Answer to first Referee Report 2 dp 2015-21

First, let's start by thanking the referee for the comments. I think that the paper will benefit from addressing these comments and I hope to have the opportunity to submit a revision of the paper that takes into account the points made by the referee. In what follows, I rewrite what I interpret as the main referee's comments and try to provide a brief answer to them and to explain how a new version of the paper could deal with them.

1. In the view of the referee, the paper has some problems of originality. In particular, more effort should be devoted to show what is the paper's position in the existing literature, that is, what the paper adds to the literature. The referee asks whether the paper is an extension of García-Pérez and Osuna (2014).

The referee is right in the sense that this paper is an extension of García-Pérez and Osuna (2014). As it is stated in page 3, *"The objective of this paper is to use the job creation and destruction model ...proposed by García-Pérez and Osuna (2014) to study the effectiveness of subsidizing permanent job creation as a strategy to reduce duality".* So, what I do in this paper is to take that baseline model and modify it by introducing subsidies and penalties (for not complying with the obligations that subsidies involve) and, in that sense, it is an extension because the García-Pérez and Osuna (2014) model is modified in a minor way. I think that in the Abstract, in the Introduction, in the Model Section, and also in the Conclusion, it is clearly stated that the contribution is not the model per se, but the policy application, which consists in using Spain as a benchmark to compare the effects of subsidizing permanent job creation, both in the 2006 and the 2012 labour market reforms, with the effects of merely reducing the severance cost gap between permanent and temporary contracts.

In fact, I think that this model has the virtue of being quite flexible in the sense that many labour market policies, especially those related to the way firms adjust labour, can be accommodated within this structure by introducing minor modifications and those policy applications by themselves have interest because they teach us about how the economy responds to a particular policy. For instance, one could use this model to study the recent Italian labour market reform (the "Jobs Act"), which involves the provision of subsidies for permanent job creation together with a general reduction in severance costs and compare it with the 2012 Spanish labour market reform and/or with the severance costs structures that prevail in Angloxason economies like the UK.

As to the particular contributions this paper makes, they are stated in page 3:

- It compares the effects of the 2006 and the 2012 labour market reforms by quantifying the steady-state changes in unemployment and job destruction (aggregate and disaggregate).
- It shows the deadweight effects implied by the 2012 Enterpreneur's permanent contract (EPC).
- It discusses the effects of further reductions in severance costs provided dismissals for objective reasons become more prevalent.
- It shows the relevance of designing appropriate penalties for those firms that do not comply with the obligation that subsidies involve.
- It reveals the importance of training costs and differences in productivity between temporary and permanent workers for the effectiveness of policies involving subsidies for permanent job creation.

In addition, although, in this paper I do not perform a welfare analysis, the fact that the EPC generates substantial deadweight effects together with the fiscal costs implied by

the provision of these subsidies suggests that its introduction does not make much sense. Of course, in order to make a definite assessment one should perform the transition to compute the costs and benefits implied by these policies. Something that implies some work, but that it is feasible to do in the short run.

To my knowledge, there is no paper in the literature that makes these particular contributions, and that is why I think this paper deserves some place in the literature.

2. In the view of the referee, the model Section should be deleted because it is published in García-Pérez and Osuna (2014).

I am afraid I entirely disagree with the referee. The model is not exactly the same. As I said in the previous point the equations differ because of the subsidy and the penalties. It is true that they are very similar but, in order to understand the results, the reader needs to see the equations. I could try to simplify the model section by eliminating comments that are already in *García-Pérez and Osuna (2014)*, but I do not think it is a good idea to eliminate this section completely. It may be uncomfortable for the reader to have to look at the model in a different paper and, also, to somehow guess how the equations are modified when subsidies and penalties are introduced.

Related to this point, the referee that has written report 1, has made some very useful comments that will help clarify the presentation of the model equations. In my written answer to his report, I state that, thanks to his comment I realized that the way I have presented the subsidy in Equations (2) and (3) is confusing because only new permanent contracts should receive the permanent employment promotion subsidy. Strictly speaking, the subsidy should only appear in Equation (3) and the penalty should disappear from these equations. I did some abuse of notation in the Model Section because I wanted to use these equations also for the first years under the "Enterpreneur's permanent contract" (EPC) introduced in the 2012 reform, although, strictly speaking, these equations should be modified because the superscript should be a "p" (to indicate a permanent contract) and not a "t" (which indicates a temporary contract). That is why, in the text I wrote "only if the firm qualifies to", a sentence that was implicitly referring to the particular case of an Enterpreneur's permanent contract, but obviously this sentence did not clarify much.

To avoid this confusion, I will eliminate the subsidy from Equation (2) and also the penalty from Equations (2) and (3), and I will rewrite the appropriate equations in Section 3.3 when I explain the introduction of the "Enterpreneur's permanent contract", which involves a subsidy that is paid annually in the first three years of the contract and some penalties if the worker is dismissed before reaching a certain tenure. The equations for the first three periods will be very similar to Equation (2), except for the subsidy, the penalty, and the superscripts that should be "p" to indicate that this is a permanent contract instead of a "t", which stands for temporary contract.

This is the other reason why I think that the model should not be eliminated. Instead the differences in the equations of the two particular reforms should be clearly set up following the comment of referee 1.

3. The referee thinks that the Model should incorporate the "Out of the labour force" state because for the Spanish labour market it may be relevant, since the level of inactivity has decreased substantially from 2007 to 2014.

I think that an important part of the decrease in inactivity during the "Great Recession" in Spain may have to do with "the added worker effect" (see, for instance, Addabo et al., 2013). I do not think this is a suitable model to include these considerations. In

order to seriously analyze these issues we would need a demographic model, where the couple labour supply decisions could be analysed.

Having said that, I would like to remind that in this kind of search models, parameter "b" can be interpreted as the income flow of unemployment or the return to home production because, in fact, the "unemployment" state can be interpreted as a "non-employment" state. This discussion can be found I in the Calibration Section in García-Pérez and Osuna (2014).

In order to address the referee's concern about the importance of changes in inactivity, I could take a shortcut by performing a sensitivity analysis concerning parameter "b", instead of explicitly introducing an additional state in the model, which is out of the scope of this paper for the reason mentioned above. For instance, a lower value of this parameter could be interpreted as a higher opportunity cost of staying at home (because the value of home production would be relatively lower), so that more people would like to join the labour force.

4. The referee asks for more information regarding the dataset that is used in the paper. In particular, the referee would like to know why the number of spells and the number of workers that we used differ from the number he has for the same period.

It is true that the paper does not provide much information about the dataset. This is partly because it is the same dataset than in García-Pérez and Osuna (2014) and, in this paper, I have tried to simplify what had already been explained in that paper. The other reason for not providing too many details is because the emphasis of the paper is not in the database, but in the simulation exercises. In this paper I only use the dataset to compute some statistics, basically aggregate and disaggregate job destruction rates, to calibrate the model status quo.

Regarding the differences in the number of spells and the number of workers in the referee's dataset and ours, they are due to the particular filtering that has been undertaken. Our sample only has workers between 16 and 64 years old, and only for the standard regime ("régimen general"), that is, we exclude the self-employed and the especial regimes (like the "régimen agrario", etc...). For reasons explained in http://www.revecap.com/revista/numeros/e1/pdf/garcia.pdf, that have to do with the reliability of the data, we also exclude from our sample those who report a cero level of qualification (what is called "grupo de tarifa" in this dataset) and a level of qualification greater than 10. Finally, we apply all the filters that are explained in http://www.revecap.com/revista/numeros/e1/pdf/garcia.pdf eliminate to artificial unemployment spells. For instance, a worker who has two consecutive jobs in the same firm, but in a different location, or with a different assigned gualification, etc...All these filters reduce the original sample by 25-30% percent.

5. In the view of the referee there are many assumptions such us assuming that the expected duration of good and bad idiosyncratic shocks coincides, the matching technology, the unemployment benefits, the social security, the minimum wage.

I must recognize that I do not fully understand what the referee means. All these assumptions were present in García-Pérez and Osuna (2014), which is a paper that has been published in *Labour Economics*. In addition, very similar assumptions have been made by Mortensen and Pissarides (MP) in their collection of papers MP (1994, 1999a, 1999b). This is the case, for example, of the matching technology, which is

widely used in this literature, and the unemployment benefits. As it is explained in much more detailed in page 2 in García-Pérez and Osuna (2014), we extend the Mortensen Pissarides (1994) paper by introducing certain elements to capture the specific features of the Spanish labour market. In particular, we try to make a big effort to match institutional features that have to do with the costs that firms face, such us severance costs, social security and subsidies. We also try to provide a good measurement of unemployment benefits because they are crucial from the perspective of the worker. Finally, as explained in footnote 6 in García-Pérez and Osuna (2014) and in footnote 2 in the present Discussion Paper, we need to impose some downward wage rigidity so that severance costs have real effects. In order to accomplish that goal, we have used the average of the minimun wage set in collective agreements provided by Lacuesta (2012). Finally, regarding the assumption that the expected duration of good and bad idiosyncratic shocks coincide, I would share this concern if the shocks were aggregate shocks, because in that case there is some literature supporting the view that the expected duration of good and bad shocks does not coincide. For idiosyncratic shocks we did not find any reference providing that kind of evidence for Spain.

As I said, in order to fully understand the comment made by the referee, and be able to provide a good answer, I would need some guidance on behalf of the referee saying why these assumptions may not be desirable for the present paper.

6. In the view of the referee Table 1, 3 and 4 need more explanation.

Again, I would have appreciated more concreteness as to what are the aspects that seem unclear. For instance, I have devoted a Section (Section 3.2) explaining how all the parameters that appear in Table 1 are calibrated. And regarding Tables 3 and 4 I have gone through all the scenarios and I have explained how all the relevant statistics change and why in Section 4.

7. The referee thinks that the statement in the Conclusion "short-time work schemes, if properly subsidized further reduces unemployment and the degree of segmentation between TCs and PCs" should be taken with care because most STW involves permanent employment.

I am afraid I entirely disagree. As I mention in the Conclusion, I have another paper coauthored with J.I. García-Pérez (see García-Pérez and Osuna, 2015), where we use this baseline framework and introduced the possibility of adjusting hours and wages in order to analyze the effects of STW schemes on unemployment and on the degree of segmentation between TCs and PCs. In that paper we have three different specifications for the STW policy. While under the first one (reform B in that paper), which is a STW policy that is not subsidized, there is no significant effect. For the other two specifications (reform C and D), where STW is partly subsidized, we do find significant reductions in the temporary job destruction rate, which is an indicator of a lower degree of segmentation. For instance, under Reform C, the temporary job destruction rate decreases by 54% (see Table 5 in that paper) because the STW mechanism (STW) provides flexibility to accommodate present shocks and expected future shocks, and these makes firms more prone to continue with the matches albeit at a reduced number of hours worked in some instances. With regard to the effects on job destruction rates in the early durations, JDd=2, JDd=3 and JDd=4 decrease dramatically to 6.6%, 14.5% and 5.2% under Reform D. Consequently, the tenure distribution changes drastically, becoming much smoother (see Figure 4 in that paper). The proportion of workers with one year of tenure decreases from 20.4% to 13.4%, and

the proportion of workers with more than three years of tenure increases from 52.7% to 63.5%. So, we do find that the availability of STW reduces labour market segmentation by providing an additional flexibility mechanism that firms will be able to use in the future. This makes firms more prone to continue operating with the matches by endogeneously reducing the thresholds for match destruction. That is, firms require lower productivity values to continue operating with the matches if they have this additional adjustment mechanism at their disposal.

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