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Policy failure in the triangle of growth: labour market, human capital and innovation in Spain and Italy

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The study of the relationship between politics, policies and models of capitalism has resumed significantly in a series of recent important contributions, in fields from political science to economics and sociology (Amable 2003; Crouch 2015). In particular, the work of Peter Hall and David Soskice on varieties of capitalism (2001) triggered a thorough debate on how national regulatory frameworks and the presence of a specific set of policies directly contribute to supporting, or to hindering, firms' competitiveness. Research on this topic is now well-established and focuses on a broad range of themes, dealing with the relationship between economic development, social inclusion and public policies (i.e. labour market, welfare, industrial policies, innovation, etc). An intense period of research has produced valuable advances on the role of public policies and on their capacity to combine growth and social cohesion in different types of capitalism.

Many of these contributions underline the importance of national regulatory frameworks and the need for advanced economies to follow a growth model focused on the so-called 'high road of development'. This model is based on economic innovation, high-added value activities and high-quality products able to protect themselves from competition with countries characterised by extremely low labour costs. In particular, these studies have shown that in order to follow the high road, interventions in three policy arenas are highly important: labour market, human capital and innovation. Particular attention has been devoted to the relationships between these policy arenas, summed up in the concept of institutional complementarities: interdependencies across policy fields that reinforce each other and their impact, enabling or constraining economic competitiveness (Amable 2003; Aoki 2001; Crouch 2015).

This article focuses on this 'triangle of growth' - labour market, human capital and innovation- and analyses reforms and policies set up in Italy and Spain in these fields since the mid-1990s, comparing their main features and outcomes with two other countries that are part of the eurozone, France and Germany, where these three arenas play a key role in their economic growth. The analysis of these three fields underlines the policy reasons that have supported the Italian and Spanish models of growth, emphasising two major issues that are particularly relevant to understanding trends and challenges for Mediterranean capitalism.

First, the way in which the Italian and Spanish national political economies have dealt with the labour market, human capital and innovation has created many constraints that have hindered the rise of institutional complementarities and the competitiveness of the two countries. During the 1990s both countries increased external labour flexibility – raising the number of atypical contracts and producing a dual labour market – but they did not invest in human capital or in research and development. This model of flexibility without an increase in employment quality and innovation triggered a specific kind of employment growth, based on low labour productivity, low-quality jobs, and weak capacity of innovation, undermining the competitiveness of export-led sectors and creating a system that was particularly exposed to 'bad-weather' conditions. As we will see, these constraints were playing a major role well before the economic crisis and before the introduction of the euro, generating long-term institutional conditions that explain why the 2008 crisis has had such a deep impact on the two countries.

Second, the analysis of the two countries – and the comparison with Germany and France – will demonstrate similarities as well as structural differences between Italy and Spain which triggered

their different strengths and shortcomings. Hence, this article will raise the question of whether there is a single South European model of capitalism, as some scholars have stressed (Hancké & Thatcher 2007). Spain and Italy have different productive structures, based on medium- to low-tech manufacturing, which is of major importance in Italy, and on the construction industry and low-added value services in Spain. Differences in the intensity of the process of labour market flexibilisation and in the main goals of industrial policies show two diverse growth models, both of which are characterised by a long path towards the low road of development.

The article is organised as follows. In the next section we approach the theoretical debate that underlines the importance of labour market reforms, human capital and investment in innovation in promoting growth in advanced economies. In section two we focus on the main features of the Italian and Spanish political economies before the crisis. Sections three to five analyse the three policy arenas in the Spanish and Italian cases, emphasising their weaknesses and shortcomings as well as their respective differences, while adopting Germany and France as control cases. The sixth part sets out our conclusions.

The triangle of growth: flexibility, human capital and innovation policies

Since the beginning of the 1990s, advanced capitalisms have been faced with new challenges such as the rise of international competition, the liberalisation of products and financial markets, the increasing scope for international trade and the rise of competition over low labour costs from countries such as China or India. Given these global changes, which have reduced the possibility of advanced economies competing on the cost of products and services, it became a necessity for many countries to restructure their competitive strategies. The so-called ‘low road of development’, based on low-quality products and low labour costs came to an end, while the ‘high road’, based on innovation, productivity and diversification became the viable competitive strategy for Western economies (Hall & Soskice 2001).

The theoretical and empirical contributions on this shift towards the ‘high road’ have highlighted the importance of three pillars, namely labour flexibility, investment in human capital and innovation, and have underlined the importance of institutional complementarity – the effects of mutual reinforcement – between them.

To take the first pillar; at the beginning of the 1990s the low level of labour market flexibility – measured by the percentage of temporary employment or fixed-term contracts and by the strictness of hiring and firing regulations for standard and non-standard employment - was identified as one of the main weaknesses of European capitalisms. The massive debate on the so-called Euroclerosis, the economic stagnation which has characterised Europe in the 1970s and 1980s, emphasised that the high level of unemployment in European countries was directly created by the rigidity of the labour market (Esping-Andersen & Regini 2000; Korpi 1996). In particular, many scholars explained that labour flexibility helps to deal with a volatile demand for products (Esping-Andersen & Regini 2000; Streeck 2009). Since then, the main trends in labour market regulation have been the adjustment of the labour supply to the requirements of the market, deregulation and rising labour market flexibility. At the same time, many studies underlined that in order to promote a shift towards the high road model, investments in labour quality were necessary. However, in the process of labour market adjustment – which was particularly intense in Spain, and later in Italy - selective flexibility was introduced, mainly addressed towards specific groups of workers through atypical contracts, but without any attempt to promote employment quality. As a result, a strong dual labour market emerged in both countries (Palier 2010; Esping-Andersen & Regini 2000; Dore 2000; Streeck 2009).

Another important strand of literature has underlined that innovation and productivity are related to a large extent to the availability of human capital, the second pillar described herein. At the beginning of the 1990s, Paul Romer and Robert Lucas studied economic growth and showed that productivity is linked to endogenous variables such as the skill levels of the workforce. Later, Robert Barro highlighted a clear relationship between the level of school attainment with economic

performance, especially in the field of innovation (Barro 2001, Lucas 2015). More recent literature has explained differentials in the long-term economic fortunes of a nation with so-called knowledge capital, measured through the assessment of scientific skills (Hanushek and Woessmann 2015; Savvides and Stengos 2009). Over recent years, comparative research on European countries has shown similar results. Thelen (2014), for example, focused on vocational education and training in order to understand its impact on labour market outcomes; Busemeyer and Trampusch (2011) analysed professional training, identifying different mechanisms for the creation of skills, either based on the role of the state, such as in the French case, or, on the role of firms and social partners, such as in Germany, where specific institutions like the *Fachhochschulen*¹ offer high levels of skills and specialisation that have been crucial in the rise in productivity of German firms. Overall, these scholars have shown that investment in education, training and skills have become a productive factor that enhances the economic competitiveness of advanced capitalism. We will see that Italy and Spain are characterised by a low level of investment in education and training, by a quality of education that is lower than other EU competitors and by a mismatch between the supply and demand for highly skilled workers. These three features have created notable shortcomings for the competitiveness of the two countries.

Third, there is a significant amount of literature on the importance of innovation policies² for the competitiveness of high-tech sectors, as well as for the introduction of new technologies in medium- and low-tech sectors. The positive correlation between investment in innovation, productivity and competitiveness has been widely demonstrated by comparative political economy, which shows how different types of state intervention favour the emergence of different forms of innovation. Continental Europe and countries such as Germany and France have institutional contexts that are more favourable to incremental innovation, while Anglo-Saxon countries, such as the United States or the United Kingdom, are more prone to radical innovation. In both cases, the role of state policies is crucial in sustaining private innovation through direct policies or via indirect instruments such as public procurement (Mazzucato 2013; Block 2008). The role of the state also emerges as crucial in the literature on National Innovation Systems, which clarifies how different institutions contribute to the development and diffusion of technologies and innovation, influencing economic growth. Finally, analysis on the changing role of the state confirms that despite the reduced regulatory power in the economic sphere, national governments are particularly active in innovation policies, a domain where they maintain strong control (King & Le Galès 2017; Leibfried et al. 2015). We will underline that despite the importance of innovation policies, Spain and Italy are characterised by an underfunded public support for innovation and by industrial policies mainly addressed towards low-productivity sectors; this has taken the two countries away from the high road of development.

These three pillars are heavily dependent on national policies and this is one of the most important reasons why the path towards the ‘high road’ has been followed at different speeds in different European countries. At the same time, these policy fields have many possible interdependencies: all of them produce effects that can promote some sort of complementarity and a mutual reinforcement of their impact (Aoki 2001). Given that this triangle of growth is key to Italy and Spain’s responses to the crisis, this article focuses on their national political economies, exploring the above-mentioned policy arenas. Obviously, this does not mean that austerity did not hinder recovery from the crisis (Petmesidou *et al.* 2014; Natali & Stamati 2014; Salmon 2017; Verney & Bosco 2014). Rather, it reduced the room for manoeuvre for investment in human capital and innovation, while monetary and political integration favoured other countries such as Germany (Hall

¹ Tertiary education institutions specialised in applied sciences, primarily designed with a focus on technical and professional skills.

² Policies for innovation represent a broad family of policies addressed towards promoting innovation in the economic system, through support to research and development activities, regional innovation clusters, collaboration between public organizations and businesses on research and development programmes, incentives and loans to single firms to introduce technological innovation, etc.

2015), exacerbating the weaknesses of Southern Europe. But low investment in these arenas - a constant feature over the last thirty years in both countries – hindered the rise of institutional complementarities and increased the impact of the crisis. Without a reversal in this trend the recovery of Italy and Spain will be built on weak ground.

Italy and Spain before the Great Recession

As mentioned above, the literature on varieties of capitalism (VoC) initially left aside the cases of Spain and Italy, which were difficult to classify according to a typology that distinguished between the liberal market economies of Anglo-Saxon countries and the coordinated market economies of Continental and Northern Europe.

Subsequently, some scholars taking the VoC approach studied the Mediterranean countries, especially Italy and Spain, defining them as mixed market economies, that is, ‘hybrid’ capitalist models with many common elements in their political economies. Both have a productive structure characterised by small- and medium-sized enterprises, deep territorial cleavages, the notable presence of a shadow economy, a strong role played by the state in the economy and a welfare system characterised by the very significant role of the family (Molina & Rhodes, 2007). Finally, both countries were characterised by a low level of labour productivity: according to the OECD database, before the economic crisis of 2008, the GDP per hour worked in Spain was 42 dollars, in Italy it was 47, while in France and Germany it was over 56 dollars per hour. Despite these similarities, however, three differences between the two countries can be identified, some of which will be discussed in the following pages.

The first important difference relates to the weight of public debt and GDP dynamic. The analysis of OECD data shows that in the mid-1990s, Spain had a ratio of public debt to GDP of 61.7 per cent, much lower than that of Italy (116.9 per cent). In the following years, with the rationalisation and containment of public spending, Spain further improved its position, arriving in 2007 at a ratio of debt to GDP of 35.6 per cent; in the same year Italy had a debt-to-GDP ratio of 99.8 per cent. In 2008 the economic crisis had a very tough impact on both countries, with a twofold effect on the debt-to-GDP ratio. On the one hand, GDP growth was reduced and on the other rising unemployment triggered spending on passive labour policies – such as unemployment benefits. Owing to these effects, in 2017 the debt-to-GDP ratio reached 131 per cent in Italy and 98.1 per cent in Spain. This difference means that before the 2008 crisis Spain had more room for manoeuvre for expansionary public policies. However, a large share of public investment was addressed to funding public infrastructure and support for the construction industries rather than to labour market, human capital or innovation policies.

Second, from the beginning of the 1990s the two countries grew at a different pace. OECD data show that from 1995 to 2007, GDP per capita grew by 112 per cent in Spain and 83 per cent in Italy. In the same period the number of employees rose from 12 to 20 million in Spain and from 19 to 22 million in Italy. Thus, Spain registered major growth up to 2008, but it is worth mentioning that this growth was based on the rise of low productivity sectors rather than of a high road of development.

Third, the economies of Italy and Spain are characterised by different sectorial specialisations, but both are based on the low road of growth. In Italy the role of manufacturing has always been more important than in Spain. Italy was – and is – more specialised in manufacturing in the so-called industrial districts specialised in the *Made in Italy* label (leather, textiles, clothing, etc.) which are strongly developed in the central and the north-eastern regions, such as Tuscany, Emilia Romagna and Veneto. These areas started to suffer stress in the mid-1990s due to the increase in international competition and the arrival of producers who had the ability to contain costs much more than Italian companies. In the early 2000s, eurozone entry further reduced the space for price competition, increasing the need to upgrade competitive strategies that were more focused on product and employment quality.

In Spain there were different production specialisations, linked to tourism, construction and more generally low value-added service sectors. The beginning of the 1990s was an important turning point, which triggered notable economic growth, based on three main factors: a) low interest rates that favoured internal indebtedness – predominantly private; b) policies that promoted the liberalisation of large segments of the Spanish economy; c) privatisations in Latin America that provided room for major investments by large Spanish companies, also thanks to the purchasing power of the euro. These factors 'coupled' with a regulation of the real estate market, encouraging the long-lasting growth of this sector. The development of the construction sector was also linked to the credit structure. From 2004 to 2007 credit to the construction sector grew by an average of 24 per cent per year, while credit for the purchase of real estate grew by 43 per cent, so much so that in 2007 the entity of the loans to these two sectors of activity was equivalent to 45 per cent of GDP (Carballo-Cruz 2011). The number of homes in the period 1998-2007 grew by 30 per cent and, in 2006, the number of new homes was higher than that of Germany, France and Italy combined (Carballo-Cruz 2011).³

These features created far-reaching weaknesses in the two countries, which have emerged clearly since the beginning of 2000s. On the one hand, a process to upgrade the Italian firms' competitive model was necessary in order to maintain competitiveness in the context of a strong currency such as the euro; on the other, Spain needed to support not only low-productivity activities and the housing sector but also activities characterised by high productivity and innovation. As the following sections show, this twofold process of readjustment found notable constraints in the political economy of the two countries and in the low level of investment in the fields of labour market, human capital and development policies, and this hindered the adjustment towards the high road of development and led to the notable and longstanding impact of the 2008 crisis. In the following sections, these three arenas are examined in detail.

Regulation of the labour market: when quantity is preferred to quality of employment

Labour markets in Spain and Italy have undergone a significant process of transformation in the last 20 years. This section focuses on these processes, showing that labour market policies both in Spain and Italy have pursued the goal of flexibilisation in a very effective way but that this has not been able to improve employment quality. The widespread flexibilisation generated specific outcomes in terms of the deterioration of job conditions while the low quality of employment hindered the adjustment towards a high road model of development.

Looking at the Spanish case, it is possible to note that employment growth during the 1990s was accompanied by a series of reforms that triggered a process of labour market flexibilisation and promoted the rise of atypical labour contracts, initially leaving the guarantees of permanent work unchanged. The consequence of flexible labour market access and a rigid exit from permanent employment was the rise of fixed-term employment from the mid-1980s. Temporary employment grew from 500,000 in 1984 to more than 8 million in 1996, reaching a peak level of about 2.5 times the European average (Karamessini 2007; Meardi 2012). Figure 1 shows that fixed-term employment growth continued after the adoption of the euro, from 30.8 per cent in 2004 to 33.6 in 2006 (Royo 2013). Unemployment fell, and Spain became the second country, after Germany, to create the most jobs in the decade before the crisis (Royo 2013).

³ Membership of the euro in 1999 gave a significant impetus to the Spanish property market. This housing boom was reflected in a credit boom, with rates of growth that peaked above 25 per cent in 2006, 15 points of which were related to housing, construction and property development. Housing supply and prices grew at an unprecedented rate during the 1990s and the 2000s and in the second half of 2008, as a result of the shocks from the American subprime mortgage crisis, the Spanish bubble burst.

Since the mid-1990s, consecutive labour reforms – in 1997, 2001 and 2006 – also reduced protection for workers with permanent contracts, redefining the conditions for fair dismissal and significantly decreasing compensation for unfair dismissal (Botti & Field 2013; Godino & Molina 2011; OECD 2013). The rise in employment went hand in hand with low productivity. According to Eurostat, total employment increased from 54.2 per cent in 1997 to 71.8 in 2007, but this growth characterised mainly low-added value sectors, such as tourism (employment in hotels and restaurants) and construction (Table 1). The latter grew from employing 1.5 million in 1999 (10.6 per cent of total employment) to 2.7 million in 2007 (13.2 per cent).

Figure 1

Table 1

Spanish employment growth in the second part of the 1990s was, therefore, largely based on labour-intensive sectors, such as services and construction, which favoured the growth of youth employment in low-skilled occupations, triggering an increase in school dropouts (Gutierrez-Domenech 2011). But the fragility of this kind of growth became clear in 2008, when the financial crisis hit the country, dramatically affecting employment and most severely and directly flexible temporary workers (Figure 1), young people and workers specialising in low-added value activities. According to Eurostat, in the period 2008-2018 employment in the construction industry decreased by about 1 million workers.

As a response to the crisis, Spain continued to expand flexibilisation and loosen employment protection. The country was targeted by international organisations, the national bank and employers' organisations who recommended a reduction in the excessive protection of workers in permanent contracts (OECD 2011, 2013). The main reforms were launched with the packages of 2010 (Ley 10/2010) and 2012 (El Real Decreto-Ley 3/2012), then strengthened with additional measures in 2014 and 2015, which further decreased dismissal costs for permanent contracts and smoothed the difference between temporary and permanent contracts. The 2012 law, which came as a unilateral state action when the social partners and government failed to reach an agreement, increased the decentralisation of the collective bargaining system and stipulated that company-level agreements should prevail in a large number of areas. While the process of deregulation of the labour market intensified over time, the objective of improving the match between labour supply and demand through labour market services has never been achieved. In particular, active labour market policies (ALMPs), which aim to increase human capital development through up-skilling programmes and to support groups that are disadvantaged in the labour market, by helping them move from involuntary inactivity into work, have never been expanded.

As Table 2 shows, the level of expenditure in labour market services had always been below the level of German and French spending since 1997, and this trend continued after the crisis. The percentage of expenditure on ALMPs in Spain in the period 1997-2007 was also much lower than the equivalent spending in Germany and France. To intervene against the exceptionally high level of unemployment reached after the outbreak of the crisis, expenditure on ALMPs increased, reaching 0.6 per cent of the GDP. However, investments were mainly directed towards interventions that provided temporary support for vulnerable groups, such as matching labour supply and demand and maintaining the jobs of persons threatened by unemployment, out-of-work income support and employment incentives (i.e. discounts on social security contributions for hiring young people, over 50s or the long-term unemployed), more than up-skilling measures. Indeed, within the ALMPs, the expenditure for enhancing human capital and workers' competencies through training was extremely poor both before and after the crisis. On the contrary, employment incentives in Spain have always been higher than in Germany and France (table 2).

Table 2

A trend towards flexibilisation without an improvement in employment quality can be seen in Italy as well. In particular, in 1997 the so-called Pacchetto Treu implemented a social ‘Pact for Employment’ by restructuring vocational training contracts, making part-time work more flexible, and introducing temporary work, previously forbidden in Italy. Between 1997 and 2003 other incremental changes broadened flexibility further. In 2001, the scope of occupations that allowed for fixed-term contracts was expanded. In 2003, the Berlusconi government introduced new types of flexible employment contracts (i.e. employee leasing, on-call employment, job sharing) through law no. 30/2003, also known as the Legge Biagi. In the following years (2005-2011), the alternation of centre-left and centre-right governments produced a rebound effect: in 2007, the Prodi government abolished employee leasing and on-call employment and restricted the possibility of renewing fixed-term contracts; however, in 2008 the new Berlusconi administration restored the principles contained in law no. 30 and instituted the ‘job voucher’ payment system.⁴

With the outbreak of the crisis, deregulation continued. Law no. 92/2012 – also known as the Legge Fornero – and, in 2015, Renzi’s ‘Jobs Act’ lent more flexibility to firing workers. The former changed the rules for illegitimate individual dismissal contained in the Workers’ Statute (art. 18) by reducing the possibility of job reinstatement. The latter introduced a new open-ended contract type (*contratto a tutele crescenti*) that envisaged a non-mandatory monetary compensation for dismissal and, at the same time, replaced the obligation of workers’ reinstatement in the case of unfair dismissal with a severance payment, which increased with the seniority of the dismissed worker (Sacchi 2018). As Figure 1 shows, the result is that temporary employment grew steadily from 1990 to 2017.

Overall, the Italian approach to labour market flexibilisation has followed two logics. On the one hand, the reduction of protections against dismissal was followed by changes in hiring (temporary contracts, on-call employment, job vouchers and other bogus self-employment contracts). On the other hand, the coverage of unemployment benefits has been widened, both by reducing the eligibility criteria for access to benefits and by lengthening their duration. However, this change towards an ‘embedded flexibilisation’, namely a more protective approach towards coverage of the new social risks of flexible workers (Picot & Tassinari 2017), has not entailed policy interventions for employment quality, for example through ALMPs, which in Italy are still marginal with respect to other passive labour market policies (Bonoli 2010; Sacchi & Vesan 2015). Also in Italy, as in Spain, expenditure on labour market services was extremely low both before and after the crisis and the total expenditure on ALMPs even decreased from 0.5 per cent of GDP in the period 1997-2007 to 0.3 in 2008-2016, against 0.7 per cent in France and 0.6 per cent in Germany (table 2).

Thus, the progressive flexibilisation of the Italian labour market has not been compensated by investment in training. Public investment in training remained stable from the period 1997-2007 to 2008-2016 in spite of the sharp increase in long-term, youth and over-50s unemployment levels. Even more than in the Spanish case, in Italy ALMPs are mostly conceived in the form of hiring incentives, reduced social security contributions for new entrepreneurs and mediation between demand and the supply of low-quality jobs (Bonoli 2010).

Many similarities can be found between the Spanish and Italian cases. As we have detailed in this section, since the 1990s both countries have promoted a flexibilisation of the labour market, mainly based on atypical contracts, which triggered a dual labour market. Furthermore, labour market policies have mainly been aimed at favouring the match between demand and the supply of low-quality employment and at increasing hiring incentives rather than promoting skills improvement and human capital development. This attention to matching services is also related to the huge employment growth in low-added value sectors, such as construction, where there was also a large proportion of immigrant workers – especially in Spain – who needed more help in terms of labour

⁴ Job vouchers aimed to regulate the wage payments made to seasonal and contingent workers. This extremely flexible contract did not confer any entitlements in terms of sick leave, holiday pay or unemployment benefits.

market services. During these years, the low attention paid to employment quality went hand in hand with a low degree of investment in ALMPs and especially in training. As a result, both countries were characterised by a notable growth in labour flexibility and by an increase in employment until the outbreak of the crisis, while employment quality remained poor. This type of labour market regulation was compatible with the growth of the low-productivity sector but, at the same time, less conducive to an upgrade towards a high road model.

Human capital: scarce investment, low quality and skill mismatches

Spain and Italy share three main features related to the arena of human capital: low public investment for all levels of education, low quality of educational institutions and a notable mismatch between the supply and demand for skilled employment. All three factors have strongly influenced the quality of human capital available in the two countries and undermined adjustment towards the high road of development.

As for the level of investment, Spain spends more on tertiary education than Italy: between 2008 and 2016, public expenditure on tertiary education was, on average, 0.6 per cent of GDP in Spain and 0.4 per cent in Italy. At the same time, Spanish students pay lower fees and can benefit from more grants than Italians, whose university fees have actually doubled in the last ten years (OECD 2014, 2017; Viesti 2016). But on comparing Spain and Italy with other countries, their low level of investment emerges. Spain invests less than other countries as a share of its GDP for all levels of education (4 per cent), while the OECD average is 4.5 per cent (OECD, 2018). The same is true for Italy where in 2015 expenditure per student returned to 2010 levels, having previously fallen by 5 per cent, while at tertiary level, expenditure fell by 7 per cent (OECD 2018). The low level of investment clearly emerges when looking at expenditure per full-time student for tertiary education. In 2015 France and Germany invested more than 16,500 euros per student, while Italy spent 11,000 and Spain 12,900. This feature is also confirmed by investment in training activities. In 2016 investment in these activities amounted to 0.15 per cent of GDP in Italy and Spain compared to 0.37 per cent in France and 0.24 per cent in Germany (table 3).

The low level of investment went hand in hand with a lower ‘performance’ of educational institutions: Programme for International Student Assessment (PISA) data show that France and Germany scored better results than Italy and Spain and the same is true when looking at the quality of education as a whole, and the quality of scientific education in particular. At the same time, the lower quality of public education has not been balanced by other forms of skills provision, for example at the level of firms: on-the-job training is less developed in the two Mediterranean countries than in France and Germany. Finally, it is worth noting that the relationship between firms and universities is less developed in Italy and Spain than in Germany and France (OECD 2018).

All this means that in Italy and Spain there is a lower level and a worse quality of investment in human capital than in other EU countries. The overall result is a lower capability to enhance talents, as shown by the brain drain problem affecting the two countries (table 3).

The weaknesses in terms of human capital are confirmed by the notable mismatch between supply and demand for skilled employment. A recent OECD report (2016) states that both the Spanish and Italian labour markets suffer from a skills mismatch, albeit in different ways. On the one hand, in the Spanish case, 46.9 per cent of workers feel that their skill level does not match the requirements of their job and most of them report that they are over-skilled for the actual work they are doing. At the same time, Spanish firms perceive a lower level of skills shortage than in other European countries. On the other hand, the percentage of Italian workers who declare a skills mismatch is lower (37.9 per cent) than the European Union average (44.8 per cent), while more than one third of firms declare that they face a skills shortage (OECD 2016).

These divergent kinds of misalignment in the two labour markets – over-qualification in Spain vs. skills shortage in Italy – are the result of differences in skill supply and demand and lower connectivity between universities and private firms.

Table 3

Concerning Spain, since the turn to democracy in 1975, improvements in tertiary education attainment have been on an impressive scale (Fuentes 2009). The analysis of Eurostat data shows that the population aged 30-34 with a tertiary degree went from 18.6 per cent in 1992 to 41.2 per cent in 2017. However, educational expansion was not followed by changes in labour market demand. Weakness in manufacturing and specialisation in less knowledge-intensive services still lead to a prevailing request for unskilled jobs. Especially in tourism-led regions and in the construction industry, the inflow of unskilled youth into the labour market is particularly high even today. This is one of the causes of school drop-out. Although the number of early leavers from education and training has decreased steadily in the last 30 years, the Spanish drop-out rate is still the highest in the European Union.⁵

In Italy, the labour supply is less polarised than in Spain. Although university enrolment among young people increased in the 2000s, in the period 2008-2017 the average share of Italians aged 30-34 with a tertiary education was barely 22 per cent (table 3). Italy therefore faces a large skills shortage which is unusual for an advanced economy. In other words, the skills provided by education and training institutions are at a lower level than those required by employers. At the same time, as we will argue in the next paragraph, since the Italian productive system is specialised in low-to medium-technology sectors, the demand for high-skilled workers is poorer than in other advanced economies. That is the reason why, more than in the past, in recent years Italy has been facing a brain drain issue⁶ while, at the same time, there is a high incidence of early leavers from education and training. In a nutshell, Italy shows both a poor qualification of its human capital and a lack of demand for highly skilled workers.

All of this shows that in terms of human capital, Spain and Italy face three significant shortcomings. First, the political economies of Italy and Spain are characterised by a low level of investment in education and training. Second, the quality of education is lower than in other EU competitors. Third, there is a notable mismatch between the supply and demand for highly skilled workers. In terms of human capital availability, these three features create notable constraints that hinder the adjustment of competitive strategies towards high-quality/high-productivity activities.

Innovation policies and the low road to development

The support of breakthrough technologies and industries, technology transfer practices, along with interventions in innovative ecosystems, are the main ways through which governments boost economic competitiveness and increase productivity levels. In that regard, the systemic approach to

⁵ In 1992, early leavers from education and training accounted for 40.4 per cent of the Spanish population aged 18-24, while in France and Germany the figure was well below 20 per cent. Twenty years later, in 2017, Spanish 'early leavers' dropped to 18.3 per cent, while in Germany and France the drop-out rate decreased to below the European Union average (10 per cent). Italian levels of drop-outs have always been high but below the Spanish ones. The numbers went from 37.5 per cent in 1992 to 14.0 per cent in 2017.

⁶ According to the Italian National Institute of Statistics (ISTAT), the percentage of graduates in the emigrant population above 24 years of age increased from 11.9 per cent in 2002 to 30.8 per cent in 2016. In 2016, 24,678 university graduates decided to emigrate.

innovation claims that the innovative capacity of a country does not depend on what is done by a single company, a research centre or through a specific public intervention, but on how far public and private organisations have succeeded in building a flourishing institutional setting. From this point of view, Italy and Spain have never been considered to display innovation systems, either in the 1990s or in recent years.

In the early 1990s, Malerba (1993) depicted the Italian innovation system as a dual model. On the one hand, a system of ‘localised small and medium enterprise networks’, which specialise in the low- to medium-technology sectors; on the other hand, a core of R&D players consisting of public research organisations, universities and large, often state-owned firms. Such a model had allowed Italy to benefit from long-lasting economic growth, which began in the post-war period, but it inaugurated a slow, progressive decline from the beginning of the 1990s (Toniolo 2013). The factors that can explain the Italian decline are undoubtedly many (Donatiello & Ramella, 2017), but the further specialisation of the manufacturing system in low-tech activities and the scarce funding available for public research activities are, undoubtedly, the underlying causes of the deepened fragility (Lucchese et al. 2016; Nuvolari & Vasta 2015).

Conversely, Spanish innovation systems have always been extremely weak. Manufacturing activities are scarce and mainly concentrated in medium- to low-technology sectors. Public support for innovation only started at the end of the 1970s, when democratic governments began to promote technological development institutions (such as the Centro para el Desarrollo Tecnológico Industrial in 1977), adopted a first regulatory framework for scientific activities (the Ley de la Ciencia in 1986) and, finally, in 1985, started to provide the very first indirect incentives for private investments in R&D (Buesa Blanco 2003, 2013). Since the 1990s, public intervention in innovation policies continued to grow, especially under Zapatero’s government. The availability of structural funding from the European Community and, later, the devolution of the main competencies in innovation policies to the regional authorities, strengthened the role and the scope of the university system, as well as the promotion of technology transfer from public research to industry. Nevertheless, Spain, as indeed Italy, has never matched the expenditure levels in R&D of the European benchmark countries.

In 1995, Spanish and Italian gross domestic expenditure on R&D (GERD) – the total expenditure on research and development performed in the national territory - was around 1 per cent of GDP, while in France and Germany it exceeded 2 per cent. Twenty years later, in 2016, the two southern European countries just exceeded the one per cent threshold, while expenditure in Germany reached almost 3 per cent of GDP and in France 2.3 per cent (table 4).

Table 4

Moreover, due to the sovereign debt crisis, Spain and Italy’s public expenditure on R&D had declined rapidly, while in the same period that of France and especially of Germany increased. In Spain, investment fell from 9.6 billion euros in 2009 to 5.9 in 2013 (ERAC 2014), thereby returning to 2000-2001 levels (Fernández-Zubieta & Zacharewicz 2016). Cuts in research policies, university funding and support for private R&D activities thus froze the process of convergence of the Spanish economy towards the average European level (OECD 2016a). Furthermore, budget constraints led to poor financing of the innovation policies such as the new Ley de Ciencia, Tecnología e Innovación (2011), the Entrepreneurship and Internationalisation Support Act (2013) and Industria Conectada 4.0 (2014).

In Italy, too, the R&D activities performed by the government itself (GBOARD) decreased drastically as a result of the sovereign debt crisis of 2011 (Nascia et al. 2016). According to the OECD database, in 2012 government and higher education expenditure on R&D was 0.54 per cent of GDP, whereas in 2016 the same institutions invested 0.50 per cent. Meanwhile, Spain fell from 0.60 to 0.55 per cent, while Germany and France increased their public funding.

The effect of austerity on innovation policies consequently had a pro-cyclical effect that put a stop to the early ripening of the most innovative layer of the economy, while causing further

specialisation in the low road to development. In real terms, the economic crises and the decline in spending had significant effects on reducing the number of what the European Community Innovation Survey calls ‘innovative enterprises’: from 2008 to 2014, the number of such innovative firms fell by 36.2 per cent in Spain and 22.1 per cent in Italy (OECD 2016a).

Another important feature of the Spanish and Italian innovation systems is the very low level of business enterprise contribution to R&D (BERD) – the component of GERD incurred by firms. Both before and after the 2008 crisis, the BERD was, on average, much lower in Italy and in Spain, amounting to two fifths of the French and one third of the German firms’ spending. Although the Italian and Spanish BERD increased over time, the distance between them and the two continental European countries remained mostly unchanged (table 4).

The inadequacy of the business contribution to innovation emerges clearly by looking at the main high technology outcomes. The Italian and Spanish shares of world high-tech exports have always been well below those of Germany and France but, in recent years, their trends regressed further. According to Eurostat, from 1995 to 2000, the world share of high-tech export was 7.5 per cent in Italy and 5.8 per cent in Spain. From 2008 to 2017 the same indicator regressed to 6.7 in Italy and 5.2 in Spain. The trend in France and Germany was the opposite. In the former, the world high-tech export increased from 19.2 to 20.2 per cent, while in the latter, the share passed from 13.2 to 14.2 per cent. Similar weaknesses emerge from other indicators such as the number of patents in high-technology domains or the level of venture capital investments (see Table 5).

Table 5

This low level of public and private investment in innovation has gone hand in hand with industrial policies addressed towards the ‘low road of development’. In the Italian case, governments have primarily supported low technological specialisation. Before the adoption of the euro, Italy mainly depended on the devaluation of the lira to favour the export of goods labelled *Made in Italy* (i.e. clothes, furniture, etc.). At that time, both international competition and the need for an upgrade of the position of Italian firms in their increasingly globalised value chain were still feeble. Consequently, the lack of robust and targeted industrial and innovation policies did not represent a major problem. Since globalisation began to tighten up its effects on the advanced economies and the adoption of the euro excluded a monetary devaluation strategy, the Italian industrial policy based on cost containment and a weak currency became outdated. Nevertheless, during the 2000s, governments continued to use barely focused industrial policy measures, such as tax credit for capital goods. Nowadays, the ‘localised small and medium enterprise networks’ that were competitive in the technological context of the 1980s are far from the technological frontier (Bugamelli et al., 2012).

Nanotechnologies for textiles or cyber-physical applications for the mechanical industries are examples of technological changes that are underexploited by Italian firms. Furthermore, large corporations have decreased in size, scope and productivity (Toniolo 2013). During recent years this trend has been partially reversed, with some policies focused, amongst other things, on innovation (namely the Nuova Sabatini in 2013, the Decreto Crescita 2.0 in 2014 and the Industria 4.0 in 2016). These interventions introduced extensive benefits to start-ups and to firms investing in capital goods (in terms of tax incentives or access to credit facilitation), recruiting highly skilled workers, contracting with research centres and, finally, claiming patents. These examples of recent changes in the policy approach to innovation are definitely important but are still underfunded, at least if compared to most other national innovation systems (Onida and Viesti 2016).

While Italy tried to defend its traditional low-tech industries, Spain steered its industrial policy towards other kinds of labour-intensive sectors. Together with tourism, one notable example is given by the massive support given to the construction industry by local, regional and national governments from the 1990s onwards. Between 1997 and 2007, national and regional governments annually dedicated about 1 per cent of Spanish GDP to fuelling the demand for housing (AlberdÍ and Levenfeld

2013).⁷ This direct support of public policies for the construction sector came along with a supply-side intervention. The 1998 Land Law deregulated building procedures by declaring almost all land not under explicit environmental protection fit for urban development (Romero, Jiménez & Villoria 2012). In those years, the construction sector was also strengthened by low interest rates, which facilitated a channelling of liquidity into the Spanish real estate market from other European countries (Bielsa & Durante 2011). Public expenditure on infrastructure is another factor that profoundly influenced the Spanish specialisation in the construction sector.⁸ From 1995 onwards, Spain invested an annual average of 1.2 per cent of its GDP in inland infrastructure (rail and roads). This model of investment in low-added value and labour-intensive activities worked well in a period of ‘good international weather’, promoting employment growth up to the financial crisis, but was then severely affected by the economic crisis.

Together, the huge support for low-technology sectors and the poor support for innovation helps us to understand why international experts - such as the European Research Area and Innovation Committee (ERAC), the European Joint Research Centre (JRC) and the Organisation for Economic Co-operation and Development (OECD) - agree that the design of Spanish policies could have better supported the growth of existing business and high-tech sectors as well as the emergence of innovative start-ups.

In conclusion, the comparison shows that the Spanish and Italian innovation systems share three common features: *i*) weak industrial specialisation in high-tech sectors; *ii*) occasional and underfunded public support for innovation, *iii*) industrial policies mainly addressed towards low-productivity sectors. These features come into sharp relief when compared with the performance of France and Germany. So far, instead of promoting an economic upgrade of their innovation systems, Italian and Spanish public interventions have generated a certain *lock-in* effect for their economies, which has been enhanced by the recent financial and economic crisis.

Conclusions: failures in the triangle of growth in Italy and Spain

Since the 1990s, international competition and technological innovation have challenged national competitive strategies. The low road of development, based on the low quality of products, low prices and low-quality employment in labour-intensive sectors has become too difficult to follow for advanced economies. Many theoretical and empirical contributions have stressed the importance of a shift towards the ‘high road’, based on innovation and the quality of products. In particular, a broad debate underlines the key role played by human capital, innovation and labour market reforms. Some countries, such as Germany and France, started to invest a massive amount of resources in these fields. Meanwhile others, such as Italy and Spain, lagged behind. This paper has shown how this happened, emphasising the differences and similarities between the two Mediterranean countries.

Regarding the differences, variations can be found in the labour market reforms. First, the process of flexibilisation started much earlier in Spain than in Italy and the intensity of this process was much greater in Spain, where, during the 1990s, the level of atypical contracts was almost double the number in Italy. Second, Spain dedicated relatively greater attention than Italy to active labour market policies, especially to those aimed at promoting matching supply and demand. This is also related to the huge employment growth in low-added value sectors, such as construction, where there was also a large proportion of immigrant workers who needed more help in terms of labour market services, such as matching supply and demand. Third, differences can also be found in development policies. Spain is characterised by more public support for low-productivity sectors such as tourism and especially construction, while Italy promoted low-tech manufacturing activities. All of this entailed an important difference in terms of productive structures. Construction and tourism were the

⁷ The public intervention came both directly through public housing and indirectly through tax benefits, mortgage subsidies and the dissuasion of home rental.

⁸ In this long cycle of housing expansion, Spain augmented its dwellings by about 5.3 million, while the demand for loans went from 28.4 per cent to 102.9 per cent of GDP (Carballo-Cruz 2011).

two important pillars of the Spanish model, while Italy has a more robust manufacturing base. Thus, a different model of development characterizes the two countries, with a different role for the productive structure, and differences in policies for innovation and labour market regulation.

Despite these differences, many similarities can also be found. In particular, since the 1990s, both countries promoted a flexibilisation of the labour market, mainly based on atypical contracts, which triggered a dual labour market. Furthermore, labour market policies were aimed at favouring the match between the supply and demand for low-quality employment rather than promoting skills improvement and human capital development. During these years, the low attention paid to employment quality went hand in hand with a low degree of investment in human capital: both countries addressed fewer resources than many other EU member-states towards the field of education and skills and professional and lifelong learning. Finally, both countries invest few public and private resources in research and innovation: for this reason, advanced and high-added value sectors have been facing difficulties. This high-flexibility/low-quality model was consistent with employment growth but only in conditions of 'good weather', while it has been particularly vulnerable in times of crisis. The 2007 crisis amplified these weaknesses, but the political economy models have continued to create the same types of shortcoming.

The analysis of recent data and policies carried out in this article highlights that support persists for the low road model. Almost ten years after the outbreak of the crisis, Spain and Italy continue to have a lower level of human capital-related investments. Looking at the arena of the labour market, a high level of temporary employment and external flexibility continues to characterise the Spanish case in particular. In both cases, there is a low level of investment in employment quality. Finally, both governments and private firms invest less in research and development. Thus, even if the two countries could benefit from a partial recovery driven by an improvement at the international level, it is clear that the same kinds of weaknesses persist as in the 1990s. If the national political economy of the two countries continues without any substantial change, Italy and Spain risk being two giants with feet of clay.

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