

PUBLIC FUNDING AND SELF-EMPLOYMENT CREATION

FUNDOS PÚBLICOS E CRIAÇÃO DE AUTO-EMPREGO

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Abstract

When countries are in times of limited financial resources the provision of public funds to active labour market policies should receive close attention from the governments and become as effective as possible. This aim should be always grounded in evidence criteria and not in political insights or ideological social constructions. This paper aims to provide some data and potential conclusions in order to deliver a modest contribution to the evidence-based debate on ALMP policy making in Portugal. The analysis was made over two variables: the public expenditure on self-employment creation measures and the number of self-employment positions created. The results suggest that there is a weak linear correlation between the two variables. This might point to an inefficiency in the use of public funds; or in other hand, it may mean that public expenditure is only remotely responsible for the creation of self-employment positions and, therefore, that there are other variables (or reasons) that explain the phenomenon.

Keywords: self-employment, active labour market policies, employment, unemployment

Resumo

Quando os países experimentam tempos de escassez de recursos financeiros a alocação de fundos públicos destinados a políticas ativas de emprego, deve merecer uma atenção incisiva pelos governos e tornar-se o mais eficiente possível. Este objetivo deve ser sempre alicerçado em critérios de evidência e não em instintos políticos ou construções sociais ideológicas. Pretende-se com este texto, obter alguns dados e potenciais conclusões, de modo a podermos oferecer uma modesta contribuição para o debate baseado em evidências sobre a construção de políticas ativas de emprego, em Portugal. A análise incidu sobre duas variáveis: a despesa pública em medidas ativas

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de criação do próprio emprego, ou empresa, e o número efetivo de empregos assim criados. Os resultados sugerem que existe uma correlação linear fraca entre estas duas variáveis. Tal pode eventualmente indicar uma ineficiência na utilização dos fundos públicos. Ou, por outro lado, pode significar que a despesa pública é apenas remotamente responsável pela criação do próprio emprego e que, portanto, existem outras variáveis (ou razões) que explicam o fenómeno.

Palavras-chave: autoemprego, políticas ativas de emprego, emprego, desemprego

Introduction

The rise of unemployment rates all over Europe, as a result of a major recession mainly later 2008, has inevitably carried labour market policies back to core of public policy debate. The main aim of all governments is to move the equilibrium (OECD, 1998) of public expenditure on labour market policies away from passive measures towards spending on Active Labour Market Policies (ALMP) and so help to reduce structural unemployment. This was verified by Card, Kluge & Weber (2010) as they find that ALMP tend to have larger effects in periods of slow economic growing and higher unemployment.

Thus, ALMP are currently the main public gears to smooth the social effects and dissimilarities resulting from unemployment. In terms of activation policies, OECD (2015) includes in ALMP all social expenditure (other than education) which is aimed to improve the beneficiary's prospect of finding gainful employment or to increase their earning capacity. From the point of view of labour demand, examples of these ALMP are start-up incentives and other self-employment measures.

The available data, from the main European statistical providers, consistently show a decrease in the amount of self-employment creation in Europe. However, in some countries public expenditure in self-employment creation has risen every year. Yet relatively little is known about the determinants of self-employment, especially the effects of government policy instruments on the self-employment rate

(Parker & Robson, 2004). Moreover, the huge amount of literature, studies and research produced on this subject repeatedly displays dissimilar conclusions.

Setting self-employment creation through Portuguese public measures as the dependant variable, and public expenditure as the independent variable (and grounded on those findings and studies) this paper seeks to analyse whether or not this ALMP produces the desired outcomes. This paper aims to provide some figures and potential conclusions in order to provide a small contribution to the evidence-based debate on ALMP policy making in Portugal.

1. Theoretical Framework and Studies in Measuring ALMP Effects

One of the most recent typology for ALMP was proposed by Brown and Koettl (2015). These authors divide the ALMP into three categories related with the target: labour demand, labour supply and labour market matching. This latter category aggregates the public policies that provide incentives for creating employment and includes self-employment creation measures and/or business start-up support. The programmes (or measures) can change from country to country according to assorted criteria, for example, the sort of payment and the level of support or training provided (Cueto and Mato, 2006). The model of subsidization can be a fixed payment or a lump-sum grant (*idem*). Simultaneously, the scheme can offer further services such as training (voluntary or as a prerequisite for participation) and/or other support (advisory mechanisms) (*ibidem*).

This paper is focused on the labour market matching category.

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Today the ALMP have become one of the most important elements of the European Employment Strategy (EES), and are highly recommended as a tool to boost employment (OECD/European Union, 2015), but there are different conclusions and discussions about their real

effectiveness (Jovan and Jonel, 2011). Evidence about the impact of ALMPs on unemployment is currently grounded in macro or micro-economic frameworks (Martin, 2014). In this paper the distinction is not made, as it is in the literature review, as this paper aims to take a most likely holistic view about this social phenomenon.

In 1996, in the OECD's framework, Robert Fay conducted a study reviewing the evidence from programmes evaluations on the effectiveness of some ALMP to help unemployed to return to labour market. According this author there are policies that work for the most part of unemployed people. However the capability of ALMP to aid a large numbers of unemployed, at any given time, is restricted. In part, this relates to decreasing returns in extensive programmes (especially in training policies). In part, this is linked to labour market distortions that can be introduced or intensified with extensive programmes. In contrast, a large number of small well-targeted programmes may be costly if there are large fixed costs to start new programmes. Among other recommendations he identified the following policy implications based on results of assessments of public aid for starting an enterprise: a) these programmes only work for a small subset of the unemployed population (usually, these look to be men, mostly under 40 with relatively higher education levels and whose current status of unemployment is relatively short); b) these programmes or measures may be better designed and used for the relatively short-term unemployed; c) it is unclear if the financing format has a significant impact on the outcome, because these individuals are liquidity-constrained, so an initial lump-sum (e.g. receiving the overall unemployment subsidy in one single sum) may be more effective; d) those who get money from other sources, e.g. family and/or friends, may be more driven to survive.

Elmeskov et al. (1998) worked over annual data from 19 OECD countries in the period 1983–1995. The variable used to proxy active policies was the public expenditure on ALMP per unemployed person relative to the output per capita. The study found that ALMP spending has a negative impact on the unemployment rate, yet is only marginally significant.

A study conducted by Heckman, et al. (1999) upon ALMP, revealed that these programmes are often ineffective and for most groups of participants the benefits are discreet or even modest. According to these authors, many ALMP initiatives do not have a positive cost-benefit test. Therefore, there are two explanations why the private and social advantages of these programmes are generally small: first, the per-capita expenditures are usually small, relative to the deficits that these programmes are being asked to address (in order to generate extended gains they would have to be related with very large internal rates of return); second, services are targeted toward relatively unskilled individuals (Heckman et al., 1999). This last finding was corroborated in latter studies (Albiol et al. 2015) that confirmed that self-employed people need more basic and specialized (or technical) skills than salaried employees.

Also in 1999, Nickell and Layard conducted a study over two 6-year averages from 20 OECD countries in the period 1983–1994. The ALMP variable studied was the spending per unemployed person as a percentage of GDP per member of the labour force. This study concluded that spending on ALMP has a negative impact on the unemployment rate and no major effect on the employment-to-population rate.

In a study of self-employment firms carried out in Germany, Pfeiffer and Reize (2000), found a lack of any significant impacts on employment growth and a significant negative impact on firm survival. The results do not seem to support the effectiveness and efficiency of bridging grants as an instrument for creating employment through the promotion of self-employment from unemployment. One reason for this result is likely to be the design of the programme, which seems to support opportunistic or myopic behaviour in the group of unemployed persons who received bridging subsidies (Pfeiffer and Reize, 2000).

Martin and Grubb (2001) in their study of evaluations, conducted between 1985 and 2000, concluded that the impact of some public measures being implemented in the labour market do not have encouraging results (in terms of increasing employment and earnings). They do however underline that there are some programmes that

provide positive indicators, such as counselling, subsidies for employment in the private sector and training, but with a note that the effects are small. The same conclusion was verified ten years later by Vlandas (2011).

Card et al. (2010) stated similar conclusions as they argue that subsidised public sector job programmes are generally less successful than other forms of ALMP. These researchers have assembled and analysed a sample of impact estimates from 207 studies on ALMP. They argue that it is central to differentiate between impacts along time horizons since the end of the programmes or measures, and to consider how the time profile of impacts varies by the category of ALMP. They also studied the importance of unemployed heterogeneity, and look for evidence that specific subcategories of unemployed may benefit more or less from particular categories of programs. With regard to the impacts of different types of ALMP, Card et al. (2010) find that the time outlines of “work first” style job search support and sanction/threat programs differ from the profiles of “human capital” style training and private sector employment grants (e.g. private unemployment assurances). Work first programs are likely to have higher short term effects, while training programs have small (or in some cases even negative) short term impacts. This team also stated that public sector employment programs have small or even negative program impacts at all-time horizons. With regard to the state of the labour market, they find that ALMP tend to have larger impacts in periods of slow economic development and higher unemployment rates.

In 2002, Calmfors et al. among other findings concluded that: a) public measures only slightly help to match supply, b) demand for labour and subsidized employment positions results in a high level of substitution (displacement), and c) training measures are not effective. In general, public measures help to reduce unemployment, but at the same time do not have an impact on the aggregate level of employment. The biggest impact was achieved in increasing activity level. A further important conclusion of the study is that the programmes lose their effectiveness with an increase in volume, so, in terms of policy making, it is advisable to keep the volume at a low level.

Using panel data for 15 industrialized countries in the 1990s, Estevão (2003) found that ALMP raised employment rates in the business sector. He found that direct subsidies for job creation were the furthermost effective, among several ALMP. According to this author, whether ALMP are cost-effective from a public expenditure point of view remains to be verified, but they are not alternatives for broader and holistic policy reforms. Although the global positive impact of ALMP on employment rates, their budgetary effort is high for all countries and they are likely to be conditional on diminishing earnings as employment rates increase. At certain employment levels ALMP could recuperate their cost (or not) if their results are to place the users into employments and these benefits are removed.

Using annual data from 19 OECD countries over the 1985–1999 period, Boone and Van Ours (2004) assessed the impact of several types of active measures on the unemployment rate and the employment-to-population rates. They found that expenditure on labour market training programmes has the largest (positive) impact on labour market outcomes. However, public expenditure on public employment services looks like to reduce the unemployment rate but does not affect the employment-to-population rate. Public expenditure on employment incentives looks to be largely ineffective for reducing the unemployment rate or improving the employment-to-population rates.

Studying the Swedish labour market, Henrekson (2005) settled that the structure of public incentives for self-employment has a negative impact on the return to entrepreneurial behaviour both in relative and absolute terms. The reasons are due mainly to the taxation of entrepreneurial income, muted savings incentives and strict and rigid laws on labour security.

Atherton (2006) argued that the challenges for public intervention and funds allocation to entrepreneurs and/or start-ups are two-fold. The first is to assess whether the start-up has genuine potential for sustainability. Start-ups that are weak in both capability and business proposition do not in themselves present a case for public funding (in that the risk of failure is likely to be high in such speculative

and marginal ventures). In these cases, non-provision of public support, and perhaps advice and guidance not to start, can be the most efficient allocation of public funds. The second one is to identify under what circumstances public intervention can improve prospects not only for future start-up, but also for survival and growth.

The European Commission (2006) in a study about the employment in Europe, argue that some ALMP specifically, employment grants (or start-up loans), together with counselling, can promote or encouraging self-employment and/or the creation of small enterprises. Though, assessments strongly suggest that this sort of programmes seems to help only a marginal target of unemployed, namely relatively young men usually with higher levels of education, which already have a trend to have the required entrepreneurial skills and motivation to survive in an entrepreneurial framework.

Baumgartner and Caliendo (2007) conducted a research on two German programmes, in order to estimate the effectiveness and efficiency of the public expenditure. They concluded that one of the programme's funding of individuals (to start self-employment) not only helped them to enhance their employment status and earn more income, but also saved public financial resources by reducing spending on unemployment benefits.

Caliendo et al. (2008) assessed the employment effects of job-creation schemes on the participating individuals in Germany. In general the findings of these researchers are quite disappointing because most of the effects are insignificant or negative. Participation in programmes does not help the unemployed people to reintegrate into regular (unsubsidised) employment. Besides, if the analysis relies over cumulated effects in the full observation period and over a cost-benefit analysis, the scarce positive aspects are likely to disappear completely. The relatively high costs of job-creation measures make it likely that these programmes have to be rated as failures from the cost-benefit side. This would clearly help to judge the performance of job-creation measures at a deeper level in all countries.

In 2009, Scott Shane concluded that it is bad public policy to encourage entrepreneurship. He argued mainly that: a) there is no evidence that unemployed people create too few or the wrong businesses in the absence of public intervention, and a lot of evidence that these policies lead people to start marginal businesses that are likely to fail, have little economic impact and generates minor employment positions; b) there is no evidence that creation of new enterprise causes economic growth; rather, economic growth probably causes people to start businesses; c) new firms do not create more jobs than existing firms; to get to 50 percent of net new jobs created by “new” firms, we have to consider all firms that are nine years old and younger to be “new” and d) the jobs in start-ups pay lower wages, offer scarcer benefits, and are more likely to disappear over time than jobs in existing companies.

Koellinger and Minniti (2009) provided evidence that substantial unemployment benefits are negatively related to emerging entrepreneurship, regardless of entrepreneurial motivation and form. So, higher unemployment benefits tend to reduce the whole entrepreneurial tendency of a country. The results of this two authors suggests that if entrepreneurial activity is significant for economic progress, then the opportunity costs of unemployment assistances may be higher than it is usually supposed in labour economics studies.

Kluve (2010) argued in a different way. Training measures are likely to have a modest impact on employment rates improvement. Compared with training, subsidies and support programmes to employment had a 50% positive effect. The analysis made by this author over 96 academic studies from 19 countries, presented a positive finding in modern forms of active programs that drive the marked differential pattern of program success. Modern private sector incentive schemes and programmes are those ones that work successfully and that modern types of “Services and Sanctions” are the mostly effective. It also seems that ALMP are more likely to be successful when the unemployment rate is higher.

Forslund et al. (2011) verified that depending on the phase of the economic cycle (Cueto and Mato, 2006), different measures have different effects. They showed that in periods of recession, the greatest effects are provided by training programmes than other public measures. This same conclusion has been confirmed latter on by Vlandas (2011) and Cho and Honorati (2014).

In the same year, Tokila (2011) studied public support for entrepreneurship in Finland from 1988 up to 2004. For this author, the focus of public supporting measures or policies should be focused to business success instead of to the number of business entries. The main results consider the existence of the deadweight effect (at the project level, deadweight is recognised and defined as the degree to which projects would have been implemented even without public subsidies; thus, deadweight indicates wasted public spending. If a large deadweight effect is observed, then the measure or programme is not efficient). In addition the results show that start-up grants have a positive effect on the duration of self-employment. This deadweight effect decreases the positive effects on outcomes. Tokila (2011) argues that even if ALMP are well planned, deadweight spending is not fully inevitable because the public bodies that grant the subsidies, never has complete information about a firm's development in the absence of those subsidies.

A comprehensive study carried out by ECORYS and IZA in 2012 for the European Commission, and over the 28 member states of European Union, found many disparities among countries. Nevertheless the ALMP related with enterprise creations and self-employment are, in a European Union framework, a small spending class for a specific group, and the public expenditure has not been expanded much during the crisis. An explanation may be that throughout a crisis, unemployed are perhaps more hesitant to start a business. Moreover countries reforms in this particular ALMP for business creation have focused mainly on reducing administrative requirements. So, start-up incentives and self-employment measures seem to be more suitable when there are economy picks up, although then the risk of deadweight loss (Tokila, 2011) is bigger as well.

The study carried out by Román et al. (2013) established that if public expenditure is considered an ALMP (and start-up public incentives are intended to improve the chances of unemployed people moving back into labour market), they can be considered acceptable tools only in periods of moderate unemployment. In contrast, if such public funds or incentives are considered as an instrument to fight economic recession and high unemployment rates, their effectiveness is dubious at the very least. In other words, public expenditure planned to move the unemployed back into the labour market might be detrimental for employment rights and the social protection of workers as it favours the expansion of atypical forms of employment (that are outside the sphere of labour laws). Therefore, to avoid some unexpected (and undesired) effects, the interaction of diverse macro level institutional factors (i.e., labour market institutions and the business cycle) should be measured when defining the regulatory framework.

More recently Brown and Koettl (2015) take on a study assessing the cost-effectiveness of ALMP. They concluded that ALMP that are designed to create employment perform much better in terms of cost-effectiveness (mainly during economic recoveries), whereby the outsiders' attachment to the labour market is strengthened. Simultaneously, the outflow out of unemployment is supported and labour market persistence is reduced.

Escudero (2015) carried out an empirical analysis that involved an aggregate impact approach over a pooled cross country and time-series database from 31 advanced economies during the period 1985–2010. The main findings concluded that ALMP matter at the aggregate level. The most positive results were found in: public spending in training, employment incentives, supported employment and rehabilitation and direct job creation. In particular, public spending in start-up incentives or self-employment creation are effective but only in dropping the unemployment rate of both population groups and in improving the employment rate of the overall population.

2. Empirical Analysis

All political decisions should be grounded in evidence. To avoid changes in policies from one government to another and to overcome repeated political blunders with societal impacts (Fay, 1999) and costs, social policy initiatives should be assembled on evidence-based criteria (Haskins & Baron, 2011), provided by empirical studies.

However it should be acknowledged that when unemployment is high and demand for labour is low, high net impacts from ALMP should not be expected (O'Leary, 2001). Despite this statement the importance of carefully evaluating ALMP should be emphasized, so that public funds can be used efficiently while pursuing the social aim of returning the unemployed to the labour market (O'Leary, 2001).

As stated before this paper aims to provide some figures in order to add a small input to the evidence-based debate on ALMP policy in Portugal. To pursue this aim, the analysis used the data provided by the EUROSTAT Labour Force Survey (LFS) (2015) and the Instituto do Emprego e Formação Profissional (IEFP). The chosen data go from 2005 to 2013; there are no breaks in series and the data cover the crisis peak (2011-2013) in Portugal. In this text, as ALMP is the study object, the choice was made to look at Portuguese public measures that lead to self-employment (promoted by unemployed people) in two merged formats (i.e. self-employment creation measures and business start-up support). This is the dependent variable (Vlandas 2011). As this paper aims to analyse the use of public funds allocated to promote self-employment the public expenditure made by IEFP on this ALMP was set as the independent variable.

2.1. Evolution of Self-employment and Public Expenditure

The LFS (2015) provides some clear data about the evolution in the total number of self-employed people in Portugal, from 2005 to 2013. Table 1. shows the total of self-employed people in Portugal. Table 2. shows the total of public funds allocated to create new self-employment positions, and the number of new self-employment positions created with the public funds (through IEFP's measures).

At national level (from Table 1. and Graphic 1.) some distinct stages can be identified. From 2005 to 2008 the total number of self-employed Portuguese people remains more or less steady above 900,000, however with some tendency to decline. From 2008 to 2013 the absolute number drops to 700,000 people registered as self-employed, with a more marked decline from 2011 to 2013.

In the same period (2005-2013) Portuguese public expenditure on self-employment creation measures shows a different performance. Table 2. and Graphic 2. shows that from 2005 to 2007 the public funds allocated to self-employment creation measures remained more or less steady at €3.5 M annually. Then an intense decrease was registered from 2007 to 2009, followed by a huge growth in 2010, to more than €7 M. In the opposite direction, the years 2011 and 2012 registered a deep reduction, to slightly over €1 M, and remained at almost the same value in 2013. Despite the unexpected growth of public expenditure in 2010 and 2011, the number of self-employment positions created still decreased. This might indicate an ineffective use of public funds and/or an also unexpected rise in the effective cost per position created? The phenomenon can be checked in Graphic 3. This shows the evolution of the annual self-employed positions created through IEFM measures and the public expenditure used to achieve it. The evolution follows closely the total of self-employed Portuguese individuals, with the exception of 2009, where the number grows slightly, but in 2010 the decreasing trend returns.

With these figures, some questions arise. Is there any relation between public expenditure and self-employment positions created? Is the creation of self-employment positions due only to public expenditure? Why does an increase in public expenditure not lead to an equivalent growth in self-employment positions creation?

2.2. Data Analysis

There is a clear downward trend in the number of people that chose self-employment as a solution to fight against unemployment. This is a reality for the overall number of people in the country, but also for the unemployed who start their own employment or business.

Simultaneously, public expenditure in self-employment measures or programmes has been falling since 2010, and in 2013 it represents one third of the 2005 amount and one seventh when compared with 2010.

Considering there are two variables, the first analysis was made based on a scatterplot. The results in Graph 4. shows the dispersion of the values. The trend line displays a two period moving average: the first period a relative linearity and the second a non-linear trend. There are no outliers.

The descriptive statistics for both variables are displayed in Table 3. To check the normality, the Shapiro-Wilk Test was used. As can be seen, the p values for both variables (.531 and .146) of the Shapiro-Wilk Test ² are $> .05$, thus the alternative hypothesis (H_a) can be rejected and it can be concluded that the data come from a normal distribution (George & Mallery, 2010). The kurtosis values (-.807 and -1.813) for each of the variables also indicate a normal univariate but flatter (or platykurtic) distribution. ³

With those confirmations the Pearson product-moment correlation coefficient (Pearson's correlation) was used in order to assess the strength and direction of association that exists between the two variables measured, to determine to what extent the variables are correlated (Field, 2013).

Table 4. shows the results of the Pearson Correlation test. The value of r is .291. Although technically this is a positive correlation, but the uphill linear relationship between the two variables is weak (Field, 2013). In other words, there is a weak correlation between public expenditure and self-employment creation. The question whether the correlation is real (or statistically significant) was also assessed. Using a $\alpha = 0.05$ ⁴, and looking up to $p = .446$, it can be concluded that the correlation is not statistically significant (Corty, 2013). The effect size of the correlation is assessed by the coefficient of determinations

2 H_0 : The distribution of the data is normal and H_a : The distribution of the data is not normal

3 The values for asymmetry and kurtosis between -2 and +2 are considered acceptable in order to prove normal univariate distribution (George & Mallery, 2010).

4 Because is the value mostly used in social sciences (Corty, 2013).

(r^2) and is equal to .085. This means that only 8.5% of self-employment creation is explained by public expenditure (conversely, 91.5% of the variation in mean reading scores cannot be explained.) and therefore is most likely explain by other variables.

Conclusions

This paper started by revising the studies, research reports and literature available. The conclusions presented by several authors are not unanimous. There are mainly three sets of inferences. The first presents self-employment creation actions and programmes as activation measures that are helpful to overcome unemployment and to use public funds. The second gatherings the opposite, and shows this ALMP as inefficient, from several points of view, but mainly as a waste of public expenditure. The third set of conclusions is directed to the need to establish more irrefutable studies and to implement additional research.

In the light of these findings, this study starts by analysing the evolution of self-employment creation and the amount of public expenditure over the years.

The first conclusion states that there is a downward trend in the number of people that select self-employment as a response to unemployment. This is a reality for the overall number of people in the country, but also for unemployed people who start their own employment or business. Simultaneously, public expenditure on self-employment measure or programmes has been dropping since 2010 and in 2013 was one third of the 2005 amount and one seventh when compared with 2010.

The second conclusion addresses the apparent absence of, or weak, linear correlation between the two variables. This may possibly indicate an inefficiency of public funds usage, as argued by Heckman, Lalonde & Smith (1999) and Pfeiffer & Reize (2000). In other words, the statistical results may indicate that public funds are slightly responsible for the self-employment creation positions and perhaps

there are other variables that explain the phenomenon, such as, for instance, better economic performance (Shane, 2009). It is possible also that we are facing a deadweight effect (Tokila, 2011). Thus, it is also likely that the opportunity cost associate with public funds allocated to self-employment creation measures (with the format they are planned nowadays), would be better used, for instance, in job creation measures (Estevão, 2003) as well in counselling, subsidies for employment in the private sector or training (Martin and Grubb, 2001).

Furthermore the statistical results may show that these findings follow closely the conclusion of Román, Congregado & Millán (2013), which established that public incentives for self-employment can be considered acceptable tools only in periods of modest unemployment, which is not the case in the period studied (2005-2013), as it was in fact a period of resilient and raising unemployment rates.

Finally, more comprehensive studies and evaluations are needed to assess in depth if the use of public funds to promote self-employment is a major ALMP or should become a fringe or a residual measure.

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Table 1. Total Self Employed Individuals in Portugal (2005-2013)

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Self employed Individuals in Portugal (x 1000)	953	911,1	913	908,1	870,3	811,3	746,9	723,1	710,3

Source: EUROSTAT/Labour Force Survey

Table 2. Total Public Expenditure in IEFP's Self Employment Creation Measures and Self Employed Positions Created Through IEFP Measures (2005-2013)

2005	2006	2007	2008	2009	2010	2011	2012	2013	
3,64	3,76	3,64	3,15	2,54	7,07	5,17	1,29	1,14	Total Public Expenditure in IEFP's Self Employment Creation Measures (Million €)
8553	9846	9519	6472	8847	6670	3832	2886	2848	Self employed Positions Created trough IEFP Measures (Public Expenditure)

Source: EUROSTAT/Labour Force Survey and IEFP data

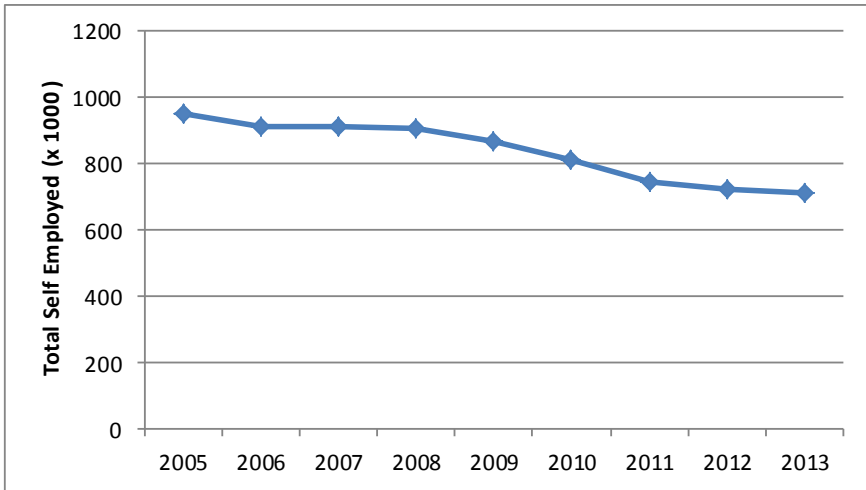
Table 3. Descriptive Statistics

	x = Public Expenditure	y = Self Employed _IEFP
Mean	3.488.889	6.608
Stand. Deviation	1.841.782	2.816.783
Variance	3.392.161.111	7.934.263.861
Kurtosis	-0.807	-1.813
Shapiro-Wilk statistic W	0.935	0.877
Shapiro-Wilk p-value	0.531	0.146
Critical value of W (5% sig.level):	0.829	0.829

Table 4. Pearson Product Moment Correlation

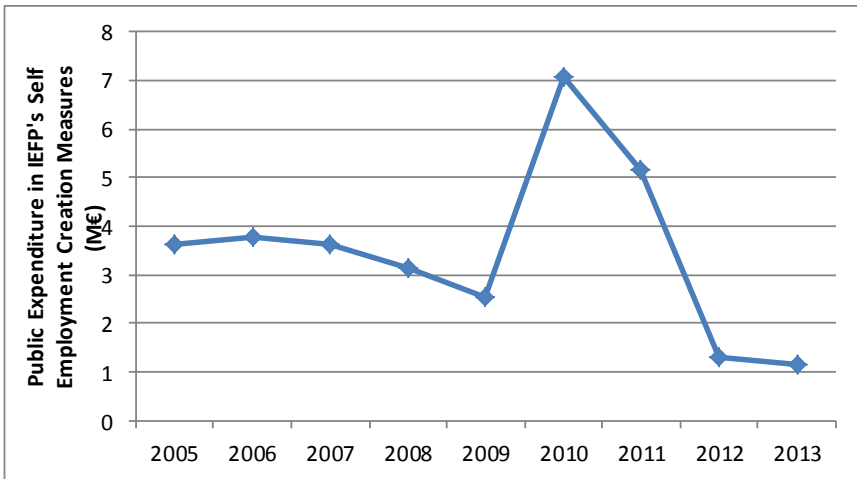
Pearson Product Moment Correlation - Ungrouped Data		
Statistic	Variable X = Public Expenditure	Variable Y = Self-employed
Mean	348.888.888.888.889	660.811.111.111.111
Biased Variance	3015254320987.65	705.267.898.765.432
Biased Standard Deviation	173.644.876.716.466	1265.568.804.411.481
Covariance	151.306.638.888.889	
Correlation R	0.291	
Determination R ²	0,09	
T-Test	10.806	
p-value (2 sided)	0.446	
p-value (1 sided)	0.22	
95% CI of Correlation	[-0.461, 0.800]	
Degrees of Freedom	17	
Number of Observations	19	

Graphic 1. Total Self Employed In Portugal (2005-2013)



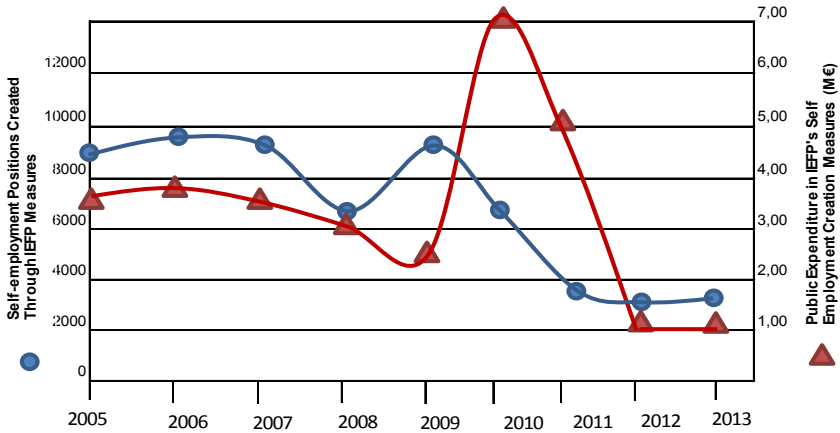
Source: Own calculations using EUROSTAT/Labour Force Survey data

Graphic 2. Total Public Expenditure in IEFP's Self Employment Creation Measures (2005-2013)



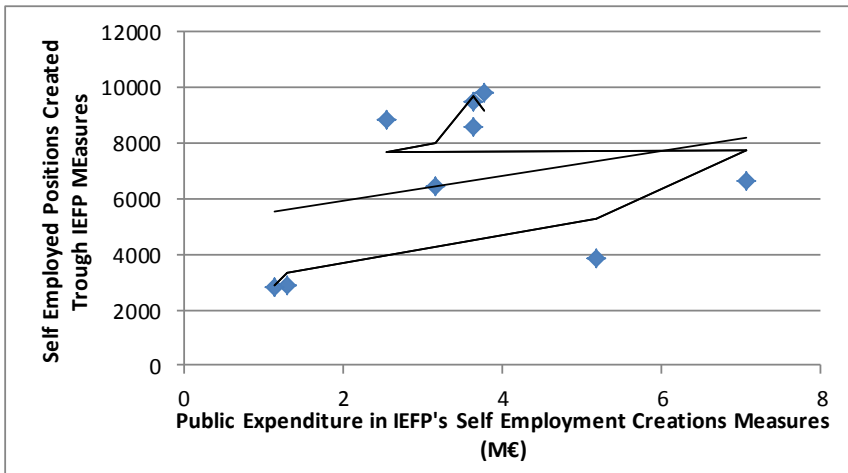
Source: Own calculations using EUROSTAT/Labour Force Survey data

Graphic 3. Total Public Expenditure in IEFP's Self Employment Creation Measures and Self Employed Positions Created Through IEFP Measures (2005-2013)



Source: Own calculations using EUROSTAT/Labour Force Survey and IEFP data

Graphic 4. Scatterplot - Total Public Expenditure in IEFP's Self Employment Creation Measures and Self Employed Positions Created Through IEFP Measures (2005-2013)



Source: Own calculations using EUROSTAT/Labour Force Survey and IEFP data