21.25%). Micro in Figure 4 refers to firms employing less than 6 employees. Small refers to firms employing at least 6 employees and less than 49 employees. Medium firms employ between 49 and 199 employees. Large firms are enterprises employing more than 199 employees. The largest shares of offshore firms involve medium and large enterprises and exceed 38% of firms and 40% of employment for both categories of firms.

Figure 5 provides more details about the contribution of offshore firms to employment in Tunisia during the period 2002-2014. The Figure shows the predominance of the onshore regime in the gross creation of jobs. The contribution of offshore firms declined after 2008 and 2011. While the decline of 2011 is common to both regimes and appears to be a direct consequence of the political and social instability due to the Tunisian revolution that year, the drop after 2008 only concerned offshore firms. On the other hand, a reduction in job creation by onshore firms since 2003 has been mitigated by the steady job creation of offshore firms. Altogether, during the period, 2 321 226 jobs have been created, of which 1 679 157 (72.34%) from onshore firms and 642 069 from offshore firms (27.66%).

2.2 Other major trade policy measures

Following the trade policy reform initiated in the early seventies with the implementation of the offshore regime, the 1980s saw the implementation of the SAP. Major reforms were adopted such as unilateral tariff liberalization, the reform of import procedures, and the removal of many quantitative import restrictions. Tunisia also joined the newly established World Trade

Organization in 1995. Tunisia further intensified its trade liberalization process through the negotiation of several preferential trade agreements, noticeably with the European Union (1995), the Greater Arab Free Trade Area (GAFTA, 1998) and Turkey (2004). The agreement signed with the European Union, one of the most important country's preferential trading arrangements, resulted in the dismantling of industrial tariff barriers for the country's main industrial products by January 1st, 2008. The government also adopted a number of export development programs as well as established several trade support institutions, such as the Industry Promotion Agency (API) and the Export Promotion Centre (CEPEX) created both in 1973. All of these measures were intended to facilitate trade and the support of export firms. They have resulted in a significant decrease in tariff levels as well as an important increase in trade flows, mostly affecting the industrial sector.

In addition to State measures, non-governmental entities such as the Employers Trade Union (Union Tunisienne de l'Industrie, du Commerce et de l'Artisanat, UTICA) and the Arab Institute of CEOs (Institut Arabe des Chefs d'Entreprises, IACE) contribute to help firms in their development by providing them assistance and support.

These measures were relatively successful as Tunisian trade flows registered a steady increase during the last two decades. These results are in part due to the implementation of the offshore regime. These measures including the dual-track regime with its tax holiday for offshore firms, have recently come under scrutiny. Questions have been raised about their continued relevance and effect on depriving the government of additional revenues. Maintaining such privileges, while a post revolution Tunisia is experiencing a difficult economic situation, seems inconsistent.

3. Literature Review

There has been a significant convergence over the last several decades amongst policy makers and researchers on the benefits of international trade to both developed and developing countries. Research on the subject has underlined the various benefits of trade on growth and welfare. These studies are mainly based on macroeconomic analysis.

More recently, researchers turned to firm level data to explore the effects of foreign exposure on enterprises performance. Most of them focus on the relationship between exports and productivity in the manufacturing sector and show that exporters are more productive than non-exporters. Bernard and Jensen (1995) have written a seminal empirical work on this subject, using panel data from U.S manufacturing plants to demonstrate that exporting plants have a strong performance. This export premium can be explained by two hypotheses. The self-selection hypothesis suggests that the larger productivity of exporting firms is due to ex ante differences. Indeed, because of the additional costs firms have to pay to enter foreign markets (e.g. transport costs, distribution costs, etc.), or because of the fiercer competition they have to face, only the most successful ones can become exporters. Alternatively, the learning-by-exporting hypothesis refers to the improvement of the performance of firms that begin exporting due to their learning from international buyers and sellers as well as the competition they face. The self-selection hypothesis suggests that only the most productive firms can bear the fixed costs of importing intermediaries. The learning-by-importing hypothesis points out the positive effects of imports on productivity due to the use of intermediaries of a better quality, access to a broader range of them or extracting embodied technology from them. Several subsequent researchers have built upon the work of Bernard and Jensen, examining productivity differences between exporters and non-exporters and testing one or both hypotheses. They have found that exporting firms are more productive (Bernard and Jensen, 1995), have demonstrated with empirical evidence their self-selection and learning-by exporting hypotheses (Iacovone et al, 2012).

These studies focus mainly on exporters in developed countries. Evidence for developing countries is still scarce though there are some exceptions, including a few studies on Latin American (Alvarez and Lopez, 2005; Clerides et al. 1998) and Asian (Kray, 2002; Blalock and Gertler, 2004; Haidar, 2012) countries. Considering Chilean plant-level data, Alvarez and Lopez (2005) document evidence of both self-selection hypothesis and learning-by-exporting hypothesis. Haidar (2012) investigates the export premium and explores the relationship between Indian firms' productivity and exports during 1991-2014. The study also confirms the self-selection hypothesis but not the learning-by-exporting hypothesis, which is consistent with recent heterogeneous firms' model of international trade. In North Africa, only Morocco has been studied during the period 1984-1991 (Clerides et al., 1998).

Evidence about the relationship between imports and firms' performance is much poorer (Kasahara and Lapham, 2008; Castellani et al., 2010). Nonetheless, some theoretical arguments predict a mutual causality between imports and a better performance. These arguments are reflected in self-selection hypothesis and learning-by-importing hypothesis. With the emergence of new datasets reporting information about imports, recent empirical work has been able to explore the relationship between productivity and exports as well as productivity and imports, comparing exporters, importers or exporters-importers to firms only selling on domestic markets. This body of research concludes generally that firms that both export and import are the most productive ones, followed by sole importer firms, then sole exporter firms. The least productive companies are found to be the ones that only serve the domestic market.

More recently, papers related to trade and firm performance have enlarged their scope of study and observed other firm characteristics than productivity, e.g. wages and profitability (Serti et al., 2010; Temouri et al., 2011). However, due to a lack of data, this kind of analysis remain limited and many of them suffer from unobservable characteristics bias and lead to mixed results. There was also a recent investigation into the relationship between firm survival and performance as an indicator of performance (Baldwin and Yan, 2011; Wagner, 2011). The underlying hypothesis is that non-exporters are in general less efficient than exporters and thus are more likely to exit.

This general literature on exports and firm performance should be read alongside literature on the performance of firms enjoying fiscal and financial privileges for exporting. Given the expansion of China's exports, many works have studied the different policies conducted in this country to encourage exports. Wang (2013) assesses the impact of Special Economic Zones (SEZ) created at the municipality level. He finds that the SEZ program increase foreign direct investment and wages, but to a lesser extent for early created zones. On the contrary, Dai et al. (2016) show that firms engaged in China in the activity of assembling tariff-exempted imported inputs into final goods to resale in foreign markets have a lower performance than other firms.

Several studies have also been written to assess the case of offshore firms in Tunisia (ECOPA, 2012; OECD, 2013). These works investigate the offshore regime and highlight its main features but are not based on a strong empirical analysis. Baghdadi (2015) has investigated how firm type, including offshore, affects some aspects of the firm's performance.

The originality of the current work is manifold. First, there has yet to be a comprehensive investigation into the efficiency of the Tunisian offshore regime. Second, we use a unique firm level database since it is comprehensive and lists all existing firms in Tunisia. Therefore, we expect that results generated from our work will be complete. Third, the wealth of data allows us to investigate all types of manufacturing as well as services companies, i.e. all offshore and onshore firms, offshore and onshore exporters and non-importers, offshore and onshore exporters and importers. This is of a great interest since services and imports are understudied. Fourth, the abundance of data makes it possible to examine not only productivity but also

further dimensions of exporter performance for which empirical evidence is normally lacking for developing countries, e.g. turnover, wages, job creation, profitability and survival. Fifth, our work should have policy implications since Tunisian policy makers are currently reviewing the offshore regime and discussing its benefits. This article seeks to contribute to the debate by empirically investigating the efficiency of the offshore regime and its effect on the performance of Tunisian firms. This will be the subject of Section 4.

4. Empirical Strategy

We apply the following two methodologies in order to assess the overall effects of the Tunisian offshore export promoting strategy. We first estimate the offshore premium which is the average percentage difference between offshore and onshore firms in the same sector, governorate and during the same year. Second, we test the robustness of our results using the difference-in-difference estimator methodology.

4.1 Data used

The main data set used for this study is the Tunisian registry of firms, namely the Répertoire National des Entreprises (RNE), collected by the National Institute of Statistics in Tunisia (Institut National de la Statistique). The RNE uses information from the social security fund (Caisse Nationale de la SécuritéSociale – CNSS), which is the source for the employment data, as well as from Tunisian Customs, the Tunisian Ministry of Finance, and the Tunisian Investment Promotion Agency (l'Agence de Promotion de l'Industrie et de l'Innovation – APII). A major and unique advantage of the Répertoire is that it accounts for all enterprises and covers a relatively long period of time. We only include private firms in our sample. Thus, this database contains information on the number of employees, age, main activity as well as trade regime categorization (i.e. offshore or onshore) of all registered private firms. This allows us to examine the dynamics of both categories of firms, which are often not covered by firm censuses, and especially to assess the contribution of the preferential offshore regime by estimating the offshore premium. As regards productivity and profitability of firms, the RNE was merged with profit and turnover data from Tunisian Ministry of Finance. Finally, the RNE database allows us to track the exit and entry of firms over time, which will be valuable for conducting our survival analysis in Section 5. It is also very important to bear in mind that this database concerns firms and not establishments. We also exclude firms that report less than one employee in order to take into account only active firms. Indeed, the National Institute of Statics found that 8% of the registered self-employed firms (reporting no employees) are uncompetitive survivors usually called "falsely active" or "zombie firms". A detailed description of the RNE is presented in Rijkers et al (2014). We consider the period 2002-2014 for our analysis. All variables are described in Table A1 in appendix. Descriptive statistics are presented in Table A2.

4.2 Offshore premium

4.2.1 Offshore premium specification

In our investigation of offshore premium, we adopt a similar methodology to that employed in much of the recent literature dealing with trade premium. Trade premium is pointed out to be the ceteris paribus percentage differences in firm characteristics between exporting and non-exporting companies (Wagner, 2012; Haidar 2012). The methodology involves two steps. Differentials in levels of the variables of interest between exporting and non-exporting companies are documented in the first step. The trade premium is estimated in the second step for each variable of interest through a linear regression of the log of the variable on multiple control variables.

However, while those papers show new evidence on trade benefits comparing exporting and non-exporting companies, in our work we aim to examine the specific aspect of the offshore

regime by comparing offshore and onshore companies. We focus here in what we call the "offshore premium", which is defined as the ceteris paribus percentage differences in firm characteristics between offshore and onshore companies. We firstly investigate whether a differential exists between offshore and onshore firms as regards wages, jobs, productivity and profitability.

We then estimate for each firm i at each year t the offshore premium following the specification below:

$$ln\ X_i = \alpha_0 + \beta TS_i + \gamma V_i + u_i + \varepsilon_j + \varepsilon_i \tag{1}$$

X_i stands for the firm i variable of interest, which can be, depending on the specification, annual turnover, gross output per worker, average annual wage levels per worker, gross job creation, or profits per worker. TS_i is a dummy variable indicating the trade status of firm i (offshore or onshore, offshore only exporter or onshore only exporter, offshore exporter and importer or onshore exporter and importer, depending on the specification). V_i is a vector of control variables. In addition to the size that has been identified in literature, V_i, includes a foreign ownership dummy and a dummy controlling for tax evasion. Following Rijkers et al (2016), tax evasion variable takes the value of 1 if we detect anomalies in the firm's reporting. For instance, we will consider that the firm is most likely avoiding taxes if reported sales to the social security administration are lower than (i) the wage bill reported to the social security administration (ii) total exports or (iii) total imports recorded in customs transactions data. Indeed, Rijkers et al. (2016) show evidence of tax evasion from some Tunisian companies, especially those politically connected to former Tunisian President Ben Ali and his family. Therefore, controlling for tax evasion is important since it could affect our variables of interest. We also use a dummy for politically connected firms for robustness check. This variable identifies firms with links to former Tunisian President Ben Ali and his family. This list of firms was compiled by the Tunisian Government in the aftermath of the Jasmin revolution after the presidential decree (Decret-Loi 2011-13) issued in 2011 on the confiscation of the assets of 114 individuals belonging to the Ben Ali clan, including Ben Ali himself, his relatives and his in-laws. The list almost exclusively comprises family members. Amongst the assets confiscated thus far are boats, yachts, houses, bank accounts and 662 firms, which we use to identify firms as politically connected. Politically connected firms tend to outperform their competitors in terms of employment, output, market share, profits, and growth, and sectors in which they are active are disproportionately subject to authorization requirements and FDI restrictions (Rijkers et al (2017)). Politically connected firms are generally in the onshore sector. Their exceptional performance might be linked to sector entry regulations. Thus, we include this variable to assess if our results are robust when we control for them as a proxy for sector entry restrictions. We did not include age because age and size are very endogenous. μ_i is introduced to control for governorate specific effect, capturing thus some effect of the policy of regional development implemented in Tunisia. Finally, ε_j and ε_i are vectors of dummies controlling for 2-digit sector (classification) and firm specific effects.

4.2.2 Results summary

Table 2 reports a summary of our results of the offshore premium regressions related to all firms (column 1), for offshore exporters only (column 2) and for offshore exporters and importers in 2014. Results for the period 2002-2014 and for various categories of firms are displayed in Tables 3, 4, 5 and 6. When comparing results from the three samples and taking 2014 as a reference, it seems that results are mitigated for turnovers, labor productivity, average wage and job creation. Globally, premiums decrease when we compare offshore firms to comparable entities, i.e. onshore firms with international activities.

Column (1) in Table 2 shows that offshore firms have a premium in all indicators compared to their onshore counterparts, in particular in terms of profitability, productivity and turnover when the average percentage difference between offshore and onshore firms are compared in the same sector, governorate and taking 2014 as an illustration. Job creation premium of offshore firms is low relatively to profitability, productivity and turnover but still non negligible: offshore firms create 14.97% more jobs than their onshore counterparts. The average wage offered by offshore firms in 2014 is 5.68% more than the average wage offered by onshore firms. Both job creation and average wage differentials between offshore and onshore are very low when compared to the offshore profitability premium (147.82%).

Offshore firms are by law bound to export their products. Therefore, it is more accurate to estimate their performance compared to a subsample of comparable onshore firms, i.e. exporting onshore firms. Therefore, we estimate in a second step sole exporter offshore premium and in a third step offshore two-way traders premiums.

Column (2) in Table 2 shows offshore exporter only premium, which is the average percentage difference between offshore and onshore firms that solely export in the same sector, governorate and during the same year (2014). Similarly, to offshore premium in column (1), there is an offshore exporter premium for all indicators. Nevertheless, they are lower compared to offshore premium in column (1), except for average wage and gross job creation. For instance, turnover of sole offshore exporters is 13.6% higher than turnover of sole onshore exporters, whereas the offshore premium in turnover in column (1) is of 38.52%. Similarly, to offshore profitability premium, offshore sole exporters are 100% more profitable than their counterparts. This premium, lower than results in column (1), is still very high compared to turnover, productivity, job creation and wages premia. Finally, in terms of wages and job creation, sole offshore exporters seem to perform better than onshore counterparts: they create 15.09% more jobs than onshore exporters only and pay in average 17.15% more their workers.

One belief behind tariffs free policy set for offshore firms is a better inclusion in global value chains. Thus, it is also important to compare, as we did in column (3), two way traders offshore with two way traders onshore. Interesting enough, offshore premium is negative for all indicators but profitability and job creation. Lower labor productivity of offshore two way traders relatively to their onshore counterparts supports the idea that offshore firms are more labor intensive than onshore firms. Lower labor productivity might be linked to the lower added value of offshore firms. Therefore, they seem to be concentrated in lower rungs of the global value chains (GVCs). While two way traders firms are not performing well in labor productivity and turnovers, they are more profitable. Offshore two way traders are still more profitable by 19.77% than onshore two way traders which might reflect the positive effect of tariffs and tax exemption.

These results are consistent with findings of Dai et al. (2016) who show that processing firms (e.g. firms that assemble and resell on foreign markets tariff-exempted imported inputs) are less productive and have lower wages and profitability than non-processing exporters and non-exporters in China. Processing firms assemble tariff-exempted imported inputs into final goods and export them to foreign markets. In this respect, they are similar to two way offshore traders in Tunisia.

Dai et al. (2016) provide two explanations of low performance of processing firms. First, processing exports are associated with lower fixed costs of exporting as (i) foreign buyers are responsible for distribution, thus processing firms have lower distribution costs, (ii) foreign buyer supply the knowhow, which lower investment in research and development, (iii) parts and inputs are received without payments. Second, tariffs and tax exemptions lower fixed costs.

Therefore, processing firms self select into tax and tariffs exempted processing regime because they are not able otherwise to cover export related fixed costs.

Similarly, offshore regime attracts mainly lower productive firms. Incentives do not seem to be the best mechanism to incentivize offshore firms to upgrade in GVCs. To the contrary, tax exemptions are captured by firms and are not benefitting to Tunisia competitiveness. This result questions the efficiency of generous benefits given by the Tunisian Investment Code.

4.2.3 Detailed results

In the following, we present premium results for each category, offshore, offshore solely exporters and offshore exporters and importers during the period 2002-2016 in Table 3, 4 and 5.

In Table 3, we observe that turnovers, productivity and profitability of offshore firms are on average 40.78%, 42.21% and 186.99% higher than onshore counterparts, respectively. Job creation offshore premium is around 26,79%. The shock of 2008, with reduction in tariffs, negatively impacted offshore premium for all performance indicators apart average wages. Wages for offshore firms are initially lower than onshore firms, until 2008 then become higher, resulting in an equivalent average wage between both regimes during the following period.

In order to provide a deeper analysis, we run regressions on two subsamples, i.e. offshore only exporting firms and offshore exporting and importing firms.

Table 4 displays the differences between offshore only exporting firms and their onshore counterparts. In 2008, performance indicators registered a drop but soon returned to their levels. One exception is the wage premium of offshore exporting firms, which is not significant before 2008 (except for 2006), while it was significantly negative for the global sample.

Table 5 reports results estimates conducted on exporting and importing firms. Premium regarding this category of offshore firms show some discrepancies as compared to the preceding two samples. Turnover of offshore two-way traders is on average 25.66% weaker than onshore two way traders. Productivity and wages are about 24.72% and 20.27% weaker, respectively. Consistent with those results, gross job creation is higher for offshore exporting and importing firms as compared to onshore counterparts. Profitability remains more elevated but to a smaller extent.

To sum up, these results show that offshore firms have lower labor cost, are less productive, and create less jobs than internationalized onshore firms, but are more profitable. It might reflect that offshore two-way traders are concentrated on labor intensive industries relatively to onshore two-way traders. That labor productivity remained lower in the offshore sector can be related to the fact that Tunisia's exports by offshore firms remained more labor intensive, attesting its failure to upgrade up the quality ladder.

The concentration of offshore sector in labor intensive industries might be explained by restriction of entry in more capital-intensive industries. As a way to proxy entry regulations, we run a test which consists in adding a dummy controlling for firms connected to former Tunisian President Ben Ali and his family. Ben Ali firms are concentrated in general in highly regulated sectors. The period considered begins in 2002 and ends with the Tunisian revolution and the end of Ben Ali's reign, i.e. 2011. Results in Table 6 are similar to those displayed in Table 3, thus confirming their robustness.

4.3 Difference in difference model

4.3.1 Specification

Offshore and onshore firms are different in terms of market orientation, i.e. domestic versus international markets, and paths of internationalization. Onshore firms focus first on serving

local markets. Most productive ones will gradually increase their international involvement over time. Offshore firms have a different approach. By choosing the offshoring regime, they are bound by law to serve only international markets. They are generally processing firms that are able to integrate into global value chains. Their different strategies make these two types of firms barely comparable. Thus, the choice of which regime to operate in is clearly endogenous. In order to handle this issue, we identify how firms respond to shocks in the economy. To this end, we assess the impact of industrial tariffs on these two different types of firms in the context of the post-2008 trade liberalization following the agreement signed with the European Union. The financial crisis of 2008 should also be taken into consideration, as it undoubtedly impacted the decline in external demand for Tunisian exports knowing that most Tunisian products are exported to European countries.

We use a difference-in-difference estimator to evaluate the effect of the treated trade status variable on firm's performance:

$$lnY_{it} = \alpha + \beta_1 TS_i + \beta_2\, post_t + \beta_3\, (post_t * TS_i) + \sigma(X_{it}) + \delta_t + \varepsilon_{it} \tag{2}$$

Where i, t indexes respectively firms, and time. Y_{it} represents the firm's yearly performance such as wages, job creation, profitability and productivity. TS_i represents the firm's trade status (offshore or onshore, offshore only exporter or onshore only exporter, offshore exporter and importer or onshore exporter and importer, depending on the specification) . We define the dummy variable $post_t$ as taking the value of 1 after 2008. Finally the coefficient β_3 represents the DID effect of the trade liberalization that happened in 2008 on the treated group. X_{it} represents a control of some observable features of firms at a given time (age, size, sectors, foreign ownership, regions of localization, etc.). δ_t denotes time-specific dummies. ε_{it} is an idiosyncratic error term that is assumed to be independent and identically distributed.

4.3.2 Results

Our results are displayed in Table 7. It shows that the impact of offshoring for both turnover and productivity decreases with the intensity of trade operations. Indeed, compared to all onshore firms, offshore firms are performing better in regards to these indicators. The positive effect of offshoring is still positive compared to onshore when we look to exporters only but it is lower in relation to the first category. Two way offshore traders are underperforming compared to two way onshore traders. These trends correspond to our first results from the premium model.

The crisis of 2008, through the decrease of external demand, has had a negative impact on offshore relative to onshore activity points to the underlying dependency of offshore firms on external markets. The negative impact disappears when we compare offshore exporters to their onshore counterparts. This difference might be explained by the fact that offshore exporters have lower fixed costs compared to onshore exporters as they are often subsidiaries.

This effect is even lower when we compare two-way offshore and onshore traders. As for productivity, the effect is not that significant. One possible explanation is that Tunisian tariff liberalization reduced the productivity gap between onshore and offshore two-way traders.

As for profitability, offshore, offshore exporters and offshore two- way traders are always more profitable than onshore counterparts. However, this positive effect will decrease progressively when offshore firms are more engaged in international trade. For instance, offshore two-way traders have higher profitability compared to their onshore counterparts but in a lower measure than the two other categories i.e. offshore and offshore exporters.

The crisis of 2008 impacted negatively these three categories of offshore firms compared to their onshore counterparts. It seems that offshore two -way traders were the most negatively

affected. This could be linked to the sudden decrease in the external demand that impacted more offshore exports. At the same time, these firms had lost the advantage of tariff exemption as the two -way onshore traders faced lower tariffs following the Euromed agreement.

For average wages, offshore exporters are the only offshore category that pays their workers more than their onshore counterparts. However, it appears that after 2008 offshore firms paid their labor force more than their onshore counterparts across all categories considered i.e. offshore exporters or offshore two-way traders.

Offshore exporter and importers are the ones creating more jobs compared to the onshore two-way traders and relative to the other categories. Nonetheless, they were hit badly by the 2008 crisis, as reflected in their decreased job creation during that period. This trend seems to be consistent with the decline of profitability of the two-way traders.

5. Survival Analysis

The success of a regulation can be assessed through the additional benefits that emerged after its implementation. This corresponds to the offshore premium demonstrated above. Another way to evaluate the efficiency of a measure is to check its impact on the survival of firms.

In this section, we propose to investigate whether financial incentives offered to offshore firms influence their survival.

Building on the small number of recent empirical works that examine the relationship between international trade and firm survival (Baldwin and Yan, 2010; Namini et *al.*2011), we estimate the following probit model:

$$Pr\ (Exit_{i,t+1}=1)=\Phi(\delta_0+\rho TS_{it}+\tau TS_{it}\times Age>9_{it}+\sigma V_{it}++\ u_i + \varepsilon_j + \varepsilon_i + \varepsilon_t \qquad (3)$$

The analysis focuses on one year survival rate. $Exit_{i,t+1}$ takes the value 1 if firm *I* exits the market at year *t+1* and 0 if not. Φ is the standard normal cumulative function. TS_{it} is a dummy variable standing for the trade status of the firm at year *t*. In Model (8a), this dummy takes value 1 if the firm is offshore and 0 if it is onshore. In Models (8b) and (8c), the dummy takes value 1 if the firm is an offshore exporter, 0 if it is an onshore exporter, value 1 if the firm is an offshore exporter and importer, and 0 if it is onshore exporter and importer. We interact this trade status variable with a dummy variable *Age>9* to see whether the end of offshore privileges, which takes place when a firm is 10-years old, influences the survival of a firm. V_{it} is a vector of standard firm characteristics that includes the same characteristics than specification (1) (i.e., size (number of employees) and a dummy controlling for tax evasion). μ_i controls for governorate specific effect, ε_j, ε_i and ε_t control for firm, 2-digit and year fixed effects.

Results are reported in Table 8. The positive and significant coefficient on the *Trade Status (TS)* variable in all specifications indicates that the offshore regime always increases the probability that firms will exit. More precisely, an offshore firm is more likely to exit the market within a year, whatever its type (offshore, offshore exporting or offshore exporting and importing). This effect is strengthened for importing and exporting offshore firms older than 9 years, but not for sole exporting firms. This is a consistent result since offshore exporting and importing firms are the largest beneficiaries of the offshore regime, being exempted from custom duties on their imports in addition to the other privileges common to all kinds of firms. Therefore, they become the most vulnerable when privileges stop.

When we consider sole exporting firms, the probability of evading taxes (or reporting anomalies) increases the probability of exiting the market. On the contrary, tax evasion reduces the probability of exiting for exporting and importing firms. Consistent with the literature, the largest firms are more likely to survive.

Table 9 considers several cut-off ages for 3, 6, 9, and 12 years (3 years difference each time). Column (9a) shows that offshore firms are more likely to exit within a year at all considered ages with a pick when age reaches 9 years. Three years seems to be also a critical age. Column (9b) points out that young offshore firm at age 3 have a higher probability to exit the market. This probability will decrease for offshore sole exporters that stayed in the market. Moreover, offshore sole exporters that reached 12 years are less likely to exit than onshore sole exporters.

Interesting enough, exit probability of offshore two-way traders compared to onshore two-way traders has a U inverted shape. It attains its maximum when the firm reaches 9 years old. It seems that the end of privileges of tax and tariff exemptions play a role in exiting the market. This result supports our previous findings. Offshore two-way traders, most likely involved in pure assembling trade, are low performers. They can't afford high exports fixed costs. They self-select into the offshore regime as it allows them to lower their export fixed costs with its tariffs and tax exemptions. Once the privileges take an end, they exit the market.

6. Concluding Remarks

In this work, we examine the efficiency of the offshore regime implemented in Tunisia since 1972. Through the estimation of offshore premia for the period 2002-2014, we assess if firms belonging to this regime exceed their onshore counterparts in terms of turnover, productivity, wages, job creation and profitability. A first assessment conducted on a global sample including all offshore and onshore firms shows the former performing stronger than the latter. One exception is related to the average wage, which is lower for offshore firms before 2008. A more concise analysis is conducted on two sub-samples. Results of estimations conducted on the sub-sample including only exporting firms are similar to those of global sample. When comparing importing and exporting firms, we find quite different results. Offshore exporting and importing firms have performed worse than their onshore counterparts, across all categories considered except profitability. However, the offshore premium in terms of profitability is lower than in other specifications. Given that offshore exporting and importing firms benefit from the largest share of privileges, this result highlights the relative inefficiency of exemptions. It also suggests that the implementation of the offshore regime has been more profitable to the firms benefitting from incentives than to the country. These findings are consistent with ECOPA report (2012), which shows that the fiscal and financial incentives in Tunisia, including those related to offshore regime, are ineffective in terms of net job creation. These results are confirmed by a differences-in-differences analysis. Offshore firms are overall better performing when compared to their onshore counterparts. Nonetheless, when we compare offshore exporters and offshore two-way traders to onshore exporters and onshore two-way traders, results are bit different. The more these offshore firms are involved in trade, the lower is their performance. Two-way offshore traders are underperforming compared to their onshore two way traders in the areas of turnover and productivity. Yet offshore two-way traders are still profitable compared to onshore exporters and importers, though in a lower measure to the two other categories of offshore.

Difference-in-difference results also show that offshore and onshore firms reacted differently to the economic shock of 2008. The profitability of offshore two-way traders dropped compared to onshore exporters and importers. This development can be explained by the decline of external demand following the financial crisis of 2008 as well as by the industrial tariff liberalization following the Euromed agreement.

Our findings suggest that offshore two way traders are low performers. They are generally operating in processing and pure assembly activities. Their low labor productivity implies that they produce low added value products. Offshore two way traders self select in the offshore regime because tariff and tax exemptions allow them to operate with lower fixed export costs,

without which they are doomed to exit the market. Survival results support this hypothesis. Offshore two-way traders are more likely to exit when financial incentives stop, usually after 10 years.

The policy implications of our results are large, especially at the present time when the Tunisian government is considering implementing deep reforms. First, our findings point out that the incentive based Tunisian Investment Code helped the country to expand its exports and to integrate in global value chains of labor intensive sectors such as transport equipment" manufacturing sector, "computer, electronic, electrical equipment, machinery and optical products" manufacturing sector and "Textile, clothing, leather and footwear". These firms created jobs and account for a large portion of the Tunisian today economy. Second, the success of the offshore regime has its pitfalls and limitations. Indeed, the incentives given appear to be benefiting more to firms than to the country as it is attested by the large gap between offshore profitability premium and other performance indicators premium. Third, the privileges given are even counterproductive to the efforts of Tunisia to move up the Global Value Chains. Indeed, it appears that such incentives are attracting low performers operating in pure assembly activities. Offshore two-way traders are more likely to simply stop their activities once privileges end. Therefore, Tunisia should consider other ways than financial incentives to reduce barriers to GVCs participation by all firms, not only offshore firms. Tunisia should specifically target highly added value sectors with a comprehensive package of market reforms that lower regulations, favor innovation and make use of complex skills and capital.

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Figure 1: Evolution of Exports in Tunisia, 2002-2014
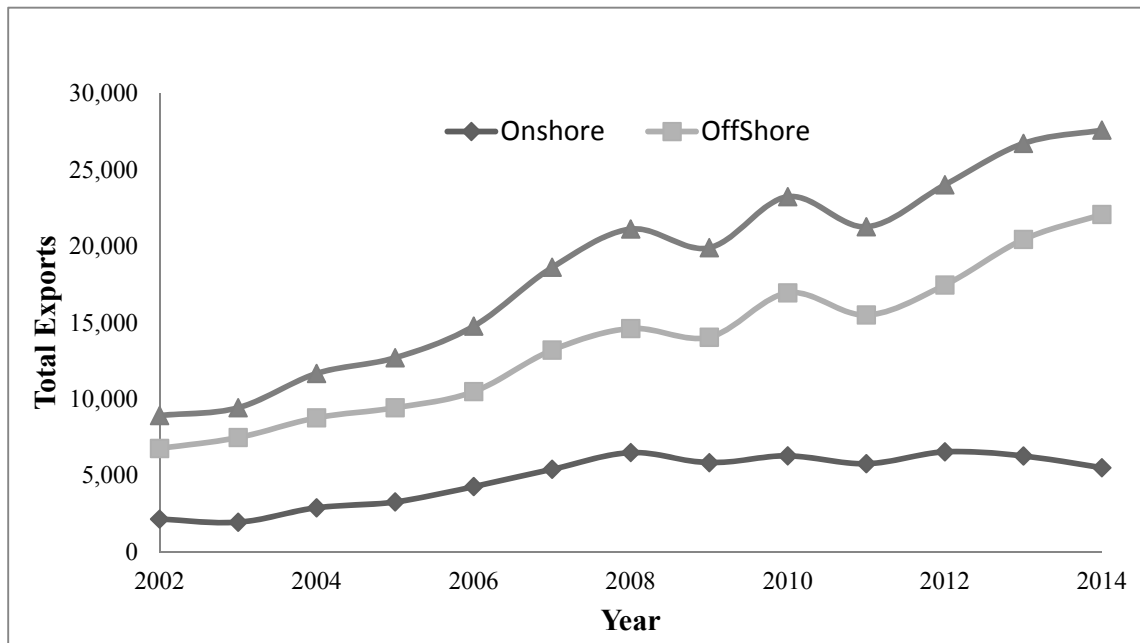
Figure 2: Share of Offshore Firms in Total Value of Exports (ExportV), Turnover and Benefits (profits)
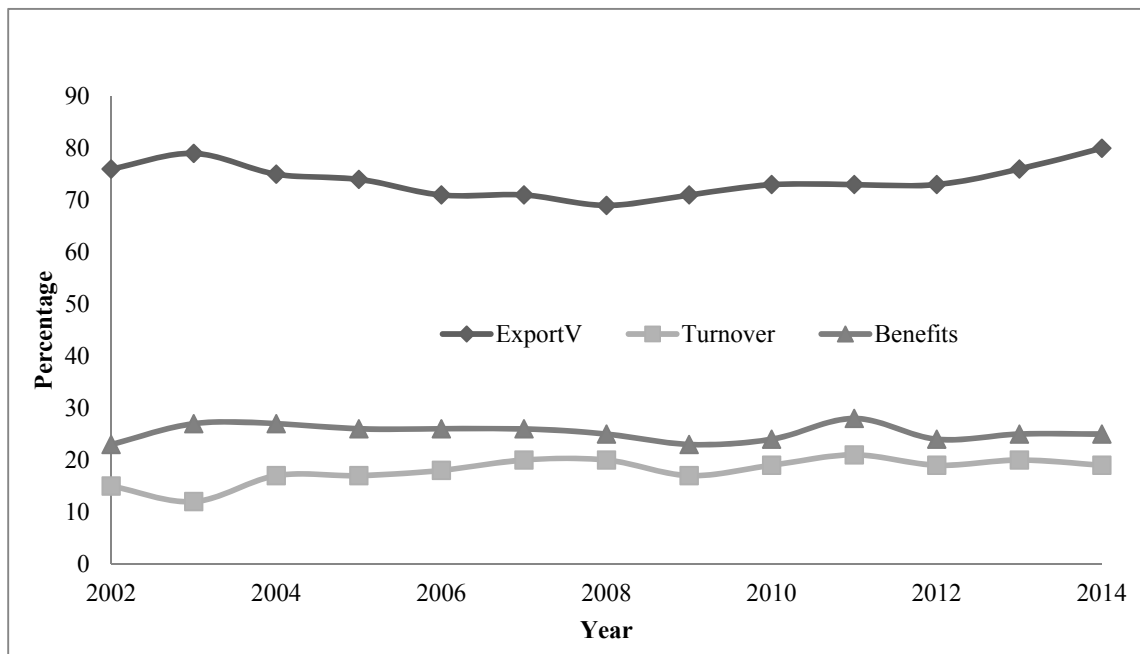
Figure 3: Share of Offshore Firms, by Sector, 2002-2014
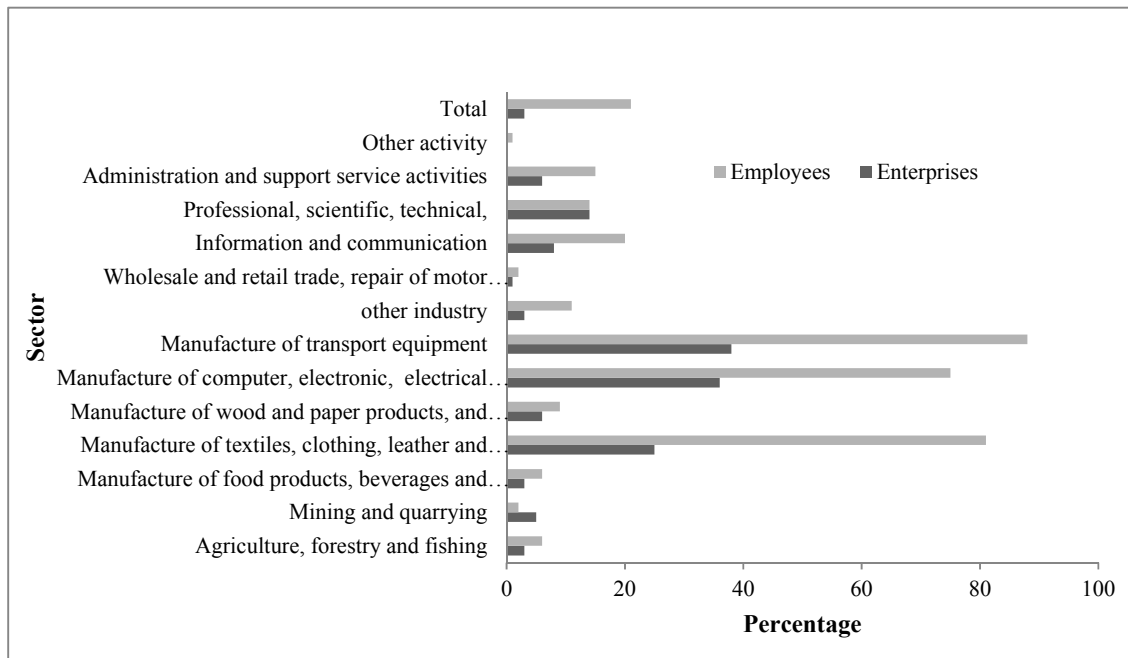
Source: Authors calculations based on Tunisian Enterprise Survey data (Répertoire National des Entreprises) from National Institute of Statistics

Figure 4: Average Share of Offshore Firms (% Total Number and % Employment), 2002-2014
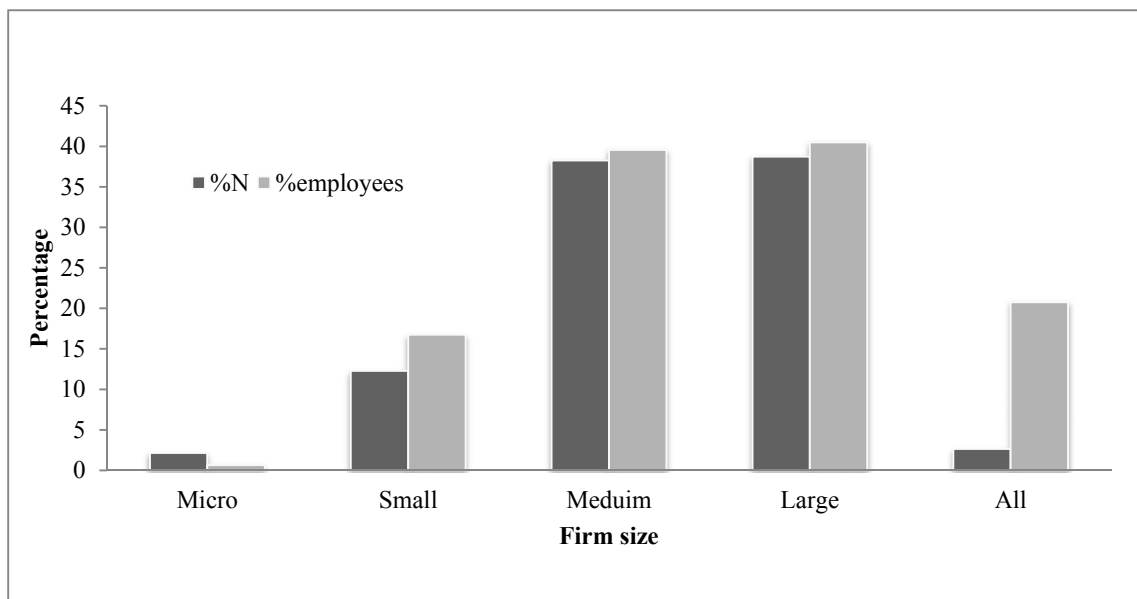
Source: Authors calculations based on Tunisian Enterprise Survey data (Répertoire National des Entreprises) from National Institute of Statistics

Figure 5: Gross Job Creation
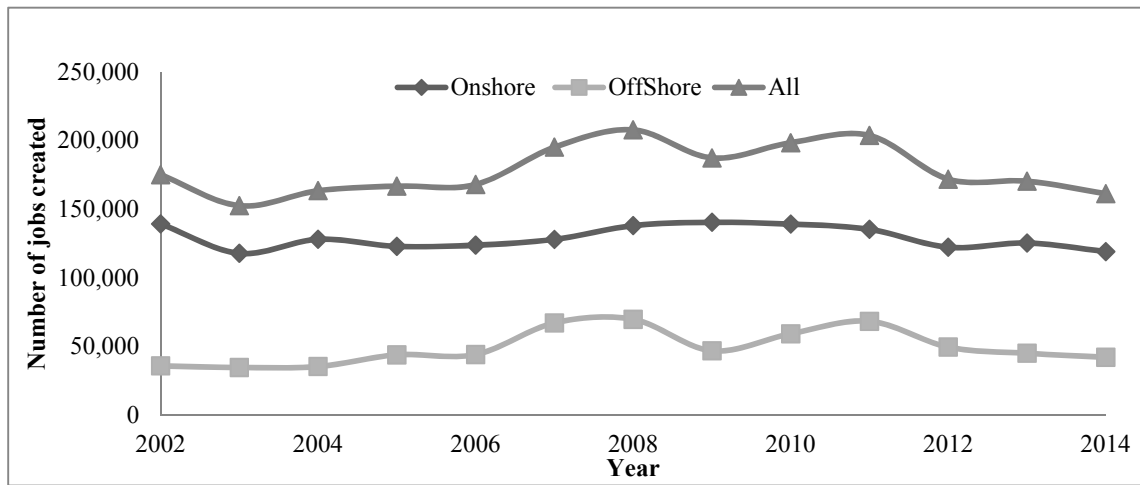
Source: Authors calculations based on Tunisian Enterprise Survey data (Répertoire National des Entreprises) from National Institute of Statistics

Table 1: Major Incentives Offered by Offshore Regime[1]

| Incentive	Offshore	Onshore
Tax exemptions on profit and income	Full exemption during the first ten years of their activity, a 50-percent reduction for another ten years. 10% tax on profits from exports made after 1st January 2014, except for firms whose period of total exemption (10 years) has not expired.	Only on the profits from export earnings. Same conditions as offshore.
Exemption from customs duties on imported capital goods and inputs	Total exemption.	Only on export activity.
Exemption of VAT and consumption tax on inputs and capital goods	Total exemption.	Only on export activity.

Source: The Investment Incentives Code, 1994

Table 2: Offshore Premium OLS Regressions in 2014

	All sample	Offshore exporters only	Offshore importers and exporters
LnTurnover	38.52***	13.6***	-29.61*** (0.0458)
	(0.0249)	(0.0404)	
Ln Productivity	40.15***	12.83***	-28.79***
	(0.0247)	(0.0399)	(0.046)
LnAverage Wage	5.68***	17.15***	-15.12*** (0.0199)
	(0.0098)	(0.0209)	
LnGross Job Creation	14.97***	15.09***	18.46***
	(0.0124)	(0.0261)	(0.0461)
LnProfitability	147.82***	100.29*** (0.0655)	19.77**
	(0.0354)		(0.0809)
Observations	60702	5510	5437

Notes: ***p<0.01; ** p<0.05;* p<0.1. Reported premium estimates are the percentage differences given by $(e^{\beta}-1)\times100$, with β following from equation 1. Log Employees, Foreign ownership dummy (foreign or locally owned), Tax Evasion dummy, governorate, sector and firm fixed effects are included in all regressions.

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[1]We follow the classification of the National Institute of Statistics in Tunisia (Institut National de la Statistique), considering as offshore firms wholly exporting firms either resident or non resident in Tunisia.

Table 3: Offshore Premium OLS Regressions, All Categories of Firms

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
LnTurnover	25.09***	44.2***	37.75***	49.4***	46.19***	40.61***	28.88***	40.16***	48.38***	48.88***	37.76***	44.37***	38.52***
	(0.0431)	(0.0418)	(0.0395)	(0.0384)	(0.0362)	(0.0341)	(0.0322)	(0.0271)	(0.0262)	(0.0261)	(0.0258)	(0.0256)	(0.0249)
Ln Productivity	21.33***	43.32***	40.87***	50.62***	47.76***	41.56***	29.98***	43.46***	51.14***	51.8***	40.14***	46.62***	40.15***
	(0.0397)	(0.039)	(0.0382)	(0.0368)	(0.0351)	(0.0334)	(0.0312)	(0.0266)	(0.0259)	(0.0258)	(0.0256)	(0.0254)	(0.0247)
LnAverage Wage	-10.01***	-7.88***	-5.08***	-5.56***	-2.66*	-4.3***	0.01	3.81***	5.21***	6.18***	5.21***	5.18***	5.68***
	(0.0156)	(0.0146)	(0.0153)	(0.015)	(0.0142)	(0.0133)	(0.0124)	(0.0117)	(0.0108)	(0.0105)	(0.0106)	(0.01)	(0.0098)
LnGross Job Creation	36.23***	35.46***	26.37***	28.52***	27.39***	43.79***	37.86***	14.18***	30.42***	27.41***	11***	14.66***	14.97***
	(0.019)	(0.0181)	(0.0183)	(0.0177)	(0.0172)	(0.0165)	(0.0157)	(0.0149)	(0.0143)	(0.0142)	(0.0135)	(0.0132)	(0.0124)
Ln Profitability	156.71***	185.41***	195.48***	213.4***	218.47***	216.75***	167.5***	175.68***	177.64***	209.65***	176.92***	189.4***	147.82***
	(0.0487)	(0.0477)	(0.0472)	(0.0456)	(0.0438)	(0.0414)	(0.0398)	(0.0367)	(0.0362)	(0.037)	(0.0364)	(0.0362)	(0.0354)
Observations	45381	44777	46131	46695	48263	50653	52820	54425	56289	55877	56618	58288	60702

Notes: ***p<0.01; ** p<0.05;* p<0.1. Reported premium estimates are the percentage differences given by $(e^{\beta}-1)\times100$, with β following from equation 1. Log Employees, Foreign ownership dummy (foreign or locally owned), Tax Evasion dummy, governorate, sector and firm fixed effects are included in all regressions.

Table 4: Offshore Premium OLS Regressions, Only Exporters

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
LnTurnover	9.44	31.28***	2.19	19.83***	17.78***	16.99***	10.34*	16.51***	13.32***	30.15***	24.06***	17.17***	13.6***
	(0.0743)	(0.0711)	(0.0735)	(0.0684)	(0.0615)	(0.0596)	(0.0509)	(0.0458)	(0.0424)	(0.0398)	(0.0413)	(0.0417)	(0.0404)
Ln Productivity	9.53	31.98***	5.25	17.41**	19.35***	19.91***	12**	18.53***	15.02***	31.69***	25.31***	18.47***	12.83***
	(0.074)	(0.0706)	(0.0703)	(0.0651)	(0.061)	(0.0577)	(0.0507)	(0.0426)	(0.0421)	(0.0396)	(0.0411)	(0.0414)	(0.0399)
Ln Average Wage	-0.17	2.5	4.9	3.68	8.76**	4.86	6.52**	13.32***	12.4***	16.13***	17.74***	16.15***	17.15***
	(0.0414)	(0.0364)	(0.0375)	(0.0378)	(0.0335)	(0.0298)	(0.0272)	(0.023)	(0.021)	(0.0207)	(0.021)	(0.0209)	(0.0209)
LnGoss Job Creation	11.23**	11.41**	9.05*	12.8**	13.54***	35.45***	27.83***	15.72***	21.99***	15.03***	14.15***	15.98***	15.09***
	(0.0522)	(0.0475)	(0.0477)	(0.0468)	(0.0432)	(0.0404)	(0.038)	(0.0301)	(0.0289)	(0.0282)	(0.0265)	(0.0265)	(0.0261)
Ln Profitability	153.74***	170.03***	142.3***	138.79***	182.17***	185.85***	157.03***	128.98***	124.72***	185.18***	157.33***	159.3***	100.29***
	(0.1209)	(0.1141)	(0.1172)	(0.1023)	(0.0988)	(0.0911)	(0.0829)	(0.067)	(0.0639)	(0.0656)	(0.0644)	(0.0665)	(0.0655)
Observations	1994	2178	2452	2716	3036	3547	4078	5656	6185	6239	6048	5866	5510

Notes: ***p<0.01; ** p<0.05;* p<0.1. Reported premium estimates are the percentage differences given by $(e^{\beta}-1)\times100$, with β following from equation 1. Log Employees, Foreign ownership dummy (foreign or locally owned), Tax Evasion dummy, governorate, sector and firm fixed effects are included in all regressions.

Table 5: Offshore Premium OLS Regressions, Exporters and Importers

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
LnTurnover	-31.37***	-26.62***	-19.03***	-17.63***	-21.42***	-21.96***	-32.44***	-33.01***	-27.39***	-22.29***	-27.72***	-23.1***	-29.61***
	(0.0701)	(0.068)	(0.0653)	(0.0656)	(0.0629)	(0.0588)	(0.0567)	(0.0526)	(0.05)	(0.0503)	(0.0483)	(0.0471)	(0.0458)
Ln Productivity	-33.7***	-23.62***	-17.54***	-16.55***	-20.24***	-20.78***	-30.76***	-32.35***	-26.41***	-21.26***	-27.02***	-22.32***	-28.79***
	(0.0684)	(0.0663)	(0.0654)	(0.0659)	(0.0609)	(0.0589)	(0.0555)	(0.0527)	(0.0501)	(0.0504)	(0.0485)	(0.0473)	(0.046)
Ln Average Wage	-21.42***	-24.19***	-22.31***	-23.62***	-20.21***	-24.07***	-23.64***	-20.87***	-18.31***	-16.47***	-16.32***	-16.93***	-15.12***
	(0.0289)	(0.0271)	(0.0277)	(0.0268)	(0.0258)	(0.0254)	(0.0242)	(0.0227)	(0.0214)	(0.0204)	(0.0212)	(0.0205)	(0.0199)
LnGross Job Creation	63.02***	62.42***	50.4***	48.81***	50.55***	60.67***	55.95***	17.85***	44.9***	34.21***	15.32***	19.88***	18.46***
	(0.0579)	(0.0567)	(0.057)	(0.055)	(0.0541)	(0.0532)	(0.0529)	(0.0488)	(0.0488)	(0.0509)	(0.046)	(0.047)	(0.0461)
Ln Profitability	45.77***	72.67***	72.44***	93.71***	59.41***	78.41***	21.93**	30.28***	19.82**	53.72***	29.83***	48.58***	19.77**
	(0.1163)	(0.111)	(0.1096)	(0.1042)	(0.0996)	(0.0945)	(0.0904)	(0.0844)	(0.0841)	(0.0838)	(0.0787)	(0.0787)	(0.0809)
Observations	4024	4106	4261	4424	4576	5097	5348	5574	5479	5329	5603	5610	5437

Notes: ***p<0.01; ** p<0.05;* p<0.1. Reported premium estimates are the percentage differences given by $(e^{\beta}-1)\times100$, with β following from equation 1. Log Employees, Foreign ownership dummy (foreign or locally owned), Tax Evasion dummy, governorate, sector and firm fixed effects are included in all regressions.

Table 6: Offshore Premium OLS Regressions, all Categories of Firms, Controlling for Firms Connected to Former President Ben Ali

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Ln Turnover	25.2***	44.37***	37.8***	49.66***	46.51***	40.91***	29.17***	40.5***	48.94***	49.15***
	(0.0431)	(0.0418)	(0.0394)	(0.0384)	(0.0362)	(0.0341)	(0.0322)	(0.0271)	(0.0262)	(0.0261)
Ln Productivity	21.43***		40.92***	50.89***	48.08***	41.86***	30.27***	43.82***	51.74***	52.12***
	(0.0397)	43.5*** (0.039)	(0.0382)	(0.0368)	(0.0351)	(0.0333)	(0.0311)	(0.0266)	(0.0259)	(0.0258)
Ln Average Wage	-9.93***	-7.82***	-5.06***			-4.25***	0.06	3.89***	5.34***	6.39***
	(0.0156)	(0.0146)	(0.0153)	-5.5*** (0.015)	-2.56* (0.0142)	(0.0133)	(0.0124)	(0.0117)	(0.0108)	(0.0105)
Ln Gross Job Creation	36.24***	35.53***	26.36***	28.63***	27.49***	43.82***	37.88***	14.21***	30.5***	27.48***
	(0.019)	(0.0181)	(0.0183)	(0.0177)	(0.0172)	(0.0165)	(0.0157)	(0.0149)	(0.0143)	(0.0142)
Ln Profitability	157.31***	186.17***	195.22***	215.13***	220.42***	217.87***	168.03***	177.07***	179.65***	210.77***
	(0.0486)	(0.0477)	(0.0471)	(0.0456)	(0.0437)	(0.0414)	(0.0397)	(0.0366)	(0.0361)	(0.037)
Observations	45381	44777	46131	46695	48263	50653	52820	54425	56289	55877

Notes: ***p<0.01; ** p<0.05;* p<0.1. Reported premium estimates are the percentage differences given by $(e^{\beta}-1)\times100$, with β following from equation 1. Log Employees, Foreign ownership dummy (foreign or locally owned), Tax Evasion dummy, Politically connected firms dummy, governorate, sector and firm fixed effects are included in all regressions.

Table 7: Difference-in-Difference, all Sectors

		All sectors		
		Offshore	**Offshore Exporters**	**Offshore Exporters and Importers**
Ln Turnover	Offshore	0.4099***	0.1358***	-0.3188***
		(0.0118)	(0.0218)	(0.02)
	Post	0.3857***	0.2845***	0.3617***
		(0.004)	(0.0137)	(0.0146)
	Post*Offshore	-0.079***	0.0526**	0.0369*
		(0.0123)	(0.0236)	(0.0209)
	TaxEvasion	-1.3897***	-1.8998***	-0.6178***
		(0.0082)	(0.0248)	(0.0136)
	lnEmployees	1.156***	0.8535***	0.8879***
		(0.0017)	(0.0048)	(0.0039)
Ln Productivity	Offshore	0.4317***	0.1473***	-0.3016***
		(0.0115)	(0.0214)	(0.0199)
	Post	0.3872***	0.2873***	0.3677***
		(0.0039)	(0.0134)	(0.0145)
	Post*Offshore	-0.0939***	0.0485**	0.029
		(0.012)	(0.0231)	(0.0208)
	TaxEvasion	-1.3425***	-1.8474***	-0.6048***
		(0.008)	(0.0243)	(0.0135)
	lnEmployees	-0.0042**	-0.3077***	-0.189***
		(0.0016)	(0.0047)	(0.0039)
Ln Profitability	Offshore	1.1617***	0.9794***	0.4946***
		(0.0153)	(0.0343)	(0.0322)
	Post	0.5062***	0.4745***	0.5544***
		(0.0042)	(0.0207)	(0.0222)
	Post*Offshore	-0.1593***	-0.0968***	-0.1926***
		(0.016)	(0.037)	(0.0327)
	TaxEvasion	-0.5235***	-1.0699***	-0.3824***
		(0.0116)	(0.0493)	(0.0224)
	lnEmployees	-0.2807***	-0.5809***	-0.3238***
		(0.0021)	(0.0075)	(0.0061)
ln Average Wage	Offshore	-0.0515***	0.0263**	-0.2543***
		(0.0048)	(0.0114)	(0.0086)
	Post	0.441***	0.3688***	0.4302***
		(0.0014)	(0.0071)	(0.0064)
	Post*Offshore	0.1027***	0.1241***	0.069***
		(0.0051)	(0.0124)	(0.0091)
	TaxEvasion	0.0355***	0.068***	-0.0586***
		(0.0031)	(0.013)	(0.0059)
	lnEmployees	0.1266***	0.0678***	0.0781***
		(0.0007)	(0.0025)	(0.0017)
ln Gross Job Creation	Offshore	0.3094***	0.1639***	0.4959***
		(0.0059)	(0.0147)	(0.0184)
	Post	-0.0131***	-0.0462***	0.0816***
		(0.0018)	(0.0092)	(0.0137)
	Post*Offshore	-0.1364***	-0.0127	-0.285***
		(0.0063)	(0.016)	(0.0194)
	TaxEvasion	0.0802***	0.0071	0.0638***
		(0.0039)	(0.0168)	(0.0125)
	lnEmployees	0.3356***	0.3587***	0.3605***
		(0.0008)	(0.0033)	(0.0036)
	Observations	676919	55505	64868

Notes: ***p<0.01; ** p<0.05;* p<0.1. Foreign ownership dummy (foreign or locally owned), governorate, sector and firm fixed effects are included in all regressions.

Table 8: Exit Probit Estimations

Exit at t+1	All firms	Trade Status Exporter	Importer and Exporter
	(8a)	(8b)	(8c)
Intercept	0.2884***	0.1991***	0.1642***
	(0.0067)	(0.0353)	(0.0301)
Trade Status	0.0374***	0.041***	0.0343***
	(0.0021)	(0.0036)	(0.0028)
Trade Status×Age>9	0.0352***	0.0087*	0.0238***
	(0.0028)	(0.0048)	(0.0026)
Tax Evasion	0.022***	0.0395***	-0.0253***
	(0.0018)	(0.006)	(0.0023)
Ln Employees	-0.0644***	-0.0546***	-0.0305***
	(0.0004)	(0.0012)	(0.0007)
Observations	676 919	55 505	64 868
R2	0.0449	0.0499	0.0515

Notes: Foreign ownership dummy, governorate, sector, firms and year fixed effects are included. ***p<0.01; ** p<0.05;* p<0.1.

Table 9: Exit Probit Estimations for Different Ages

Exit at t+1	All firms	Trade Status Exporter	Importer and Exporter
	(9a)	(9b)	(9c)
Trade Status×Age>3	0.0305***	0.0123**	0.0142***
	(0.0036)	(0.0055)	(0.0036)
Trade Status×Age>6	0.0273***	0.0054	0.0179***
	(0.0026)	(0.0042)	(0.0026)
Trade Status×Age>9	0.0352***	0.0087*	0.0238***
	(0.0028)	(0.0048)	(0.0026)
Trade Status×Age>12	0.0273***	-0.0104*	0.0141***
	(0.0032)	(0.0057)	(0.003)

Notes: Trade Status, Tax evasion, ln Employees, Foreign ownership dummy, governorate, sector, firms and year fixed effects are included. ***p<0.01; ** p<0.05;* p<0.1.

Appendix

Table A1: Data Description

Variable	Definition
Turnover	Annual sales
Gross Job Creation	Firm's Employment at t- Firm's Employment at (t-1)
Productivity	Real gross output per worker
Wages	Average annual wage per worker
Profitability	Real profits per worker
Trade Status	Dummy taking value1 if the firm is offshore, offshore only exporting or offshore exporting and importing, 0 if it is onshore, onshore only exporting or onshore exporting and importing, depending on the specification
Age	Age of the firm
Size	Number of employees (Log)
Tax Evasion	Dummy variable taking value 1 if the firm is likely to evade taxes, 0 otherwise. The firm is most likely to avoid taxes if turnovers to the social security administration are lower than (i) the wage bill reported to the social security administration (ii) total exports or (iii) total imports recorded in customs transactions data
$Exit_{i,t+1}$	takes the value 1 if firm I exits the market at year $t+1$ and 0 if not
Foreign ownership	Dummy variable taking value 1 if the firm is owned by a foreigner
Firms connected to former President Ben Ali and his family	Dummy taking value 1 if the firm is expected to be connected, 0 otherwise

Table A2: Descriptive Statistics for 2014

Trade Status	# firms	Variable	N	Sum	Mean	Std Dev
Onshore	55038	ln Turnover	45 699	563 665	12,33	1,83
		ln Productivity	45 698	508 429	11,13	1,30
		ln Profitability	35 854	318 033	8,87	1,39
		ln Average Wage	54 759	468 348	8,55	0,55
		ln Gross Job Creation	55 038	20 044	0,36	0,63
Offshore	5664	ln Turnover	4 717	63 205	13,40	1,88
		ln Productivity	4 717	50 658	10,74	1,57
		ln Profitability	3 146	27 769	8,83	2,05
		ln Average Wage	5 647	49 685	8,80	0,75
		ln Gross Job Creation	5 664	5 203	0,92	1,21
Onshore Sole Exporters	3375	ln Turnover	3 286	41 591	12,66	1,44
		ln Productivity	3 285	36 795	11,20	1,12
		ln Profitability	2 480	22 300	8,99	1,42
		ln Average Wage	3 366	29 518	8,77	0,63
		ln Gross Job Creation	3 375	1 549	0,46	0,66
Offshore Sole Exporters	2135	ln Turnover	2 099	26 566	12,66	1,74
		ln Productivity	2 099	22 844	10,88	1,72
		ln Profitability	1 451	13 512	9,31	2,15
		ln Average Wage	2 128	19 188	9,02	0,83
		ln Gross Job Creation	2 135	1 597	0,75	0,97
Onshore Exporters and Importers	2651	ln Turnover	2 525	37 422	14,82	1,70
		ln Productivity	2 525	30 091	11,92	1,12
		ln Profitability	1 815	16 677	9,19	1,51
		ln Average Wage	2 651	24 121	9,10	0,60
		ln Gross Job Creation	2 651	2 027	0,76	1,03
Offshore Exporters and Importers	2786	ln Turnover	2 561	35 952	14,04	1,76
		ln Productivity	2 561	27 241	10,64	1,42
		ln Profitability	1 661	13 985	8,42	1,86
		ln Average Wage	2 783	24 140	8,67	0,58
		ln Gross Job Creation	2 786	3 175	1,14	1,40