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Self-Employment and Unemployment in Turkey

Yasemin Ozerkek
Marmara University

Fatma Dogruel
Marmara University

SELF- EMPLOYMENT AND UNEMPLOYMENT IN TURKEY

YASEMIN OZERKEK[a]

FATMA DOGRUEL[b]

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Abstract

The relationship between the rates of self-employment and unemployment has been extensively studied in the literature. The results of the existing studies are varied. The aim of this paper is to investigate the dynamic relationship between these variables in Turkey. The results indicate that there is a long-run relationship between the rates of self-employment and unemployment. Changes in self-employment rates have a negative effect on subsequent unemployment rates. There is evidence for the existence of causality running from self-employment rate to unemployment rate. The results reveal the existence of an entrepreneurial effect. However, it is not possible to assess the exact entrepreneurial effect due to the restraint in the coverage of self-employment data. Involvement of unpaid workers in self-employment probably disguises the exact entrepreneurial effect.

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[a] Marmara University, Department of Economics, Istanbul, yasemin.ozerkek@marmara.edu.tr
[b] Marmara University, Department of Economics, Istanbul, fatma.dogruel@marmara.edu.tr

1. Introduction

The link between unemployment and self-employment has been widely examined and the results are diverse in the literature. In the study of these notions, the concept of entrepreneurship takes place in the relationship between these variables. Entrepreneurship has been acknowledged as having an important role in employment creation and economic growth.[1] Schumpeter (1934) highlights the role of the entrepreneur as major cause of economic development. In this process, entrepreneurs open new businesses, create innovation and generate employment.[2]

As Thurik et al. (2008) point out, aiming to generate employment and economic growth, policy makers referred to literature for the appropriate policies to stimulate entrepreneurship. Then, policy-makers encountered an interrelationship between self-employment and the unemployment rate and became perplexed with the ambiguous results (Thurik et al., 2008).

"The simplest kind of entrepreneurship is self-employment (Blanchflower and Oswald, 1998, p.27)."[3] Attempts have been made in the literature to answer the question of whether unemployment affects self-employment or self-employment is an important cause for the unemployment rate. According to "recession-push, unemployment push, desperation effect, or refugee effect" views, as unemployment rises, people have difficulty finding paid jobs and are led to self-employment as an alternative. In other words, self-employment increases as unemployment rises. Another view suggests that unemployment may be negatively related with self-employment. According to the prosperity pull or entrepreneurial effect, self-employment leads to increased entrepreneurial activity and therefore causes a decline in unemployment in

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[1] As governments consider that self-employment will help stimulate innovation, generate new jobs, and increase the competition in the product market, they conduct supporting policies for self-employment. However, Blanchflower (2000, p.472) argues that "economists have little evidence on whether these hypothetical benefits exist in practice." See Blanchflower (2000) for further discussion.

[2] Van Stel et al. (2005) discuss that this Schumpeterian effect depends upon the level of economic development. See Van Stel et al. (2005) and Carree et al. (2007), among others, for a discussion about economic development and business ownership.

[3] Blanchflower and Oswald (1998) investigate the factors that determine the reasons to become and remain an entrepreneur.

subsequent periods. While recession-push hypothesis suggests a positive relationship, prosperity-pull hypothesis proposes a negative relationship between self-employment and unemployment.

> "There is both considerable theoretical and empirical support for both views and scholars have had trouble unraveling the relationship between entrepreneurship and unemployment. Unraveling it matters because understanding the true relationship can guide policy makers as they decide if, and how, to promote entrepreneurship as they strive to reduce unemployment (Thurik et al., 2008, p.674)."

 Towards the similar objective as Thurik et al. (2008) highlights above, this study attempts to display some facts about self-employment in Turkey and to investigate the dynamic relationship between the self-employment rate and the unemployment rate. The existence of a long-run relationship between self-employment and unemployment rates and the direction of causality between these variables are analyzed. It should be noted that the definition of self-employment used in the empirical analysis is very important while interpreting the results. The interpretation of the results will take into account the existing data restrictions.

The paper is organized as follows: Section 2 describes and delineates the concept of self-employment. Section 3 includes a brief survey of the related literature. Section 4 attempts to elucidate some facts about self-employment and unemployment in Turkey. Section 5 gives information about the data and the methodology. Section 6 presents empirical findings. Lastly, Section 7 recapitulates the results and discusses the policy implications.

2. Definition of Self-Employment

This section briefly specifies the self-employment concept employed in this paper. There are two issues that should be emphasized: First, based on the explanation of Blanchflower (2000, p.478), the dissimilarities of economic activities (self-employed jobs) are the significant characteristics of this group. Blanchflower (2000, p.478) asserts that "The self-employed are a very disparate group. They are likely to include farmers, craftsmen, shopkeepers, lawyers, doctors, architects, entertainers, sportsmen and women, computer programmers and analysts amongst others." Second, the definition of the self-employed is not identical across countries. "The different

statistical treatment results from a different set-up of labor force surveys in different countries (Van Stel, 2006, p.48)."

The Turkish Statistical Institute (TURKSTAT) classifies the status of employment according to the International Classification by Status in Employment (ICSE)-1993.[4] Figure 1 depicts the scheme of the status of employment based on the TURKSTAT's data procurement.

Figure 1 Status in Employment
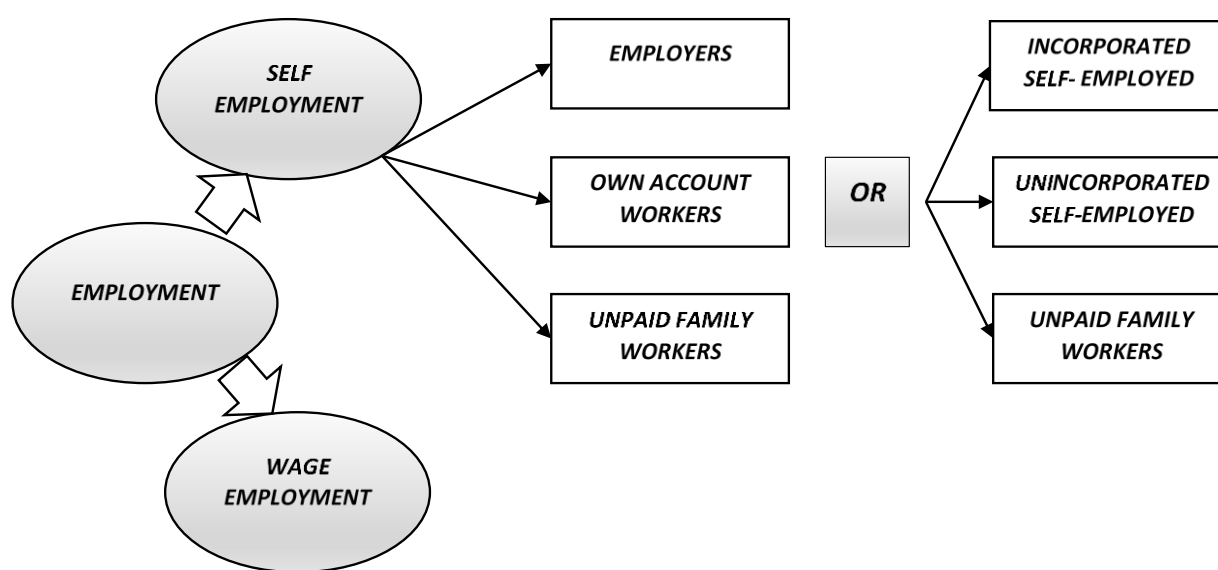
The status of employment is first grouped as "wage employment" and "self-employment" as can be seen in Figure 1. Wage employment is also called "paid employment" or "employees". The following step in Figure 1 covers three types of self-employment. These are: i) employers, ii) own-account workers, and iii) unpaid family workers (contributing family workers). Employers, own-account workers, and unpaid family workers are considered as self-employed by ICSE - 1993. Some studies exclude unpaid family workers from the definition of self-employment.

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[4] According to ICSE-1993, status of employment constitutes "employees, employers, own-account workers, members of producers' cooperatives, contributing family workers, and workers not classifiable by status". See http://laborsta.ilo.org/applv8/data/icsee.html.

The self-employed can also be classified as unincorporated self-employed, incorporated self-employed, and unpaid family workers (Figure 1). In some countries owner/managers of incorporated businesses (OMIBs) are not regarded as self-employed but counted as employees (e.g., U.S., Australia, Japan, and Norway- they exclude all OMIBs or most OMIBs) (Van Stel, 2006).[5]

In this study, the definition of self-employment includes both unincorporated and incorporated self-employed. As Van Stel (2006, p.48) argues, incorporated self-employed "are not fundamentally different from the unincorporated self-employed as far as 'entrepreneurial spirit' is involved: both types of self-employment have chosen to 'be their own boss'."

The terms self-employment and business ownership are sometimes used interchangeably in the literature. For example, Van Stel (2006, p.48) uses the term 'business owners' instead of self-employed "in order to distinguish from 'self-employed' which is often understood to include only the unincorporated self-employed." Van Stel (2006) mentions that

> "…Schumpeterian entrepreneurs are a small fraction of the business owners, while on the other hand some entrepreneurs (so-called intrapreneurs) do not work on their own account. Also, a disadvantage of using business ownership as a proxy for entrepreneurship is that it treats all businesses as the same, both high-tech and low-tech, and the businesses are not weighted for impact (Audretsch, 2003). Nevertheless, a major advantage of the business ownership measure is that it is measured and can be compared across countries and over time (Van Stel, 2006, p.8)."

3. Literature Survey

There are many studies examining the relationship between unemployment and self-employment in the literature. Knight (1921) argues that individuals choose between three states: unemployment, self-employment and employment based on their relative prices (quoted by Thurik et al., 2008). Oxenfeldt (1943) mentions that unemployment is an important force inducing people to establish businesses. Unemployed individuals who are desperate to find a paid job, move to self-employment. "At the individual level, (the risk) of unemployment is likely to

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[5] Also see http://data.ondernemerschap.nl/Webintegraal/WebDataSets/Toelichtingen/Compendia.htm

have a positive effect on the level of entrepreneurship through the reduction of the opportunity costs of self-employment (Audretsch et al., 2002, p.35)." This positive relationship between unemployment and self-employment has been known as the unemployment push or refugee effect.

However, the opposing view arises with some arguments. One argues that unemployed individuals are mostly the ones with lower levels of information, skills and capabilities to start up new businesses. High unemployment rates give rise to a declining likelihood of working as self-employed (Thurik et al., 2008). Oxenfeldt (1943) also discusses that most unemployed individuals desire to set up new businesses but they cannot do so since they do not have enough capital. Personal wealth raises the probability of a person becoming self-employed (Johansson, 2000; Nykvist, 2008).[6] In addition, "at the macro level unemployment can be associated with economic recession and a lack of entrepreneurial opportunities (Audretsch et al., 2002, p.97)." All these views would propose that high unemployment may be accompanied with a low rate of self-employment.

Specifically, self-employment, which can be thought of as a type of entrepreneurship, is expected to have favorable economic growth effects (Manser and Picot, 1999). Entrepreneurial activities of self-employed individuals result in hiring employees to the new businesses and thus giving rise to subsequent falls in the unemployment rate. The outcome of this prosperity pull hypothesis has been known as the entrepreneurial effect (Thurik et al, 2008).[7]

Regarding the above arguments, the results of the empirical studies are diverse in the literature. Highfield and Smiley (1987) find that increasing unemployment rates were associated with increases in the rate of new business incorporations in their study for the United States. Alba-Ramirez (1994, p.189) shows that the "duration of unemployment increases the probability of becoming self-employed" for the U.S. and Spain. Glocker and Steiner (2007) present empirical

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[6] Hurst and Lusardi (2004, p.319) find that "the propensity to become a business owner is a nonlinear function of wealth. The relationship between wealth and entry into entrepreneurship is essentially flat over the majority of the wealth distribution. It is only at the top of the wealth distribution—after the ninety-fifth percentile—that a positive relationship can be found."

[7] See Thurik et al. (2008) for the survey of literature about the supporting ideas of entrepreneurial effect and counterarguments suggesting that contribution of the entrepreneurial effect to decline in unemployment rate is small.

evidence that long-term unemployment increases entry rates into self-employment for Germany. Evans and Leighton (1990) report that the self-employed are more likely to become unemployed than wage-employed. In their analysis of 23 OECD countries for the period 1974-1994, Audretsch and Thurik (2000) find that moving towards entrepreneurial activities in the economy results in a decline in the unemployment rate. They stress that "growth in the number of entrepreneurs leads to reduction in the rate of unemployment (Audretsch and Thurik, 2000, p.30)." Thurik et al. (2008, p.675) point out that Audretsch and Thurik (2000) "identify an 'entrepreneurial' effect in terms of the positive impact on employment from new firm entry."

Lin et al. (1999) attains a small negative relationship between exits out of self-employment and unemployment in Canada. Blanchflower and Oswald (1998, p.37) point out "the negative effects of the local unemployment rate" on self-employment. Blanchflower (2000) finds a negative relationship between the self-employment rate and the unemployment rate for most of the OECD countries. Thurik, et al. (2008) analyze the dynamic relationship between the rates of self-employment and unemployment for a panel of 23 OECD countries in the period 1974-2002. They find evidence for both refugee and entrepreneurial effects, while entrepreneurial effects are stronger than the refugee effects.

4. Facts about Self Employment and Unemployment in Turkey

The structure of self-employment may display different characteristics in different income levels. Blanchflower (2000) points out that the overall trend in self-employment since 1966, has been going down in most countries.[8] In his study for OECD countries, Blanchard (2004, p.8) remarks that "self-employment rates are generally higher in poorer countries such as Greece, Turkey, Mexico, Korea and Portugal (Blanchard, 2004, p.20)."

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[8]Blanchflower (2000) states that Portugal, New Zealand, and the United Kingdom are the main exceptions to this.

**Figure 2 Status of Employment in Turkey (1988-2013)**
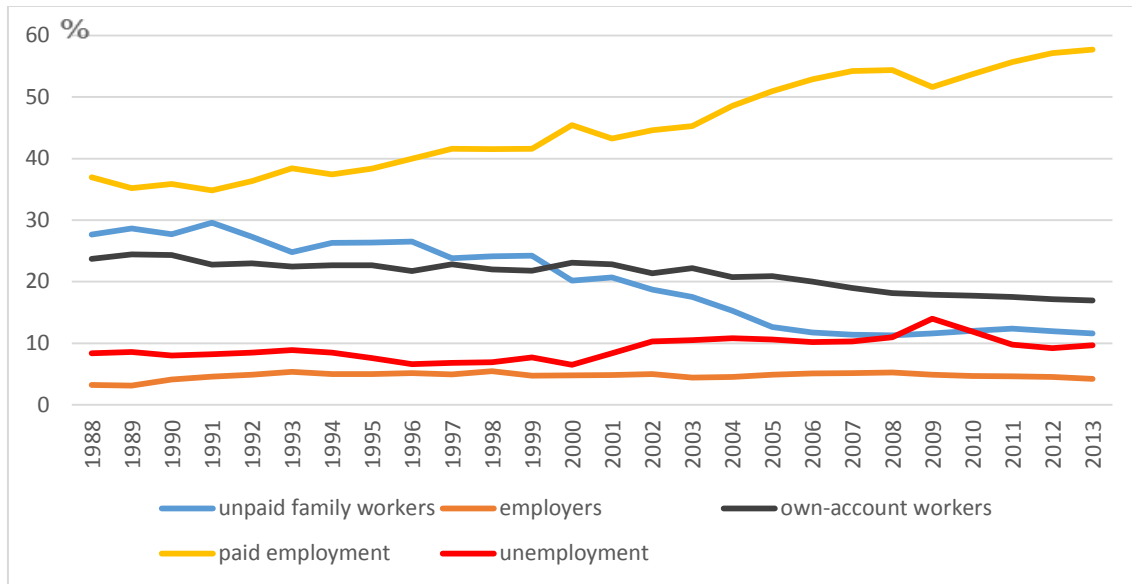
Source: TURKSTAT, 2014.

The shares of employment status for the period 1988-2013 are depicted in Figure 2. Increasing differences in the shares of wage-employment and other categories can be observed in this period. Total wage employment has also increased, however, the rate of increase has slowed down.[9] ILO (2013, p.21) highlights that "with higher levels of economic development, the number of self-employed workers has been falling in both manufacturing and commerce, with a concomitant rise in wage employment."

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[9] See Ozerkek (2014) for further information.

Figure 3. Self-Employment Rate and Unemployment Rate in Turkey (1970-2013)
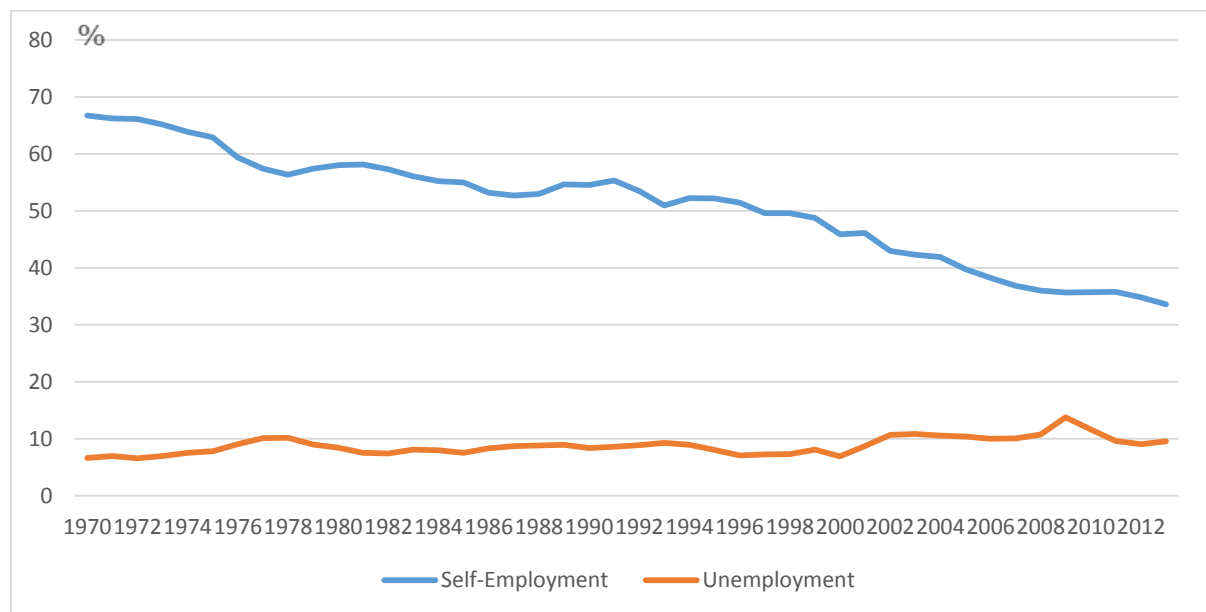

Source: OECD Economic Outlook Statistics and Projections, 2014.

Figure 3 depicts the self-employment rate and the unemployment rate for Turkey in the period 1970-2013. The declining trend in the self-employment rate in Turkey is in line with the above facts. It should be noted that unpaid family workers are included in the definition of self-employment in Figure 3.[10] The unemployment rate is under 10% until 2001 (with the exception years of the 1977 and 1978-crisis years). After the 2001 crisis, the unemployment rate rose above 10%. The level has been slightly above that of previous 2001.

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[10] For the period of 1970-2013, unpaid family workers cannot be removed from the self-employed because of data limitations.

**Figure 4. Self-Employment Rate by Sectors in Turkey (1988-2013)**
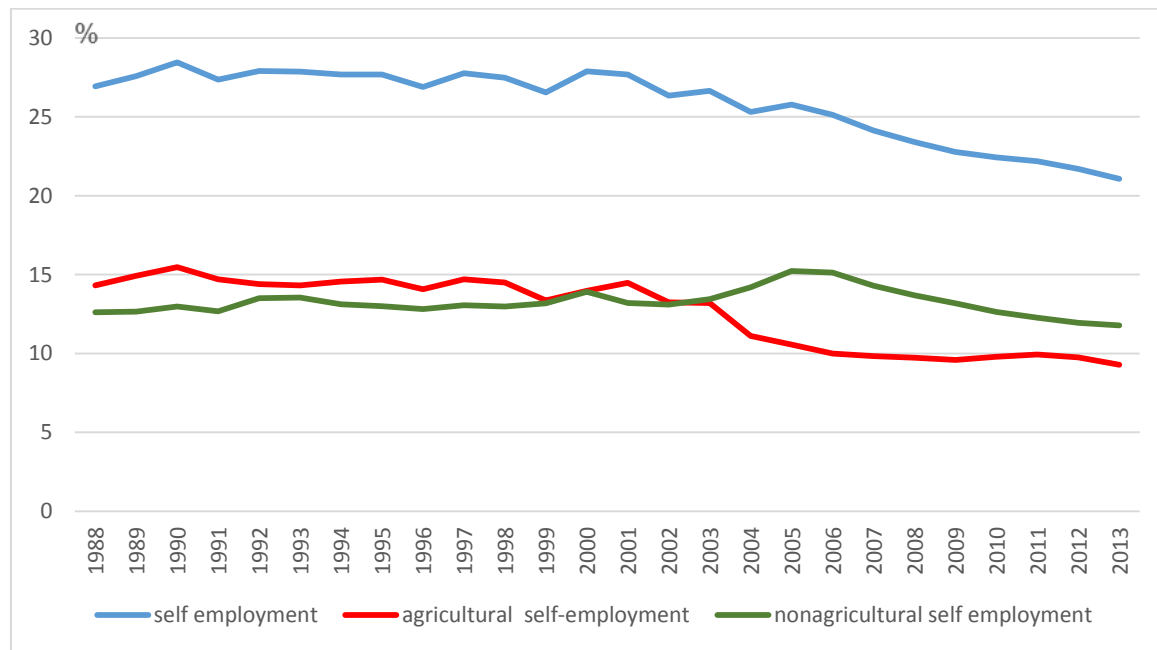
Source: OECD, 2014.

Figure 4 shows the self-employment rate by sectors in the period 1988-2013. Unpaid family workers are excluded from all three categories of self-employment in the Figure. The overall decline in self-employment during the period can clearly be seen. Particularly, the decline in the self-employment rate is prominent after the year 2000. Counter to its previous course, the agricultural self-employment rate has been below the rate of non-agricultural self-employment since 2003. The agricultural self-employment rate has been going down since 2001, while the non-agricultural self-employment rate has been decreasing since 2006. Non-agricultural self-employment displays a slight increase in the first half of 2000s and creates a scissor and stays above the agricultural self-employment line. This also points to a change in the sectoral composition, while both lines have decreasing trends.

As is mentioned, since the definition of self-employment may differ across countries, the data for the self-employed is not entirely comparable across countries over time. For this reason, EIM prepared a unified data set of business owners. The COMPENDIA (Comparative Entrepreneurship Data for International Analysis) data set contains the number of business

owners for many countries. COMPENDIA uses the terms "business owners" and "self-employed" interchangeably. The data for business owners includes both unincorporated and incorporated self-employed. The unpaid family workers were removed from the database.[11] The data for business ownership rate is defined "as the number of business owners divided by total labor force" in COMPENDIA Statistics.[12] The data for Turkey is available between the years of 1988-2011.

Figure 5. Unemployment Rate (Harmonized) and Self-Employment (Business Ownership) Rate
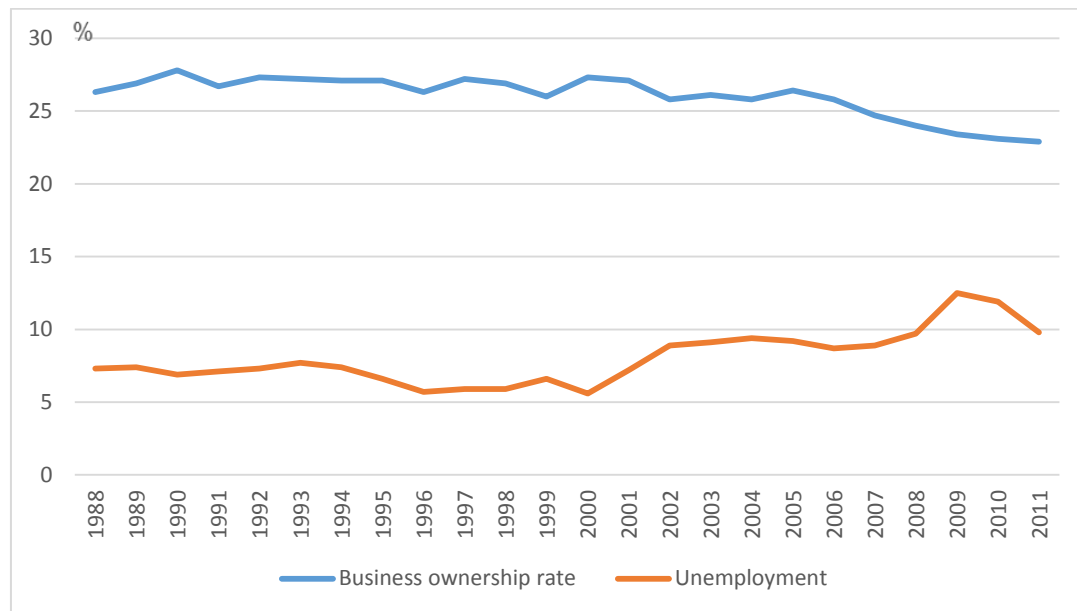
Source: EIM-COMPENDIA, 2014.

The unemployment rate (harmonized) and business ownership (self-employment) rate are shown in Figure 5. The correlation between these variables is -0.82 (p-value 0.000) in the period 1988-2011. The data of the self-employment rate obtained from TURKSTAT and the data for business ownership from COMPENDIA is almost identical (See Figure A.1 in Appendix A)

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[11] "Data sources include *OECD Labour Force Statistics 1978-1998*. EIM completed the missing data by using ratios derived from various other sources." See
http://data.ondernemerschap.nl/Webintegraal/WebDataSets/Toelichtingen/Compendia.htm for detailed information about the data.
[12] http://data.ondernemerschap.nl/Webintegraal/WebDataSets/Toelichtingen/Compendia.htm

5. Data and Methodology

The aim of this research is to shed light onto the interaction between the rates of self-employment and unemployment in Turkey. To this end, the two views suggesting that i) increases in self-employment rates cause a decline in subsequent unemployment rates and ii) increases in unemployment rates lead to a consequent rise in self-employment rates, are being investigated.

The analysis is carried out by using the annual data for the self–employment rate (*SE)* and the unemployment rate (*UNEMP*) in the period 1970-2013. The data are obtained from OECD Economic Outlook Statistics and Projections. The available data of self-employment for this period includes unpaid family workers. The self-employment rate (*SE)* is computed as (self-employed/labor force)*100.

Initially, the existence of cointegration is investigated with the test proposed by Johansen (1988) and Johansen and Juselius (1990). The test estimates the cointegrating relations and whether a long-run relationship between self-employment rate and unemployment rate exists. In order to assess the causal links in this relationship, the two hypotheses are estimated by vector error correction model (VECM). The lagged dependent variables are placed on the right hand side in the VECM, along with the dependent variables of the change in the self-employment rate and change in the unemployment rate.

Since the variables of the self-employment rate and the unemployment rate may interact with each other, the analysis is performed using a VECM, which considers the endogeneity of these variables. The VECM enables us to find short-term adjustments and long-term linkage between the endogenous variables. A typical two-variable VECM for the self-employment rate (se) and the unemployment rate can be expressed as follows:

$$\Delta UNEMP_t = \alpha_1 + \sum_{i=1}^{n} \beta_{1i} \Delta SE_{t-i} + \sum_{i=1}^{n} \delta_{1i} \Delta UNEMP_{t-i} + \varphi_1 u_{t-1} + \varepsilon_{1t} \quad (1)$$

$$\Delta SE_t = \alpha_1 + \sum_{i=1}^{m} \beta_{2i} \Delta SE_{t-i} + \sum_{i=1}^{m} \delta_{2i} \Delta UNEMP_{t-i} + \varphi_2 u_{t-1} + \varepsilon_{2t} \qquad (2)$$

where Δ stands for the first-difference operator. u denotes the error correction term. n and m are the lag lengths determined by Schwartz information criteria (SIC). The coefficients φ_1 and φ_2 represent the adjustments of $\Delta UNEMP$ and ΔSE to long-run equilibrium.

6. Empirical Findings

This study employs a two-variable system to investigate the long-run relationship between the unemployment rate and the self-employment rate for the period 1970-2013. Initially, the order of integration of the variables are tested by using Augmented Dickey Fuller test (ADF) test (Dickey and Fuller 1979; 1981) and Phillips–Perron (1988) test (PP). Table 1 reports the test statistics in the levels for constant and constant and trend cases. The results show the existence of a unit root for UNEMP and SE.[13]

Table 1 Panel Unit Root Tests in the Levels (1970-2013)

Variables	ADF		PP	
	Constant	Constant and Trend	Constant	Constant and Trend
unemp	-2.382	-3.495***	-2.331	-2.633
	(0.152)	(0.053)	(0.167)	(0.268)
se	-0.051	-1.572	-0.252	-1.713
	(0.948)	(0.787)	(0.943)	(0.727)

Schwartz Information Criteria with a maximum lag length of 1 is used for ADF test. For Phillips-Perron unit root test, Bartlett Kernel Spectral estimation method and Newey-West automatic bandwidth are selected. The p-values are given in parentheses. (***) denotes significance for the 10 % level.

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[13] See Appendix A for panel unit root tests in first differences. All variables become stationary in first-differenced form.

The non-stationarity at the same integration order enables us to implement cointegration analysis. The results of Johansen-Juselius (1990) cointegration tests using trace statistics are shown in Table 2. The results indicate that there exists one cointegrating relationship between unemployment rate and self-employment rate. Trace test reveals one cointegrating equation at the 5% significance level. The normalized cointegrating coefficients from Johansen-Juselius (1990) estimation are given in Table 3.

Table 2 Johansen Cointegration Test-Trace Statistics (1970-2013)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5% Critical value	Prob.
None	0.348	18.609	15.494	0.016**
At most 1	0.015	0.630	3.841	0.427

Lag length is is set 1 and 2 for respective periods, according to the lowest SIC. The results are based on linear deterministic trend. (*) and (**) denote 1% and 5% significance levels, respectively.

Table 3 Normalized Cointegrating Coefficients

(1970-2013)

unemp	se
1.000	0.140*
	(0.029)

Standard errors are in parentheses. (*) denotes the significance at 5 % level.

We observe a significant negative long-run relationship between UNEMP and SE. A 1% increase in self-employment rate leads to 0.14 % decline in unemployment rate. The direction of causality between UNEMP and SE could be formulated by using the vector error correction model (VECM). Table 4 reports the results of the estimation of the VECM. The lag length of the

series are set based on SIC. For the analysis period 1970-2013, a dummy variable is used onwards after the year 1980. The error-correction term for UNEMP is negative and statistically significant at the 1% level. In other words, there is a causal link running from SE to UNEMP. The results indicate that increases in self-employment rates give rise to a decrease in subsequent rates of unemployment.

Table 4 VECM Results (1970-2013)

Error Correction	D(UNEMP)	D(SE)
CointEq1	-0.573	0.463
	(-4.046)	(2.378)
D(UNEMP(-1))	0.355	-0.393
	(2.241)	(-1.804)
D(SE(-1))	-0.073	-0.058
	(-0.596)	(-0.345)
C	0.521	-1.423
	(1.487)	(-2.956)
Dummy	-0.662	0.772
	(-1.845)	(1.565)

t-statistics are in parentheses.

The empirical results show that there is a dynamic interrelationship between changes in the rates of self-employment and unemployment. There exists a long-run relationship between these variables and short-run adjustment towards a long-run equilibrium. The empirical evidence indicates a causality running from the self-employment rate to the unemployment rate in Turkey. The results support the view of entrepreneurial effect, whereas there is no evidence for any refugee effect in Turkey. Given data limitations, we were are unable to remove unpaid family workers from the self-employment for the period 1970-2013. Considering that unpaid family workers are expected to have a negligible effect on the entrepreneurial activities (Van Stel, 2006; Thurik et al.2008), the full entrepreneurial effect has been possibly disguised in the present analysis.

A similar analysis has been carried out for the period 1988-2013. However, there is no evidence of cointegration between the rates of self-employment and unemployment. It should also be noted that the analysis was intended to be made for agricultural and nonagricultural sectors separately. However, it does not seem possible because of data unavailability and incomparability.[14]

7. Conclusion

The paper focuses on the dynamic relationship between the rates of self-employment and unemployment in Turkey. A two-equation VECM is used to estimate both changes in unemployment and self- employment for Turkey over the period 1970–2013. The results indicate that there is a long-run negative relationship between self-employment and unemployment in this period. In addition to the existence of a long-run link between them, there exists a causality running from the self-employment rate to the unemployment rate. The analysis does not capture any refugee effect in Turkey over the period. Hence, the results reveal that the rate of unemployment is not positively related with the self-employment rate. The empirical evidence suggesting that changes in self-employment rates have a negative effect on subsequent unemployment rates point out the existence of an entrepreneurial effect. However, the structure of available self-employment data does not permit us to see the exact effect of entrepreneurial effect, by possibly disguising it. It needs further analysis.

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[14] The sectoral unemployment rate data for the 1988-2003 has not been revised according the new population projections. Therefore, TURKSTAT mentions that these data cannot be compared to the data after 2004.

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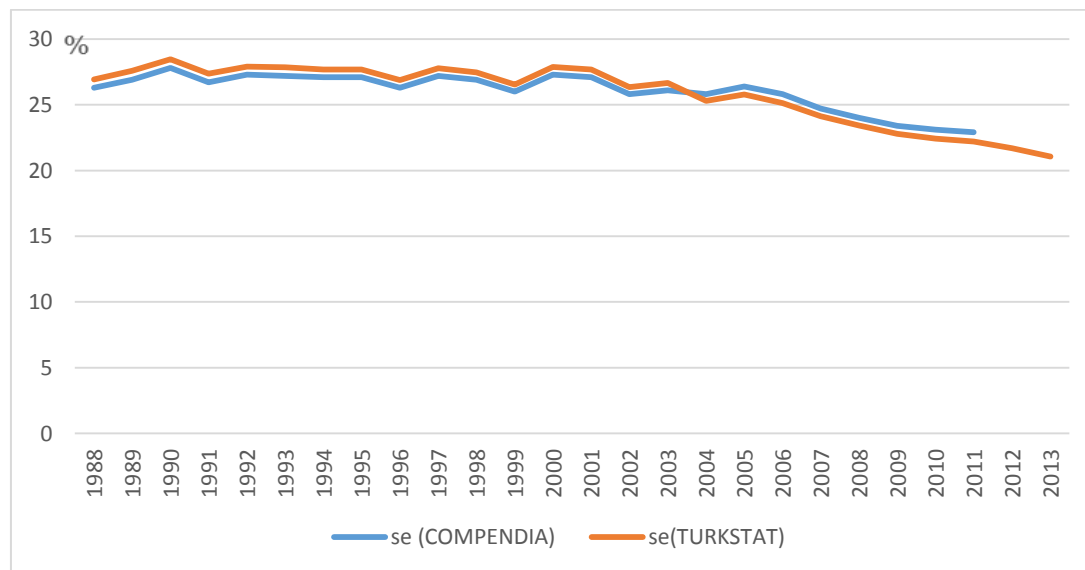http://data.ondernemerschap.nl/Webintegraal/WebDataSets/Toelichtingen/Compendia.htm <accessed in December 10, 2014>

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Acknowledgements

Appendix A

Figure A.1. Self-Employment Rate: Data from COMPENDIA and TURKSTAT/OECD

Source: COMPENDIA, OECD, 2014.

Table A.1 Panel Unit Root Tests in First Differences

	ADF		PP	
Variables	Constant	Constant and Trend	Constant	Constant and Trend
unemp	-5.447*	-5.385*	-6.609*	-6.282*
	(0.000)	(0.000)	(0.000)	(0.000)
se	-5.558*	-5.498*	-5.555*	-5.495*
	(0.000)	(0.000)	(0.000)	(0.000)

Schwartz Information Criteria with a maximum lag length of 1 is used for ADF test. For Phillips-Perron unit root test, Bartlett Kernel Spectral estimation method and Newey-West automatic bandwidth are selected. The p-values are provided in parentheses. (*) and (**) denote significance for 1 % and 5% level, respectively.