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NO CONSENSUS IN THE IMF-OECD 'CONSENSUS': A META-ANALYSIS ON THE EMPLOYMENT IMPACT OF LABOUR DEREGULATIONS

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Abstract

The so-called 'IMF-OECD consensus' suggests that labour market deregulations increase employment and reduce unemployment. We present a first meta-analysis on the subject based on MAER-NET guidelines. We examine the relation between Employment Protection Legislation indexes on one hand and employment and unemployment on the other. Among 53 academic papers published between 1990 and 2019 and contained in the Web of Science, only 28% supports the 'consensus' while the remaining 72% report results that are controversial (21%) or contrary to the 'consensus' (51%). The decline in 'consensus' is particularly evident in the last decade. Results are independent of the citations of the papers examined, the impact factor of the journals and the techniques used. A FAT-PET meta-regression model confirms these outcomes.

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No Consensus in the IMF-OECD 'Consensus': A Meta-Analysis on the Employment Impact of Labour Deregulations

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1. Introduction

The idea that strict employment protection legislation determines inefficiencies which increase unemployment and damage economic growth has dominated the international political debate for over thirty years and seems to be still prevalent among policymakers. The proposed policy solution usually consists in labour market deregulations which should stimulate the growth of employment, production and incomes (see Giersch 1985; Donges 1985; Davis and Minford 1986; Gavin 1986; Lazear 1988; Emerson 1988; Siebert 1997; Howell et al. 2007; Berg 2015). This prevailing view has been defined 'OECD-IMF orthodoxy' or 'consensus' (Howell 2005), 'Transatlantic Consensus' or 'Berlin-Washington Consensus' (Fitoussi and Saraceno 2013). After the Great Recession, there has been an even stronger political support in favour of this 'consensus' (Avdagic 2013; Adascalitei and Pignatti Morano 2016), especially in the European Union (Escande Varniol et al. 2012).

Quantitative evidence of labour market reforms can be drawn from the Employment Protection Legislation indices (EPL, hereafter), the best known of which is the EPL index calculated by the OECD. This EPL indicator measures the rules, procedures, and costs governing hiring and firing workers. The EPL is described along 21 basic items that contribute to determining three sub-indicators. The first sub-indicator incorporates three main aspects of protection from individual dismissal: the procedural commitments that employers face at the start of the dismissal process, such as notification and communication; severance pay; the circumstances under which dismissal is legitimate. The second sub-indicator refers to the regulation of temporary employment and includes rules regarding the types of work for which such contracts are allowed, the number of possible renewals and the maximum cumulative duration. The third sub-indicator is related to the specific requirements for collective dismissals and includes all additional costs that go beyond those applicable for individual dismissal. The combination of these sub-indicators gives rise to the EPL index, a measure that summarizes at the country level the degree of rigidity of labour legislation and procedures in a scalar range between 0 (maximum flexibility) and 6 (maximum strictness).

There are several versions of the OECD EPL index, which examine temporary or regular contracts, individual or collective dismissals, the overall protection legislation. Here we focus on the EPL "overall" index (for a comprehensive description see Venn 2009). The OECD reports historical series of EPL for 26 countries. Between 1990 and 2013, 62 negative and 22 positive changes in EPL occurred in the OECD countries examined. The average of the EPL index decreased by 20,7 percent and the variance decreased by 59,4 percent. The decrease of the EPL was even more pronounced in Europe. Within the first 11 countries of the Euro Area – except for Luxembourg because of lack of data – there were 40 negative and 11 positive changes of EPL between 1990 and 2013, with a reduction of the average EPL index of 25 percent and a decrease of its variance of almost 75 percent. Similar EPL indicators provided by scholars or other institutions give analogous results.

The tendency to deregulate labour markets is marked and widespread, with a clear downward convergence of protections in the various countries. Then a crucial question arises: have labour markets benefited from such a fall in EPL indicators? Has higher flexibility promoted employment? The prevailing academic literature on the subject seems to provide changing results over time.

The main literature developed during the 90s was in line with the 'IMF-OECD consensus': it stated that stringent employment protection laws are harmful to the labour market performance and suggested more flexibility (see Lazear 1990; Scarpetta 1996; Addison and Grosso 1996; Elmeskov et al. 1998; Blanchard and Wolfers 2000 among others). However, the findings of these first-generation analyses have been subsequently toned down (OECD 2004; Bassanini and Duval 2006) and challenged by subsequent works (Belot and van Ours 2004; Nickell et al. 2005; Baker et al. 2005; Amable et al. 2011; Avdagic and Salardi 2013; Brancaccio et al. 2018, among many others). Several doubts on the actual impact of EPL on both employment and unemployment emerged in the academic community (Bassanini and Duval 2009), which have even led to question the case for structural labour market reforms (e.g. Glyn et al. 2006; Baccaro and Rei 2007; Howell et al. 2007). This shift in perspectives is also documented in recent statements of those institutions which have typically supported labour deregulation policies. The OECD (2016), the IMF (2016), and the World Bank (2013) have acknowledged that the empirical evidence available does not confirm that higher flexibility improves labour market performance. A similar change of view is detectable in the works of several leading members of the academic community. The IMF's former chief economist Olivier Blanchard in 2000 argued that "higher employment protection leads to a larger effect of shocks on unemployment" (Blanchard and Wolfers 2000). However, six years later he stated: "differences in employment protection seem largely unrelated to differences in unemployment rates across countries" (Blanchard 2006). The Nobel prize James J. Heckman in 2000 stated that job security reduces employment and promotes inequality (Heckman and Pages 2000). Though, a few years later he admitted that "the evidence currently in play in this literature is weak" (Heckman 2007).

All these remarks raise a question: are we today witnessing some cracks in the old 'consensus' on the effectiveness of labour market deregulations? The only way to answer this question is to carry out a systematic review of the empirical research dedicated to the relationships between EPL and labour market outcomes. Some attempts have already been made on this subject (Howell et al. 2007; Boeri and van Ours 2008; Djankov and Ramalho 2009; Skedinger 2010; Kemper 2016). To our knowledge, however, there exist no studies published on referred journals which provide rigorous meta-analyses on the impact of EPL on labour market performance and which among other things follow internationally recognized criteria such as the MAER-NET guidelines. The present paper aims to fill this gap in the literature. We propose here the first meta-analysis on 53 papers selected from the Web of Science based on the MAER-NET guidelines. In support of the results of our meta-analysis,

we also present a FAT-PET meta-regression model (Funnel Asymmetry Test and Precision Effect Test).

The remainder of the paper is organized as follows. In section 2 we provide a short review in order to show the lack of meta-analyses on the subject. In Section 3 we describe the meta-analysis. In section 4 a meta-regression confirms the results of the meta-analysis. Section 5 shows the debate concerning the role of EPL in the analyses of international institutions. Section 6 concludes. The Appendix reports all the papers examined in the meta-analysis and the meta-regression.

2. The literature on EPL and macroeconomic performance: a lack of meta-analyses

Among the main reviews dedicated to the relations between labour protections and employment outcomes, Howell et al. (2007) provide a summary of the implied effects of changes in eight typical labour market institutions measures. This work is based on eleven panel data regression studies published from 1996 to 2006. As regards the relationship between employment protection legislation and unemployment, it comes out that eight studies out of eleven show a not statistically significant coefficient. Similarly, Boeri and van Ours (2008) review fourteen cross-country studies on the effects of employment protection on employment and unemployment stocks and flows and show inconclusive results. In particular, eight researches carried out on job flows indicate that higher flexibility reduces unemployment flows; however, three of these studies indicate also that the impact of employment protection legislation on employment flows is ambiguous, and other two reveal a negative sign between the two variables. Further, switching to the analysis on employment and unemployment stocks, Boeri and van Ours analyse thirteen studies and show that nine of them display insignificant coefficients, three argue that the more the labour market is rigid the higher is unemployment and the lower is employment, and finally one work suggests that flexibility brings about higher unemployment. Djankov and Ramalho (2009) survey the studies on labour regulations in developing countries by using thirty papers published in refereed journals or books from 2004 to 2009. These studies find benefits in introducing labour deregulation with the exception of Latin America where findings are mixed. To our knowledge, Skedinger (2010) provides the widest survey on the implications of employment protection legislation on many micro and macro variables such as labour market performance, productivity, economic growth, expenditure on IT, self-employment, wages, foreign direct investment, etc. In his book, the author reviews twenty-six cross-country and six within-country studies on the relationship between employment protection laws and overall employment and unemployment. The empirical results of this literature are inconclusive. Among the cross-country analyses, nine researches reveal a negative impact of employment protection laws on labour market outcome, twelve studies indicate a not significant or a positive relationship, and five show mixed results. The within-country studies point out a similar indeterminacy: three works indicate that stringent employment protection legislation worsens labour market performance while three studies suggest a not significant or even a positive relationship between employment protection laws and labour market outcome.

It must be said that all these surveys, although detailed, are non-systematic narrative reviews of the literature. The studies examined were selected without following specific and strict guidelines and the comparison between different researches and results could be misleading (Stanley et al. 2013). In order to solve these drawbacks it is necessary to implement a rigorous meta-analysis, i.e. a research methodology that is used to bring together in a systematic way all the findings from previous studies undertaken by different researchers

on a given issue. Kemper (2016) tries to follow this method by proposing a meta-analysis on the effects of EPL on unemployment and employment levels. Drawing on evidence from 72 studies the author finds that EPL has no statistically significant effect on the unemployment level, whereas based on 42 studies, she finds that EPL decreases the employment level. This works represents the only meta-analysis on the subject but it does not refer to MAER-NET guidelines or similar selection criteria (see Stanley et al. 2013). Therefore, the paper selection is in a way arbitrary and the meta-analysis is hardly reproducible or upgradable. Further, in her meta-analysis Kemper (2016) puts together published papers, working papers, and even a PhD dissertation.

This work follows a different approach. We propose a first meta-analysis on the impact of EPL on labour market performance which among other things refers to the MAER-NET guidelines and is based only on papers published in peer review journals and reported in the Web of Science.

3. A meta-analysis on EPL, employment and unemployment

In what follows we propose a meta-analysis on the relationships between employment protection indexes on one hand and employment and unemployment levels or rates on the other. The research selection process is based on the MAER-NET guidelines (see Stanley et al. 2013).

We made our initial selection of studies through a comprehensive search in the *Web of Science* database using combinations of the following very general and not specific keywords: 'employment protection', 'institutions' and 'job security'. We then refined our sample by selecting the fields 'Economics', 'Sociology', 'Industrial Relation Labor' and 'Political Science', and we considered only the articles published in refereed journals for the entire available period 1990-2019. At the time of writing, the outcome of this search is 5235 articles of which 2673 published on economics journals, 1052 on sociological journals, 1026 on industrial relation labour journals, and 484 on political science journals. Among these, we excluded non-international journals.

Then, we further refined the sample selecting only empirical papers that explore the relationships between employment protection legislation indexes on one hand and macroeconomic measures of employment or unemployment on the other. Therefore, we excluded from our selection all the theoretical works, all the empirical analyses based on disaggregated data, all the empirical analyses on the micro implications of employment protection legislation, and even the analyses which aggregate in a single indicator employment protections with other labour institutions. This means that the papers selected for the meta-analysis include only macro-level studies on employment and unemployment based on overall EPL measures. Thus, they do not explore the findings of the literature on the impact of labour regulation on the employment dynamics of specific groups - i.e. male or female workers; young or old workers; skilled or unskilled and so on - or specific sectors or other possible dependent variables such as GDP growth or productivity.

We did not distinguish between cross-country or within-country studies. We included papers that employ the OECD EPL as the explanatory variable as well as other employment protection measures, such as the one provided by the ILO, the CBR-LRI (Adams et al. 2016) and so on. We considered the studies which investigate the impact of labour regulation on both short and long term labour market performance. The search finished in August 2019. As a final result, this procedure led us to select 53 papers out of the total available articles: all the selected papers are reported in the Appendix. This result does not change if we modify the keywords used for the selection of the papers.

The first step of our meta-analysis consisted in classifying the collected articles according to their research outcome. To this purpose, we adopted the following strict definition of 'IMF-OECD consensus': labour deregulations aimed to reduce employment protection legislation indexes improve the efficiency of labour market and then contribute to the increase of employment and the reduction of unemployment rates (this definition is in line with Howell 2005 and Fitoussi and Saraceno 2013). We initially opted to review the material by a vote count review. Light and Smith (1971) were among the first to propose a vote count procedure for calculating study results by giving each study one of three outcomes based on statistically significant results: positive, negative, or no relationship. Similarly, on the basis of the 'IMF-OECD consensus' definition, we identified three types of contributions: 1) the empirical works in which higher employment protection is found to have a negative impact on employment or a positive impact on unemployment are assigned to the category of papers that support the 'consensus'; 2) the articles where higher employment protection legislation is found to have either a positive impact on employment or a negative impact on unemployment or a not statistically significant impact on employment and unemployment fall in the group of studies which do not support the 'consensus'; 3) finally, the papers in which the employment protection is found to have contradictory effects on employment and unemployment rates, the papers providing not robust evidence of the employment protection effects on labour market outcomes and the papers providing no conclusive evidence when dealing with short vs long-run effects of employment protection are assigned to the category of works providing mixed or controversial results. This categorization is based on what is reported as a conclusion by the authors in the examined articles, which always rely on the conventional statistical significance thresholds and are always based on a statistical significance of less than 10%. A more analytical way to deal with the statistical significance of the estimated effects will be adopted in the meta-regression analysis presented in Section 4.

The results of the meta-analysis are the following: 15 articles supporting the consensus, 27 articles not supporting the consensus and 11 articles with mixed or controversial evidence. This means that *only 28% of the selected articles provides evidence supporting labour flexibility reforms while 72% of the papers report results which are either against (51%) or unable (21%) to bear the so-called 'consensus'*. These percentages do not change if we add some specifications in the selection of the studies, for example by removing the only 3 papers dedicated to flow measures of employment or unemployment or distinguishing "short" and "long period" measures of employment and unemployment, and so on. The mere counting of the articles belonging to each group seems to suggest that *there is no academic consensus around the 'IMF-OECD consensus'*.

As a second step of our meta-analysis, we investigated the existence of a possible correlation between the research outcomes and the following three measures: the number of citations, the year of publication and the impact factor of the journal where the paper is published.[2] Table 1 reports some descriptive statistics across our three groups of papers: those supporting the 'consensus', those non-supporting the 'consensus' and those providing mixed or controversial results. The average number of citations is equal for the first two categories (70.4 for the articles bearing the 'consensus' and 70.3 for the articles not bearing the 'consensus'). Standard deviation as well is similar across the first two groups (131 and 139, respectively). We also reported median, minimum and maximum to have a better picture of the distribution of citations number across our three classes. At first glance, we notice that sample mean, standard deviation, median and extreme values are quite similar across the subsamples of articles supporting the 'consensus' and articles not supporting the 'consensus',

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[2] The choice to carry out a check on the impact factor does not mean that we share the prevailing practice of evaluating publications on the basis of strict bibliometric criteria or journal rankings (on this point see Brancaccio and Garbellini 2018).

meaning that the two groups appear homogeneous with respect to the total number of citations. The same seems to hold for the other variable we are interested in, the journal impact factor. The average impact factor is quite similar across the two groups (2.49 for the group of articles bearing the 'consensus', 2.14 for the group of articles not supporting the 'consensus') and the same applies also for standard deviation and the other descriptive statistics, suggesting that these groups differ only marginally in terms of impact factor of the journals where the articles are published. Results are slightly different with respect to the third group of mixed or controversial articles, which shows a smaller average number of citations (25.7) and a smaller average impact factor (1.52), among other things. We could be tempted to conjecture that articles providing mixed or controversial evidence may comprehensibly be less easily published and cited, for instance, than the ones delivering more clear-cut results. However, we cannot infer too much on these statistics since this group counts only 11 observations and this implies more uncertainty due to sampling variability.

	Articles supporting the 'consensus'	*Articles not supporting the 'consensus'*	*Articles with mixed / controversial evidence*
	Citations number		
Obs	15	27	11
Mean	70.4	70.3	25.7
Std. Dev.	130.67	139.15	47.36
Median	18	20	8
Min	3	0	1
Max	415	624	160
	Journal impact factor		
Obs	15	27	11
Mean	2.49	2.14	1.52
Std. Dev.	2.78	1.35	1.23
Median	1.7	1.71	0.97
Min	0.45	0.74	0.43
Max	11.78	6.54	4.1

Table 1: Citations and impact factor in the meta-analysis: descriptive statistics

Next, we calculated pairwise correlation coefficients to evaluate the existence of a possible relationship between the research outcome and the same variables of interest, that is: citations number, journal impact factor and year of publication. For this scope we created a dummy variable for each of the three groups of articles examined. In Table 2, Column 1, 2 and 3 report the results for the dummy taking value 1 for articles supporting the 'consensus', not supporting the 'consensus' and providing mixed evidence, respectively. Each entry of the table is a correlation coefficient that expresses how being in one of the three categories is related to the variables of interest. Here the correlation coefficients and the associated p-values:

	Articles supporting the 'consensus'	Articles not supporting the 'consensus'	Articles with mixed / controversial evidence
Citations	0.0482 (0.7317)	0.0773 (0.5820)	-0.1489 (0.2873)
Impact factor	0.1297 (0.3548)	0.0179 (0.8986)	-0.1661 (0.2345)
Year of publication	**-0.2759** (0.0455)	0.1028 (0.4638)	0.1797 (0.1979)

Table 2: Pairwise correlation coefficients between articles research outcomes on one hand and citations, impact factor and year of publication on the other hand (significance level in brackets; significant coefficient in bold).
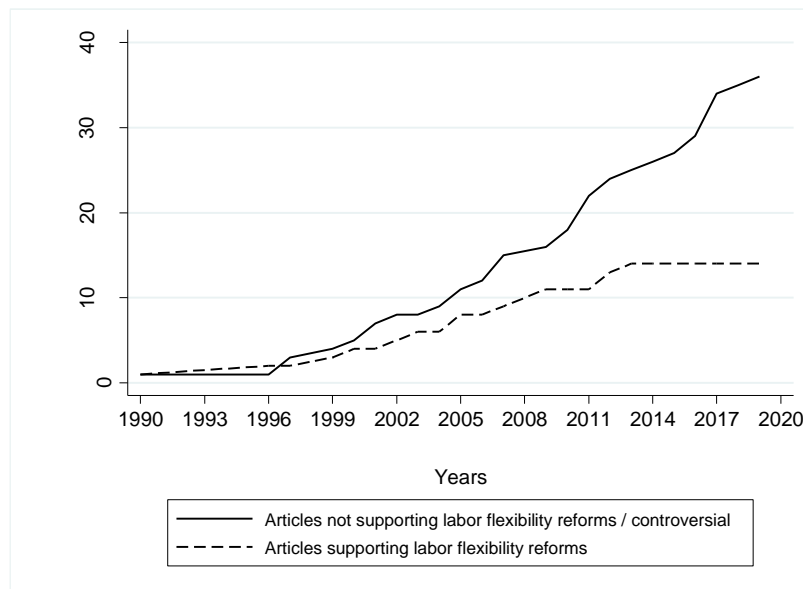

Figure 1: A decline of the 'consensus'
(year of publication and meta-analysis results, cumulative frequency curves)

As we can see, the only statistically significant relationship is the one with the year of publication for articles supporting the 'consensus'. This group seems to have a negative trend over time meaning that, as time goes by, we find a decreasing number of papers which provide evidence in favour of labour deregulations. Interestingly, we do not find significant correlation with the year of publication for the other two groups. To have a better understanding of the relationship between time and the research outcomes of the collected articles, we can plot the cumulative frequency of the groups of papers examined.

In Figure 1, the dotted line shows at any point in time the cumulative frequency of papers which provide evidence supporting the 'consensus' on labour deregulations. As an example, the value assumed by the dotted line in 2008 is 11: this means that the published articles supporting the 'consensus' are 11 in our sample until 2008. Conversely, the solid line represents the curve of cumulative frequency of papers that do not support the 'consensus' or provide mixed/contradictory results. It is easy to see that as time goes by the dotted line becomes progressively flatter while the solid line goes on growing, meaning that in the second half of our sample the empirical evidence supporting labour deregulations decreases

while empirical evidence against them raises. The historical decline of the 'consensus' seems to be quite evident.

	1990-1999	2000-2009	2010-2019	Total
Articles supporting the 'consensus'	43% (3)	41% (9)	12% (3)	**28%** (15)
Articles not supporting the 'consensus' or controversial	57% (4)	59% (13)	88% (21)	**72%** (38)
Among wich: - not supporting	57% (4)	41% (9)	58% (14)	51% (27)
-mixed/ controversial evidence	0% (0)	18% (4)	29% (7)	21% (11)

Table 3: Meta-analysis outcomes over time
(number of articles in brackets)

Table 3 divides the period examined in three decades and provides further evidence of the change of view about the impact of labour deregulations on employment and unemployment performances. It is interesting to note that the most relevant decline of papers supporting the consensus is concentrated in the third period: while in the first two decades the percentage of papers which support the 'consensus' is slightly declining but always above 40%, in the last ten years it falls to 12%.

4. A FAT-PET meta-regression model

In the previous section we proposed a meta-analysis based on a vote-counting approach in order to provide some descriptive statistics about the collected data sample. The three classifications were based on what is reported as a conclusion by the authors in the examined articles. While this method does not adopt any t-stat or p-value thresholds, it allows to exploit the better knowledge the authors have of the research conducted with regard to the multiplicity of estimates relying on different estimation methods, datasets and identification strategies. This vote-counting approach has been criticized because it does not take into account the sample size, which affects statistical power, nor does it give an estimate for the size of the effect (Hedges and Olkin 1980). It must be clarified, however, that all the selected papers in our meta-analysis rely on the conventional statistical significance thresholds and are always based on a statistical significance of less than 10%. Furthermore, we have noticed that even selecting only papers that consider the most conservative p-value threshold of 1%, the huge gap between articles supporting the 'consensus' and all the others persists.

In any case, a more analytical way to deal with the statistical significance of the estimated effects will be adopted in this section. Here we select a sub-sample of papers which allow us to investigate the effects of employment protection legislation on labour market outcomes via statistical inference. In this way, we shall provide a meta-regression analysis of the relation between EPL and employment rates.

The first concern in a meta-regression framework is the possible bias arising from the preference of journals' boards to publish statistically significant or theory-adherent results. We will address this issue through the FAT-PET ("Funnel Asymmetry Test" and "Precision

Effect Test") model. This model has been designed by Stanley (2005) and relies on the assumption that in absence of publication bias, the outcomes of the literature should determine a symmetric funnel around the most precise estimates. Therefore, no correlation between estimates' precision and the size of the effect should be found. In our analysis, the EPL indicators used in the collected articles are not homogeneous and can have different scales, which makes the effect size not directly comparable: this is why we will use t-statistics[3] as the outcome variable rather than regression coefficients. It should also be stressed that not all the 53 studies examined in the meta-analysis provide the t-statistics. Consequently, the total number of paper that have been included in the meta-regression is 32, of which 11 are entered in the meta-regression on employment and 24 in the meta-regression on unemployment (see the Appendix for the complete lists of papers).

The estimated model is the following:

$$t_{ij} = \beta_0 \left(1/SE_{ij}\right) + \beta_1 + \varepsilon_{ij} \tag{1}$$

where t_{ij} is the t-statistics attached to the EPL estimated coefficient of regression i in study j, SE_{ij} its standard error and εij the idiosyncratic term. The FAT tests the hypothesis of no publication bias, that is $H_0: \beta_1 = 0$. Rejection of the null hypothesis implies evidence for a publication selection bias. The PET tests, instead, the null $H_0: \beta_0 = 0$, that is no significant effect of EPL on employment. Rejection of the null, in absence of selection bias, implies a non-zero statistical effect of EPL on the variable of interest[4]. A battery of moderator variables can also be included in order to account for study characteristics. Therefore, the FAT-PET multiple meta-regression model will be the following:

$$t_{ij} = \beta_0 \frac{1}{SE_{ij}} + \beta_1 + \sum_{k=1}^{K} \beta_{ijk} \frac{Z_{ijk}}{SE_{ijk}} + \varepsilon_{ij} \tag{2}$$

The term Z_{ijk} is the vector of k moderator variables. In our case it includes variables commonly used in the literature to control for study's quality (impact factor of the journal on which the article is published, number of citations of the article) and variables that control for study's features (a dummy assuming value 1 for the fixed effect regressions, a dummy taking 1 if the estimation accounts for endogeneity via IV or GMM models, observations number and a dummy assuming 1 if the EPL index used in the study is the one provided by OECD). Stanley and Doucouliagos (2015) recommend using Weighted Least Squares (WLS) for meta-analysis as they outperform Ordinary Least Square (OLS), Fixed Effects and Random Effects estimators in presence of selection (or small sample) bias and between-study heterogeneity. In choosing the weights we stick to the literature and we use $1/SE_{ij}^2$.

Table 4 reports both OLS and WLS estimates of the simple and multiple FAT-PET meta-regressions. The first two columns display the results of the simple FAT-PET regression (equation 1). Primarily, we want to check the FAT hypothesis of publication selection bias, i.e. we want to see if the constant term is statistically different from zero. As shown in Table 4, the intercept is not statistically significant for both the OLS and WLS estimations, meaning that there is no evidence of publication bias. Given the absence of bias, we can interpret the slope represented by the estimated coefficient of $1/SE_{ij}$ as the average effect of EPL on

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[3] We will not adjust t-statistics for the degrees of freedom - like in Kemper (2016), for instance - being our sample essentially made up of studies which analyse longitudinal data and use a relatively high number of observations (so that the degrees of freedom of the single regression are not of a concern).

[4] In case of a statistically significant publication bias ($\beta_1 \neq 0$), the FAT-PET-PEESE model must be estimated (see Stanley and Doucouliagos, 2012). As we shall see, this is not our case. Then, we do not discuss FAT-PET-PEESE model any further.

employment. However this effect is null in the investigated sample, which implies that we are not able to reject the PET hypothesis. Analogous results are obtained from the estimation of multiple FAT-PET metaregressions (equation 2) reported in column 3 and 4: both the FAT and the PET hypothesis cannot be rejected, implying that there is no evidence of publication bias and an overall zero effect of EPL on employment. Looking at the WLS estimations in the fourth column, we find out a statistically significant effect of the article's identification strategy. In particular, papers that account for cross country heterogeneity tend to find higher and more positive t-statistics for the effect of EPL on employment. Put in another way, fixed effects models find results that tend to depart from predictions of the 'consensus'. Analogous outcomes are obtained for the unemployment rate. The results are robust to both short and long-term definitions of the employment and unemployment rates.[5]

As a further exercise, one might be interested in evaluating the time trend of the average t-statistics and checking whether it is consistent with the results from the descriptive meta-analysis and the meta-regression. Figure 2 reports time trends of average t-statistics for the relation between EPL and employment rate (left graph) and the relation between EPL and unemployment rate (right graph). Although the graphs only show cross-sectional averages over time, we can draw useful information from them. In both graphs, horizontal bands represent the +/- 2 interval commonly used as a rule of thumb for statistical significance in t-tests (the implied confidence interval is at 5% while the distribution degrees of freedom are 5).

What is noticeable is that the average t-ratio mostly lie inside the +/- 2 intervals, implying an overall non statistically significant effect of EPL on employment and unemployment. This result further supports the outcomes from the meta-analysis and meta-regression. Finally, an increasing average t-ratio is detectable in the graph on the relationship between EPL and employment, while a progressively decreasing average t-ratio is found in the graph on the relationship between EPL and unemployment. These pieces of evidence are consistent with Figure 1 and with the results from meta-analysis, which show a decreasing support for the 'consensus'.

5. Inside the meta-analysis: some contrasts between empirical results and authors' view

Beyond the numerical results there are also other interesting aspects in this meta-analysis. It should be noticed, for example, that most of the papers that fail to provide support for the 'consensus' were written by authors known to be strong defenders of labour market reforms. One of the most glaring examples is given by Stephen Nickell who co-authored, together with Tito Boeri and Richard Layard, the famous manifesto "Welfare-to-work and the fight against long-term unemployment". In line with the 'IMF-OECD consensus', that document was meant to promote and defend labour flexibility reforms and had been presented jointly by the British and Italian Prime Ministers Tony Blair and Massimo D´Alema at the Council of European Prime Ministers in 2000 (Boeri, Layard, Nickell 2000). Curiously, Nickell was also author of two papers included in the meta-analysis which do not provide support to this 'consensus' view: a seminal paper published few years before where, instead, he admitted that "Labour market rigidities – such as strict employment protection legislation – do not appear to have serious implications for average levels of unemployment […]" (Nickell 1997); and a subsequent paper that fails to demonstrate the desirability of such reforms once more (Nickell et al. 2005)[6].

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[5] Results available upon request.
[6] Nickell (1997) and Nickell et al. (2005) present different features. The first study is based on the EPL index provided by OECD, uses a quite small sample of about 40 observations over the period 1983-1994 and provides

FAT-PET

	OLS	WLS	OLS	WLS
1/SE	-0.001	0.000	-0.006	-0.031
	(0.000)	(0.000)	(0.041)	(0.072)
Publication selection				
Constant	-0.400	-2.372	0.419	-3.107
	(0.992)	(1.317)	(1.727)	(3.347)
Study quality				
Journal impact factor			-0.018	0.043
			(0.051)	(0.087)
Total citations			0.000	-0.001
			(0.001)	(0.001)
FE estimation			-0.000	0.000***
			(0.001)	(0.000)
Study characteristics				
IV/GMM estimation			-0.001	0.001
			(0.001)	(0.001)
Sample size			0.000	0.000
			(0.000)	(0.000)
OECD EPL index			0.000	0.007
			(0.010)	(0.015)
# regressions	65	65	65	65
# studies	11	11	11	11
R-squared	0.018	0.063	0.117	0.275

Table 4: FAT-PET model estimation (*** p<0.01, ** p<0.05, * p<0.1).
Clustered standard errors (at study level) in parenthesis.
Ordinary Least Squares (OLS) and Weighted Least Squares (WLS, using $1/SE_{ij}^2$ as weight) estimations.
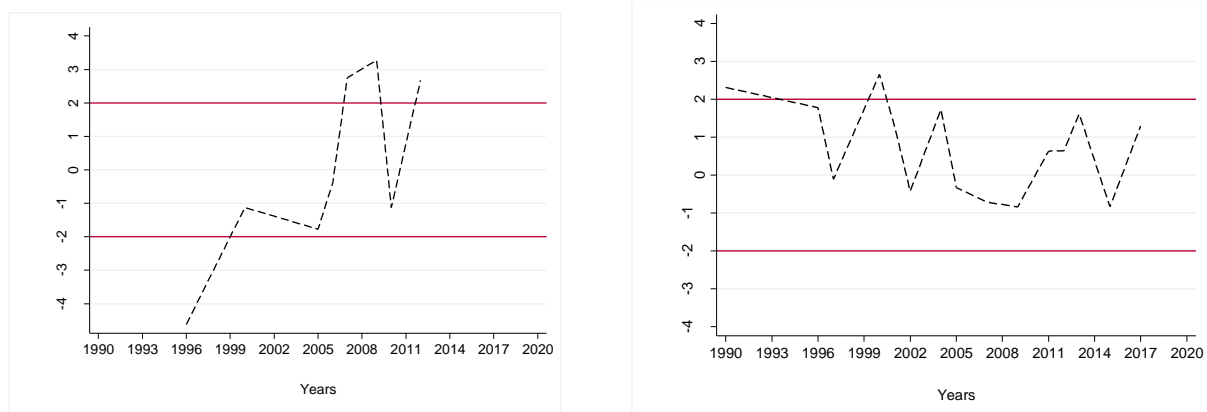

Figure 2: Average t-ratio of the relation between EPL and employment and unemployment rates.

GLS Random Effects estimates of the selected sample. The second study, instead, is based on an interpolation of the Blanchard and Wolfer employment protection index and provides GLS Fixed Effects estimates of a quite large sample of about 600 observations over the period 1961-1995.

Another interesting case is related to the criticism raised to the pioneering contribution of Lazear (1990), a milestone in the literature *pro* labour market flexibility. Newsworthy, that paper has been radically put into question by influential authors who strongly advocate labour market reforms. Precisely, Addison et al. (2000) state that Lazear's "findings are shown not to survive correction for errors in the data and the application of correct estimation procedures. Furthermore, adverse labour market consequences of severance pay are not detected in a dynamic characterization of the Lazear model"[7]. Not surprisingly, the authors are keen to emphasise that their "results do not of course imply that the effects of dismissals laws, or employment protection legislation more generally, are benign", in the attempt to mitigate their conclusions. Finally, it is worth mentioning also several contributions which found an even positive effect of employment protection on labour market outcomes. Among the most cited papers we find Belot and van Ours (2004) which show that "Employment protection and centralization have a negative influence on unemployment". In the same vein, Amable et al. (2011) find that "product market regulations and EPL have, respectively, a negative/positive impact on employment".

6. Beyond the meta-analysis: a crisis of 'consensus' in the works published by international institutions?

According to the meta-analysis and the meta-regression described in the previous sections, the supposed positive effect of labour deregulation on employment and unemployment are substantially denied by the large majority of studies on the subject. It must be specified, however, that in order to define a precise perimeter of the sample and meet the MAER-NET guidelines our meta-analysis included only refereed papers published by academic journals. This means that all the works published by leading international economic and financial organizations have not been contemplated in the meta-analysis, even though many of them are dedicated to the topic and have influenced both the academic community and the political arena. Without having the ambition to be exhaustive as the meta-analysis and meta-regression described above, in this section we shall take a close look at the reports and papers published by the leading international economic institutions. As we shall see, even those of them that usually support labour deregulation have recently published several works which represent counter-examples with respect to the 'OECD-IMF consensus'.

One the most influential advocates of the labour market flexibility has been the OECD, since its celebrated Jobs Study (OECD 1994) and a series of follow-up implementation reports (OECD 1997, 1999) and country case studies. The ambitious and highly influential Jobs Study released by the OECD (1994) has been a landmark among the supporters of labour deregulations. The report argued that the roots of unemployment rest in social institutions and policies such as unions, unemployment benefits, and employment protection legislation, and proposed a 'Jobs Strategy' based on ten recommendations, including: (i) removing restrictions that prevent wages to be respondent to local conditions; (ii) reform the employment protection legislation, abolishing legal provisions that can inhibit the private sector's employment dynamics; and (iii) reform the Social Security benefits such that equity goals can be reached without impinging the efficient functioning of labour markets (OECD 1994). In a follow-up report, the OECD (1997) emphasized the significant improvements

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[7] Lazear's data are not complete for all variables and years. Moreover, serially correlated errors produce biased OLS estimates which are instead ultimately favoured by Lazear. Addison et al. (2000) correct the data for errors of omission and commission as identified by Addison and Grosso (1996). The autocorrelation issue is instead addressed running a fixed effect model on the pooled data, computing the autocorrelation coefficient and estimating the (fixed or random effects) model on the transformed data, taking into account this autocorrelation.

obtained by pursuing these recommendations: "Developments in structural unemployment over the 1990s to a large extent reflect the progress made in implementing the OECD Jobs Strategy". Similarly, in an assessment published a few years later the OECD (1999) corroborated the goodness of the Jobs Strategy prescriptions: countries "that have been most successful in curbing structural unemployment and improving overall labour market conditions […] have been amongst the most determined in implementing the Jobs Strategy".

Endorsement for the dictates of the Job Study also arrived from subsequent research papers published by OECD experts. In his influential work, Scarpetta (1996) found that "stringent employment protection legislation contributes to high unemployment and non-employment rates". A few years later, Scarpetta's work is extended by Elmeskov et al. (1998), who find a large significant positive relationship between employment protection and unemployment: an increase of 4.3 units (one standard deviation) on an EPL index with a possible range from 0 to 18, is associated with a 1.4 percentage-point rise in the unemployment rate. Though, their findings suggest that for most countries, most of the change in the unemployment rate can be attributed to country-specific effects rather than any identified change in labour market institutions. They are aware of this limitation which may affect the model: "an important fraction of the estimated change in structural unemployment cannot be accounted for by changes in the explanatory variables included in our analysis". Nevertheless, they are much less cautious in the concluding remarks: "[…] there is a natural tendency in many countries to delay needed reforms in certain areas and/or search for alternative, 'sweeter' remedies. It requires strong political will and leadership to convince electorates that it is necessary to swallow all of the medicine and that it will take time before this treatment leads to improved labour market performance and falling unemployment. But the success stories show that it can be done!", (Elmeskov et al. 1998).

Like the OECD, also other leading policy institutions such as the IMF and the World Bank support labour market flexibility in order to boost job creation. According to an IMF (1999) survey paper, econometric analysis provided considerable support to "the dominant view" as "institutional factors (the wage-bargaining framework and job protection legislation) are estimated to have a statistically significant and quantitatively important effect on the structural unemployment rate". Therefore, in order to improve labour market performance "the first-best policy might be to remove the institutional arrangements, such as union monopoly power and job protection legislation", (IMF 1999). In the same vein, the IMF (2003) World Economic Outlook stated: "A wide range of analysts and international organizations – including the European Commission, the OECD, and the IMF – have argued that the causes of high unemployment can be found in labour market institutions. Accordingly, countries with high unemployment have been repeatedly urged to undertake comprehensive structural reforms to reduce 'labour market rigidities' such as generous unemployment insurance schemes; high employment protection, such as high firing costs; high minimum wages; non-competitive wage-setting mechanisms; and severe tax distortions". In the same page, however, we can also read: "while there are solid theoretical arguments underpinning the call for such [labour] reforms, the empirical evidence is somewhat less developed and, in some cases, unsupportive". Yet, despite this, the chapter concludes: "to sum up, reductions in replacement rates, lower tax wedges, liberalized employment protection regulations, and improved active labour market policies remain essential ingredients of a comprehensive labour market strategy geared to reducing Europe's high structural unemployment rate", (IMF 2003). A similar perspective was held by the World Bank (2008) which strongly advocated structural reforms in national labour markets as "many countries err on the side of excessive rigidity, to the detriment of businesses and workers alike" because "laws created to protect workers often hurt them" (World Bank 2008).

Although the leading policy international institutions have long supported labour deregulation, in the last few years it is possible to find some traces of dissent within the same institutions. This may reflect the inconclusive findings showed in the recent empirical literature on the subject. Building on a literature review (Betcherman 2012), the World Bank (2013) argued that "new data and more rigorous methodologies have spurred a wave of empirical studies over the past two decades on the effects of labour regulation […] Based on this wave of new research, the overall impact of EPL and minimum wages is smaller than the intensity of the debate would suggest. Most estimates of the impacts on employment levels tend to be insignificant or modest". Therefore, "labour policies and institutions are neither the major obstacle nor the magic bullet for creating good jobs for development in most countries" (World Bank 2013, which quotes Boeri et al. 2008 and Freeman 2008 among the new empirical studies). Similar conclusions can also be found in the OECD Employment Outlook 2016: "Most empirical studies investigating medium/long-term effects of flexibility-enhancing EPL reforms suggests that they have no or a limited positive impact on employment levels in the long run" (OECD 2016). And again, a recent IMF World Economic Outlook states: "The analysis shows that reforms that ease dismissal regulations with respect to regular workers do not have, on average, statistically significant effects on employment and other macroeconomic variables", (IMF 2016).

Along with these new sceptical remarks about the effectiveness of labour market reforms, in recent years it is possible to find some sporadic cases in which even the institutions that have always supported the 'consensus' recognize that in some cases labour regulations can be necessary. In 2015, the World Bank's Doing Business Report reversed its earlier positions by noticing that "employment regulations are unquestionably necessary […] to protect workers from arbitrary or unfair treatment and to ensure efficient contracting between employers and workers" and thus "they benefit both workers and firms" (World Bank 2015). In a similar vein, the new OECD (2018) Jobs Strategy recognises that policies to support flexibility are not sufficient to simultaneously deliver good outcomes in terms of job quantity, job quality and inclusiveness, thus it rather stresses the need for policies that protect workers, foster inclusiveness and allow workers and firms to make the most of ongoing challenges and opportunities. These remarks are based "on new evidence that shows that countries with policies and institutions that promote job quality, job quantity and greater inclusiveness perform better than countries where the focus of the policy is predominantly on enhancing (or preserving) market flexibility". Undoubtedly, as emphasised in the introduction, the main message of the new OECD Jobs Strategy "represents a significant evolution from the 2006 strategy, and even more from the original 1994 strategy" (OECD 2018).

The above statements might be not enough to declare a crisis in the 'IMF-OECD orthodoxy' even within the same institutions. However, they seem to testimony the existence of some cracks in the old 'consensus' which also cross the institutions and are probably influenced by the results of academic research highlighted in our meta-analysis. In 1999 the OECD stated: "[…] it is difficult to confirm that recent EPL reforms have been associated with changes in employment and unemployment" (OECD 1999). In the light of the analysed literature, the sentence seems to be quite prophetic: although it refers to late 90's reforms, the same could also be said about more recent labour market deregulations.

7. Further cases against the 'consensus': disaggregated EPL and productivity

The literature analysed in our meta-analysis has dealt above all with the possible relations between overall indicators of employment protection legislation and aggregate trends of employment and unemployment. Other contributions, however, have focused on

disaggregated versions of the labour protection indexes - which distinguish between individual and collective protections, between regular and temporary contracts, etc. - and on the possibility that these variations influence not only the trends of employment and unemployment but also additional variables, such as GDP growth, productivity dynamics, job reallocations, and so on. In this regard, Bassanini et al. (2009) seem to suggest that this evolution of economic research could have been guided by the more or less explicit attempt to circumvent the lack of evidence at the macroeconomic level and search in a disaggregated context new evidence in favour of the 'consensus': "In the case of employment protection legislation […] there is little evidence of an aggregate employment impact (e.g. Nickell et al. 2005). This could explain the burgeoning interest in other effects of EPL, including those on job turnover, firm dynamics and productivity, as a means of justifying reforms in this area on efficiency grounds.". However, as we shall see, it is not too difficult to find counterexamples against the 'consensus' also in relation to the disaggregated EPL trends and their effects on variables other than those inherent to employment. This section does not aim to be exhaustive as a meta-analysis. However, we shall quote only a few studies among those which consider disaggregated EPL and/or additional dependent variables and once again provide some counter-examples which do not seem to support the 'OECD-IMF consensus'.

Here we cannot examine all the dependent variables evaluated by the literature on the effects of labour deregulation. Instead, we prefer to focus on just one crucial case: we shall consider the possible impact of EPL on the dynamics of productivity. In this regard, a typical 'consensus' view is that: "stringent employment protection has a sizeable negative effect on labour market flows and, through this channel, hinders productivity growth"; and "By raising labour adjustment costs, EP [employment protections] may stifle the allocation of labour to the most productive uses and thus hinder productivity growth" (Martin and Scarpetta 2012). Empirical evidence, however, is not all in favour of this position. The first attempt to analyse the relationship between employment protection and labour productivity is provided by DeFreitas and Marshall (1998) that analyse a sample of 20 less developed countries of Asia and Latin America. The authors find that job security regulation has a negative impact on labour productivity growth. Interestingly, Nickell and Layard (1999) and Koeniger (2005) find a weak but even positive effect of employment protection on productivity, at macro and micro level respectively. In the same vein, Boeri and Garibaldi (2007) find reduced productivity after the 1997 Italian labour market reform while Cingano et al. (2016) are not able to detect any clear effect analysing the previous decade. Furthermore, inconclusive evidence is provided by Micco and Pages (2006). The authors analyse the economic effects of employment protection legislation in a sample of 69 developed and developing countries: the very weak negative relationship found between EPL and productivity is not even robust to sample changes. Partial results are provided also by Scarpetta and Tressel (2004) who find that differences in labour market regulation *per se* do not significantly affect productivity. Interestingly, one of the most cited papers is Autor et al. (2007) whose results show at the same time a positive impact of job security legislation on labour productivity and a negative effect on Total Factor Productivity.

Let us consider now the attempts to examine disaggregated EPL indexes in order to investigate more specific and granular mechanisms behind the relationship between employment protection and labour market outcomes. The idea is that labour market reforms can be very heterogeneous in their compositions and introduce adjustments on just one or few components of the employment protection index. According to this view, changes in the different EPL components may produce various labour market outcomes. Moreover, disproportions in the regulations for temporary and permanent jobs may have compositional effects on employment with consequent effects on labour market performance (Boeri and Garibaldi 2009). However, the attempts to restore the validity of labour flexibility reforms

analysing EPL index subcomponents do not seem to be very successful. As a matter of fact, already in OECD (1999), it was claimed that even studying the effect of EPL breakdowns, the impact on unemployment will be muted because both regular and temporary employment regulations present offsetting dynamics that compensate at the end. Similar results are obtained by Avdagic (2015) whose estimates show that regular and temporary contracts regulations have no effects on aggregate unemployment. Analogously, Kahn (2010) does not find evidence of correlation between employment rate and employment protection for regular and temporary jobs. A new line of research in this literature focuses on youth labour market performance. The idea is that strict employment protection on permanent job leads employers to increase temporary contracts and discourage them to turn the jobs from temporary to permanent in the future. This mechanism is thus supposed to increase the turnover and the unemployment rate, hitting young people above all (Blanchard and Landier 2002; Addison and Teixeira 2003). The policy advice, of course, would be avoiding duality and deregulate both permanent and temporary contracts legislation. Nevertheless, also these conjectures have been disproved by data (Avdagic 2015; Noelke 2011).

8. Concluding remarks

In this paper, we have presented a first meta-analysis built according to the MAER-NET guidelines, which collect academic peer review papers devoted to the relation between Employment Protection Legislation indexes on one hand and employment and unemployment rates on the other. Among 53 academic papers published between 1990 and 2019 and contained in the Web of Science, only 28% supports the 'consensus' while the remaining 72% report results that are controversial (21%) or contrary to the 'consensus' (51%). The decline in 'consensus' is particularly evident especially in the last decade. Results are independent of the citations of the papers examined, the impact factor of the journals and the techniques used. A FAT-PET meta-regression model (Funnel Asymmetry Test and Precision Effect Test) confirms these outcomes.

The meta-analysis and the meta-regression presented in this paper have some limitations: they only examine overall EPL indexes and macroeconomic measures of employment and unemployment. Then, they do not explore the literature on the possible changes in disaggregated EPL indexes, the possible impact of labour regulation on the employment dynamics of specific groups – i.e. male or female workers; young or old workers; skilled or unskilled and so on - or specific industries, or on other dependent variables, such as GDP, productivity and so on. In this regard, Bassanini et al. (2009) seem to suggest that the recent evolution of economic research could have been guided by the more or less explicit attempt to circumvent the lack of evidence at the macroeconomic level and search in a disaggregated context new evidence in favour of the 'consensus': "In the case of employment protection legislation […] there is little evidence of an aggregate employment impact […]. This could explain the burgeoning interest in other effects of EPL, including those on job turnover, firm dynamics and productivity, as a means of justifying reforms in this area on efficiency grounds.". Future research will verify whether the results of our study are confirmed in further meta-analyses extended to disaggregated EPL, micro data and further dependent variables. For the moment, it is already unquestionable that even in fields not covered by our meta-analysis it is possible to find several studies that contrast the so-called 'IMF-OECD consensus' on the benefits of labour deregulation (for example, on disaggregated EPL indicators, see: Kahn 2010, Avdagic 2015; on the impact of EPL on productivity, see: Scarpetta and Tressel 2004; Koeniger 2005, Micco and Pages 2006, Cingano et al. 2016).

In this crisis of the 'consensus', it is interesting to note a proliferation of new theses on the

effects of labour deregulation. Among the views which have also been considered by international institutions, one of the most examined is the thesis according to which labour deregulations can create inequalities rather than employment and growth (Freeman 2008; Campos and Nugent 2015 and for a possible application, Dosi et al. 2020; Checchi and García-Peñalosa 2008; Guerriero and Sen 2012; Deakin et al. 2014; Jaumotte and Osorio-Buitron 2015; Parisi 2017; Ciminelli et al. 2018; for a survey and new empirical evidence see: Brancaccio et al. 2018). The possibility that a "new consensus" may in the future actually form around these and other alternative theses is a question that obviously remains open (on this point see Blanchard and Brancaccio 2019).

Be it as it may, one fact seems to be already well established. When the top officials of the major international economic institutions support labour deregulations by claiming that these reforms promote economic growth and employment,[8] they suggest an economic policy line that is not confirmed by the prevailing empirical research and which in some cases is denied by studies published by those same institutions. In our opinion, this contrast between diagnosis and prescriptions represents an interesting topic of investigation and a possible further research field.

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[8] There are countless examples of this. Here we provide only two testimonials from the top institutional representatives of IMF and OECD who were in charge in 2019. "I think structural reform is necessary in terms of labour market regulations in some areas of economic activity that are too protected and which need to be opened up to competition. This goes for everyone. It's true for France, it's true for Germany, it's true for Italy." (Christine Lagarde, IMF Director, 8 September 2014; Reuters). "OECD Secretary-General Angel Gurría congratulates Prime Minister Renzi on the passing by the Italian Senate of a bill enabling the government to elaborate a comprehensive reform of the labour market – the so-called Jobs Act. 'This is a highly welcome development. If fully implemented, the Jobs Act will contribute to put Italy on a more dynamic growth path that will bring benefits across the population, boosting job creation and reducing unemployment', he said." (OECD Speeches/Presentations, 9 October 2014).

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Appendix

Author(s), year	Journal	Times Cited	Support for 'conensus'	Estimation method	Time span
Adams et al. (2019)	INTERNATIONAL LABOUR REVIEW	0	Do not support	OLS, FE,GMM, PMG	1990-2013
Adascalitei & Pignatti Morano (2016)	IZA JOURNAL OF LABOR POLICY	1	Do not support	GLS	2008-2014
Addison & Grosso (1996)	**INDUSTRIAL RELATIONS**	**35**	**Support**	**OLS**	**1956-1984**
Addison et al. (2000)	**SOUTHERN ECONOMIC JOURNAL**	**14**	**Do not support**	**OLS, FE, RE, FGLS**	**1956-1984**
Amable et al. (2011)	**APPLIED ECONOMICS**	**14**	**Do not support**	**FEDV**	**1980-2004**
Avdagic (2010)	**COMPARATIVE POLITICAL STUDIES**	**2**	**Do not support**	**OLS-PCSE**	**1980-2009**
Avdagic & Salardi (2013)	**SOCIO-ECONOMIC REVIEW**	**18**	**Do not support**	**FGLS, OLS-PCSE**	**1980-2009**
Ayala et al. (2002)	**APPLIED ECONOMICS**	**9**	**Controversial**	**OLS**	**1980-1996**
Baccaro & Rei (2007)	INTERNATIONAL ORGANIZATION	72	Do not support	OLS, PWLS, FGLS, OLS-PCSE, RE FE	1960-1998
Barbieri & Cutuli (2016)	EUROPEAN SOCIOLOGICAL REVIEW	20	Do not support	FE	1992-2008
Bassanini & Duval (2009)	**OXFORD REVIEW OF ECONOMIC POLICY**	**90**	**Do not support**	**FE**	**1982-2003**
Belot & van Ours (2001)	**JOURNAL OF THE JAPANESE AND INTERNATIONAL ECONOMIES**	**33**	**Do not support**	**OLS, FE**	**1960-1995**
Belot & van Ours (2004)	**OXFORD ECONOMIC PAPERS-NEW SERIES**	**97**	**Do not support**	**OLS, FE**	**1960-1999**
Bertola (1990)	EUROPEAN ECONOMIC REVIEW	242	Do not support	OLS	1960-1987
Bertola (2017)	**RESEARCH IN ECONOMICS**	**0**	**Do not support**	**FE**	**1960-2015**
Blanchard & Portugal (2001)	AMERICAN ECONOMIC REVIEW	160	Controversial	OLS	1985-1994
Blanchard & Wolfers (2000)	**ECONOMIC JOURNAL**	**363**	**Support**	**OLS, FE**	**1960-1995**
Boeri (1999)	EUROPEAN ECONOMIC REVIEW	52	Do not support	OLS	1983-1993
Boeri & Brueker (2011)	ECONOMIC POLICY	22	Do not support	OLS, 2SLS-IV	2007-2010
Bradley & Stephens (2007)	COMPARATIVE POLITICAL STUDIES	17	Support	PCSE	1974-1999
Bruno & Rovelli (2010)	**JCMS-JOURNAL OF COMMON MARKET STUDIES**	**8**	**Controversial**	**OLS, RE**	**1999-2006**
Cuestas et al. (2011)	JOURNAL OF COMPARATIVE ECONOMICS	16	Do not support	Unit root tests	1998-2007
De Serres & Murtin (2014)	ECONOMIC POLICY	3	Do not support	GMM	1985-2010
Di Tella & MacCulloch (2005)	**EUROPEAN ECONOMIC REVIEW**	**59**	**Support**	**FE, RE, LSDV, GMM**	**1984-1990**
Dixon et al. (2017)	APPLIED ECONOMICS	5	Do not support	FE	1985-2013
Djankov & Ramalho (2009)	**JOURNAL OF COMPARATIVE ECONOMICS**	**47**	**Support**	**OLS**	**2004-2008**
Duval & Furceri (2018)	IMF ECONOMIC REVIEW	2	Controversial	FE	1980-2000
Estevao (2007)	**IMF STAFF PAPERS**	**7**	**Do not support**	**OLS**	**1985-2000**
Feldman (2009a)	**JOURNAL OF COMPARATIVE ECONOMICS**	**49**	**Support**	**FE**	**1992-2002**
Feldman (2009b)	**APPLIED ECONOMICS**	**8**	**Support**	**RE**	**2000-2003**
Feldman (2013)	**APPLIED ECONOMICS LETTERS**	**1**	**Support**	**FE, RE**	**1992-2008**
Fialová & Schneider (2009)	**EASTERN EUROPEAN ECONOMICS**	**15**	**Support**	**GLS-RE**	**1999-2004**
Fiori et al. (2012)	**ECONOMIC JOURNAL**	**30**	**Support**	**GLS-FE**	**1980-2002**
Flaig & Horst (2013)	**EMPIRICA**	**8**	**Support**	**FE, RC, MX**	**1960–2000**
Furceri & Mourougane (2012)	PANOECONOMICUS	3	Support	ARDL	1960-2006
Garibaldi et al. (2002)	ECONOMIC POLICY	21	Support	OLS, FE, RE	1980-2000
Garibaldi & Violante (2005)	**ECONOMIC JOURNAL**	**56**	**Controversial**	**FE**	**1960-2000**
Gregg & Manning (1997)	EUROPEAN ECONOMIC REVIEW	29	Do not support	OLS	1960-1990
Griffith et al. (2007)	**ECONOMIC JOURNAL**	**45**	**Do not support**	**OLS, IV**	**1986-2000**
Heimberger et al. (2017)	**JOURNAL OF POLICY MODELING**	**0**	**Do not support**	**FD, OLS-PCSE**	**1985-2011, 2001-2012**

Holt & Hendrickson (2017)	CONTEMPORARY ECONOMIC POLICY	1	Controversial	FE, RE	1985-2013
Jimenez-Rodriguez & Russo (2012)	BULLETIN OF ECONOMIC RESEARCH	5	Controversial	Unit root test	1980-2008
Lazear (1990)	QUARTERLY JOURNAL OF ECONOMICS	415	Support	OLS, FE	1956-1984
Lehmann & Muravyev (2012)	ECONOMICS OF TRANSITION	20	Controversial	FE, NLOLS	1995-2008
Mortensen (2005)	JOURNAL OF THE EUROPEAN ECONOMIC ASSOCIATION	18	Support	OLS	1992-2003
Mourre (2006)	APPLIED ECONOMICS	20	Controversial	OLS	1970-2002
Nickell (1997)	JOURNAL OF ECONOMIC PERSPECTIVES	624	Do not support	GLSRE	1983-1994
Nickell et al. (2005)	ECONOMIC JOURNAL	392	Do not support	GLSFE	1961-1995
Nunziata (2003)	LABOUR ECONOMICS	12	Support	MLE-RE, OLS, GLS	1975-1997
Nymoen & Sparrman (2015)	OXFORD BULLETIN OF ECONOMICS AND STATISTICS	4	Do not support	FE, GMM	1960-2012
Papapetrou & Tsalaporta (2017)	MANCHESTER SCHOOL	1	Controversial	FE	1970-2013
Pissarides (1999)	SCOTTISH JOURNAL OF POLITICAL ECONOMY	5	Support	OLS	1985-1993
Stockhammer & Klär (2011)	CAMBRIDGE JOURNAL OF ECONOMICS	11	Do not support	OLS	1960-1999

Table A.1. Full list of the 53 papers included in the meta-analysis. In bold the papers included in the meta-regression.

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