Labor market policy: Flexicurity, unemployment, and worker satisfaction

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March 2, 2010

1 Introduction

"Flexicurity" is an approach to protecting workers that de-links workers' protections from the employee-employer relationship. This paper develops two labor policy indices, one measuring the government-provided safety net and another measuring dismissal protection. Flexicurity advocates argue that dismissal protection and other protections delivered through the worker-employer relationship distort firms' employment decisions and lead to longer unemployment duration while government benefits also protect workers but without distorting firms' decisions. Flexicurity critics argue that employer-provided protections do *not* have these side effects and that job security and worker satisfaction are valid policy goals that cannot be met by generous safety nets alone. The indices are used to test these claims. First, they are used with data from the Luxembourg Income Study data to examine policy's impact on workers' employment status. Then the they are used with data from the World Values Survey to predict workers' life satisfaction and happiness, with a particular focus on the unemployed. Findings suggest that in terms of employment effects, dismissal protection and safety nets need to be balanced as to not disproportionately favor one sector of the work force over another. The second analysis finds that a flexicurity policy does seem to be optimal in terms of life satisfaction and happiness, and that if strong employer-provided protections are pursued, they should be accompanied by a generous social safety net and active labor market policies.

2 Current policy

"Flexicurity" is a term used broadly to cover a wide array of policy approaches and objectives. Here "flexicurity" is defined as an approach to protecting workers that de-links workers' protections from the employee-employer relationship. This policy is intended to providing workers a safety net while not distorting businesses' employment decisions. As such, we define two approaches to worker protection: social insurance and policies that protect and retrain workers and protections delivered through the employer–such as minimum wage or dismissal protection. While flexicurity advocates treat the two types of labor protections as substitutes, in practice, countries tend to use them as compliments.

Denmark is normally used as an example of the ideal "flexicurity" country. Denmark has a low payroll tax burden on businesses; only 10.3% (2005) of firms' compensation costs are non-wage costs, compared to 22.7% in Finland or 31.2% in France (BLS, 2007).[1] In Denmark employers must give workers 1 month notice (or compensation) before dismissal if the worker has been employed for at least one year. Mandatory notice increases 1 month per three years of service, up to a maximum of 6 months. Table 1 shows these laws across all countries included in this study. Notable, Denmark's policy is not for flexible than much of Europe, and certainly not as flexible as the US's policy of "at will" employment (i.e. workers can be let go at any time). Though seldom mentioned in the literature,

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[1] Numbers reported by the International Labor Organization and the US Bureau of Labor Statistics do not exactly agree, though they find the same relative costs across countries.

Danish unemployment insurance is *voluntary*. Individuals join unemployment insurance funds, which are part of trade unions or professional organizations and are subsidized by the state. This private system can be restrictive; workers must *join* a fund and pay contributions for at least 52 weeks over a period of 3 years to qualify for benefits. Take-up is about 80% and workers with less risk of unemployment are more likely to opt out (Parsons et al., 2003). These qualities make the Danish system somewhat unfair, though it is generous. Figure 1 which depicts unemployment insurance salary replacement rates across countries. Danish unemployment insurance replaces approximately 50% of a worker's salary, as measured by the OECD.[2] This is the highest replacement rate among the OECD countries, with the exception of the Netherlands (53%) and is close to Belgium (42%) and Portugal (41%). Denmark also spends significantly more on active labor market programs. This system is expensive. In 2004 (before a recent tax cut) average income tax rates could reach 59.1%, among the highest in Europe (Denmark, 2004). Consequently, Denmark recently reduced the maximum duration of unemployment insurance from 5 to 4 years and moved to require recipients to accept job offers or to enter retraining schemes. Although the literature focuses on Denmark, in recent years Switzerland or Belgium have become better candidates for the "flexicurity" exemplar countries as Belgium liberalized its restraints on businesses and Switzerland expanded its safety net. Today Switzerland's maximum notice period is 3 months and Belgium's is 6; they have generous replacement rates of 35 and 40%; and they spend .7 and 1.2% of their GDPs on active labor market policies and 1 and 3.3% of their GDPs on unemployment insurance. Swiss unemployment insurance expenditures are so low not because they are not generous, but because the unemployment rate is low–between 2 and 4%.

Table 1 depicts a few aspects of current dismissal protection law. In recent years EU countries's policies changed more or less in response to EU policy, beginning with the 1993 "White Paper on Growth Competitiveness and Employment," which encouraged more flexible labor markets and active labor market programmes, and continued with the July 2005 EU Guideline 21 to "promote flexibility combined with employment security and reduce labor market segmentation..." The most politically intractable part of changing to a flexicurity approach is removing existing protections. As such, rather than removing workers' existing protections, countries made markets more "flexible" by introducing new types of contracts with weaker protections, leading inadvertently to a segmented labor market. Countries then focused on eliminating that segmentation–for example Spain offered cash bonuses to employers turning fixed term contracts into permanent ones and the Netherlands' moved to equalize different types of employment contracts. EU directives have also moved in this direction. The 1999 EU Directive 99/70/EC limited fixed term contracts, requiring countries to specify whether these contracts must be justified by employers, the maximum number of consecutive contract renewals, the maximum contract length, and the maximum cumulative duration of successive contracts). Directive 97/81/EC on part time work outlawed discrimination against part-time workers, mandated pro-rated pay, required the elimination of laws limiting part-time work, and encouraged firms to hear requests to move from full to part-time work (or vice versa). Most recently, directive 2008/104/EC encouraged equal treatment and union representation for temp workers. Overall, these changes have not moved countries towards more flexible labor markets. There have been more significant changes on the security half of "flexicurity." Spending on active labor market programmes has increased as have mandatory job search programmes and training.[3] Figure 1 illustrates the evolution of benefit replacement rates and we can see that many countries held benefits constant while Italy, Spain, and Switzerland increased benefits. Plots of active labor market expenditures (not shown) also show growth, particularly in France, Switzerland, and Italy.

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[2] Average of the gross unemployment benefit replacement rates for a worker with a full record of employment at two earnings levels (67% and 100% of average production worker earnings), in three family situations (single, married with dependent spouse, married with spouse in work) and three unemployment spell durations (first year; second and third year; fourth and fifth year.)

[3] For an excellent overview of the recent shift towards active labor market policy, see Kluve et al. (2007).

	Dismissal	Redundancies	Unjust dismissal
Belgium			
	Notice: Blue collar: 1 mo for <20 yrs & 2 mos for 20+ yrs. White collar: 3 mos for every 5 yrs service & 6 mos for those > 65 years old.	**Notice:** 30 days plus a severance payment of 50% of the difference between wages and unemployment insurance for 4 mos	**Protected:** employee representatives, pregnancy, parental leave, military service, educational leave, industrial doctor, worker w/ action before labour court or in political office
	Severance: in lieu of notice	**Third Parties:** workers' representative & national employment office	**Compensation:** 6 mos pay for blue collar equivalent to notice for white collar
	Justification: Not required except for "protected workers"	**Priority:** Firm discretion	**Reinstatement:** for members of works councils or occupational safety and health committee
	Third Parties: Regarding protected workers only (labour organisations)	**Procedure:** If no notice, compensation in lieu of notice	
France			
	Notice: 1 mo/6 mo-2 yrs service, 2 mo/ 2+ yrs service	**Notice:** 30 days if < 100 dismissals, 45 days if 100-250, 60 days if > 250	**Protected:** employee representatives, pregnancy, parental leave, work injury, minority
	Severance: $.1*$monthly wages$*$yrs service (up to 10 yrs) + $.0677*$monthly wages$*$yrs of service (over 10 years)	**Third Parties:** works committee or staff delegates	**Compensation:** 1 month's wages for procedural failure. 6 months wages if invalid
	Justification: necessary	**Priority:** Firm discretion, but family, tenure, & labour market chances must be considered	**Reinstatement:** a possible solution (or payment)
	Third Parties: Work committee or staff delegate if economic grounds	**Procedure:** If notice is not given, compensation in lieu of notice	
Germany			
	Notice: 1 mo/ 2+yrs service, 2 mos/ 5+yrs, 3 mos/ 8+ yrs, 4 mos/ 10+ yrs, 5 mos/12+ yrs, 6 mos/15+ yrs, 7 mos/20+ yrs	**Notice:** 30 days & if no agreement reached, compensation = < 12 mos pay if < age 50, 15 mos age 50-55 & 15+ yrs service, 18 mos age 55+ & 20+ yrs service	**Protected:** employee representatives, pregnancy, maternal leave, family leave
	Severance:	**Third Parties:** works council and local labor office must be informed	**Compensation:** $\frac{1}{2}$ gross monthly salary per yr service, up to 18 mos
	Justification: none	**Priority:** firm has discretion but should consider: age, tenure, number of dependants, financial situation, health, likely opportunities in the labour market	**Reinstatement:** often a solution
	Third Parties: Works council must be informed	**Procedure:** Fail to take steps to reach agreement results in redundancy pay	
Italy			
	Notice: varies by industry wide union negotiations	**Notice:** varies by industry wide union negotiations plus standard severance	**Protected:** employee representatives, minorities, pregnancy, maternal leave, marriage, political opinion
	Severance: in lieu of notice + (yr salary/13.5) +(.015$*$yr salary$*$yrs service)	**Third Parties:** employee representative, industry union, & labour authority	**Compensation:** 2.5-14 mos pay determined by court
	Justification: must be justified	**Priority:** Firm discretion (or union contract)	**Reinstatement:** a solution (or compensation)
	Third Parties: not required	**Procedure:** annulment of dismissals for procedural non-compliance	
Netherlands			
	Notice: none if by judge, or 1 mo for < 5 yrs service, 2 mos for 5-10 yrs, 3 mos for 10-15 yrs, 4 mos for 15+ yrs	**Notice:** minimum of 30 days from submission of redundancy request	**Protected:** employee representatives, military service, pending claim in court against employer, marriage, pregnancy, illness
	Severance: by collective agreement	**Third Parties:** Centre for Work and Income allows redundancies	**Compensation:** recommended based on: income, yrs service, and age
	Justification: necessary	**Priority:** Last in first out	**Reinstatement:** a possible solution (or payment)
	Third Parties: Judge must rescind contract or Centre for Work and Income must allow dismissal	**Procedure:** If procedure is not followed, dismissal is null	

	Dismissal	Redundancies	Unjust dismissal
Spain			
	Notice: 30 days	**Notice:** 20 days wages per yr service to 12 mos pay	**Protected:** employee representatives, pregnancy, maternity & family leave, minorities
	Severance: 20 days/ year of service up to 12 months pay	**Third Parties:** permission from labour authority and employee representative	**Compensation:** 45 days wages/ yr service to 42 months pay
	Justification: no severance if for non-performance	**Priority:** Firm discretion (or according to union contract)	**Reinstatement:** a solution
	Third Parties: Often courts in non-performance cases	**Procedure:** annulment of dismissals for procedural non-compliance	
Switzerland			
	Notice: 1 mo for 1 yr service, 2 mo for 2-9 yrs, 3 mo for 9+ yrs. Can vary by contract/union agreement, but not < 1 mo	**Notice:** 30 days. Shorter for hotels, restaurants, and cafes.	**Protected:** employee representatives, military service, pregnancy, sick or injured workers, minorities
	Severance: 2 to 8 mos if a worker is over 50 and has 20+ yrs service	**Third Parties:** employee representative & Cantonal Labour Office	**Compensation:** equals earnings during the notice period up to 6 mos wages
	Justification: not necessary	**Priority:** Firm discretion	**Reinstatement:** not a solution
	Third Parties: A third party must not be informed	**Procedure:** noncompliance triggers up to 2 mo severance pay	
Sweden			
	Notice: 2 mos for 2-4 yrs service, 3 mos for 4-6 yrs, 4 mos for 6-8 yrs, 5 mos for 8-10 yrs, 6 mos for 10+ yrs. Exceptions for those beyond retirement age.	**Notice:** 30 days	**Protected:** employee representatives, pregnancy or parental leave, care for dependents, military or civil service, educational leave, minorities
	Severance: per union agreement	**Third Parties:** Labour Authority	**Compensation:** 16, 24, or 32 mos wages for <5 yrs, 5-10 yrs, 10+ yrs service
	Justification: necessary	**Priority:** Tenure based Small businesses allowed discretion	**Reinstatement:** a possible solution (or payment)
	Third Parties: Employees' organisation if employee worker belongs to union	**Procedure:**	
UK			
	Notice: 3 weeks	**Notice:** 1 wk for 1 mo-2 yrs service + 1 wk/yr for 2-12 yrs, up to 12 wks for 12+ yrs. Or payment in lieu of notice	**Protected:** employee representatives, pregnancy, parental leave, work injury, minority
	Severance: None	**Third Parties:** employee representative	**Compensation:** Up to £77,000
	Justification: yes, but broad grounds	**Priority:** By unit (often by tenure)	**Reinstatement:** a possible solution (or payment)
	Third Parties: none	**Procedure:** 90 days pay	
US			
	Notice: None (2 weeks by convention)	**Notice:** 60 days	**Protected:** age, sex, national origin, & disability
	Severance: none	**Third Parties:** state dislocated worker unit, elected official, & employee representative	**Compensation:** none
	Justification: none	**Priority:** Firm discretion (or union contract)	**Reinstatement:** none
	Third Parties: none	**Procedure:** 60 days of severance pay plus government fine	

The US has no unfair dismissal legislation. However, 42 states recognise exceptions for those who are dismissed for refusing to violate a public policy; 37 states recognise exceptions for violations of "implied contracts"; 11 states recognise exemptions for violations of "good faith."
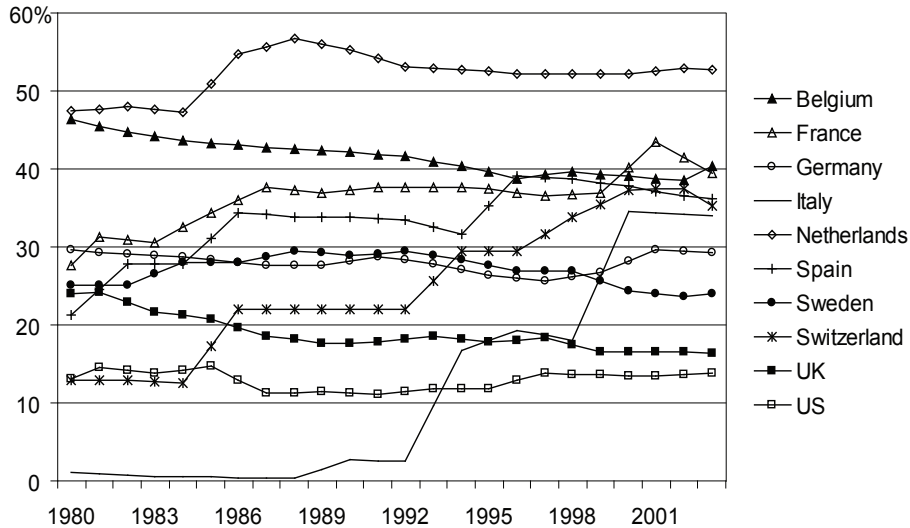
Table 1: Dismissal Protection

Figure 1: Benefit Replacement Rates (OECD Benefits and Wages Statistics)

3 Literature

Employment protection legislation (EPL) is normally measured through an index capturing either "de jure" or "de facto" labor conditions (i.e. "in law" or "in practice.") De jure indices measure key elements of legislation such as the number of months notice a firm must give a worker before dismissal. De facto indices survey individuals (businessmen, labor lawyers, union leaders) about their perception of labor law and its enforcement. Most indices focus on EPL for permanent workers (with the exception of the OECD fixed term index). The most commonly used indices are the OECD 1999/2006 Employment Outlook indices and the World Bank's "Doing Business" indicators (OECD, 1999, 2004, 2006; Botero et al., 2004). The first OECD index codes dismissal notice and procedures, severance pay, and probationary hiring periods for permanent workers while the second OECD index codes limitations on fixed term contracts. The World Bank index codes fixed term contract limits, minimum wages, work hours rules (nonstandard hours and annual leave), firing/redundancy costs and the administrative rules around them (notice requirements, severance payments, approval requirements, priority rules for redundancies, etc). The Botero index measures the same policies, but uses scenario-based measures such as the cost of firing 20% of a firm's workers (10% for redundancy and 10% without cause-incorporating the sum of the notice period). This paper extends the Deakin index (Deakin et al., 2007), a de jure index covering several areas of labor law including alternative employment contracts, the regulation of working time, employee representation, and industrial action (related to permitted strikes). The most commonly used defacto indices are the World Economic Forum's Global Competitiveness Report (based on a survey of business executives) and the Global Labor Survey (Chor and Freeman, 2005) (based on a survey of union officials, labor activists, and labor law professors). Both indices ask whether employers or regulators (or unions) have more control over hiring, firing, labour relations, the enforcement of minimum wages and wages. Although the two groups of respondents should have the opposite dispositions, results are similar. While there are other indices, most are derived from the aforementioned de facto and de jure indices (e.g. Gwartney and Lawson (2004)).

Early research using these indices, like the 1999 OECD Employment Outlook, outlined multiple costs and benefits of EPL including job stability, worker satisfaction, development of firm-specific skills, greater internal flexibility, increased productivity, segmented labor markets, depressed wages, inefficient labor consumption, and labor market exclusion of the long-term unemployed. However, later work focused on unemployment. Most recently re-

searchers have begun to look for EPL's broader effects including GDP growth, income inequality, employment or unemployment, inflation, and earnings growth, and productivity per hour. Most papers use one of the EPL indices described above (e.g. Nickell and Layard (1999) uses the OECD indices, Micco and Pages (2006); Feldman (2009) use the Botero/World Bank, and Feldman (2009) uses the GCR). Some authors use individual measures of labor market protections. Bertola et al. (2000) has suggested using the number of labor cases brought before courts and the percent won, though this has not been pursued probably because of the effort it would entail. Studies consider various macro economic conditions as controls including the tax wedge, union coverage/membership, the extent of centralized bargaining, unemployment insurance generosity, GDP per capita, TFP (total factor productivity) growth, terms of trade, interest rates, labour demand ($ln(\frac{labourcost}{gdp})$), the minimum wage, measures of accounting standards, property rights and the rule of law, health benefits and retirement, and owner occupancy rates (Blanchard and Wolfers, 2000; Nickell and Layard, 1999; Feldman, 2009; Bassanini and Duval, 2006; Micco and Pages, 2006; Freeman, 2008; Lee et al., 2008). Recently the literature has shifted towards looking at interactions between labor market institutions and their interactions with economic conditions (Micco and Pages, 2006; Blanchard and Wolfers, 2000). Most studies use the same data available from the ILO, World Bank, and the OECD. Methods are also rather consistent though some use moving averages to deal with economic cycles (Nickell and Layard, 1999) while others use a filter (Feldman, 2009). All studies take a macro approach (ignoring the interaction between labour market institutions and individual characteristics) and no studies look at non-economic outcomes, linking this work with the economics of happiness literature (Graham, 2008) which does discuss labor market characteristics like unemployment and wages.

Research findings suggest that EPL slows down the labor market (Freeman, 2008), that generous unemployment insurance increases unemployment rates (Nickell and Layard, 1999; Bassanini and Duval, 2006; OECD, 1999, 2004, 2006), and that EPL strongly effects the youth unemployment rate (Feldman, 2009; OECD, 1999, 2004, 2006; Bassanini and Duval, 2006). Findings on overall unemployment levels are very mixed (OECD, 1999, 2004, 2006). Findings also suggest that: active labor market policies can counteract the effects of a generous unemployment insurance system (Nickell and Layard, 1999; Bassanini and Duval, 2006; OECD, 1999, 2004, 2006); economic shocks combined with rigid institutions can lead to longer unemployment spells (Blanchard and Wolfers, 2000); while shocks independently explain an important part of unemployment fluctuations, neither institutions nor the interaction between institutions and shocks contribute very much in real terms (Gaimon et al., 2007); EPL is more binding in those areas or sectors with more demand/supply shocks (Micco and Pages, 2006); macro economic policies like interest rates and expansionary policy can buffer EPL impacts (Blanchard and Wolfers, 2000); shocks may also be smaller in strict EPL countries, but EPL effects persist longer in these countries; and the interaction of institutions and shocks may primarily influence very young and old workers (OECD, 1999, 2004, 2006). [4] Many authors are very cautious about these results given the complex interactions in an economy, and the limited pooled cross sectional data used in these studies (Freeman, 2008; Nickell and Layard, 1999). Some conjecture that the literature's findings are largely driven by southern Europe's strict employment protections and poor labor market outcomes in recent years, and that looking at a broader time period findings are weaker (Bertola, 2009). In 1999 the OECD report also suggested that the indices should be improved, though progress has been made since then.

This debate largely ignores soft outcomes like workers' satisfaction or happiness–presumably one goal of labor market protections. The economics of happiness research suggests that labor protections can influence workers' happiness through multiple paths. Safety nets can increase unemployment rates and increase equality. EPL can increase job security, but increases unemployment for young and minority workers. The happiness literature finds that unemployment and inequality play important roles in people's happiness. Individual's absolute and relative income influences happiness; within a country, the richer are happier and across countries, up to some point, a higher GDP increases happiness (Easterlin, 1974, 2003). Poverty increases unhappiness and suicide (Oswald, 1997; Diener, 2003). Absolute income seems to primarily increase happiness up to some fixed point, after which, only relative income matters. Inequality influences happiness by changing an individual's relative position and its extremity can signal opportunity or injustice (Graham, 2005). Employment is also important. The unemployed are less happy even when they earn the same income (Stutzer and Frey, 2004; Oswald, 1997) and the unemployed are somewhat happier when there are higher unemployment rates (Clark and J.Oswald, 1994; Stutzer and Lalive,

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[4]This is only a short review of a rather extensive literature. For a more thorough review, see work by Scarpetta or Nickell such as: Nickell (1979); Nickell et al. (1985); Nickell (1985); Nickell et al. (1986); Nickell (1997); Nickell and andW. Ochel (2005); Scarpetta (1996, 2000); Scarpetta and Bassanini (2001); Scarpetta and Pierre (2005, 2007); Scarpetta et al. (2007); Scarpetta and Pierre (2007).

2004; Eggers et al., 2005). What do these findings mean for social safety nets and happiness? Through effects on income, inequality, and employment, social safety nets can influence workers' happiness.[5]

This article proceeds by developing the two policy indices, examining their impact on labor market, and finally examining their impact on well-being.

4 Indices

For this analysis I created two indices. The first index uses Deakin's 9 indicators of the regulation of dismissal (Deakin et al., 2007). The original coding included only UK, Germany, France, the US, and India from 1970 to 2006 and as such, is extended for use in this analysis by coding information from the ILO's Termination of Employment Database (ILO, 2009) and Eurofound news releases (EU, 2009). Only the 9 indicators related to the regulation of dismissal are used here, including: notice periods, redundancy compensation, qualifying periods for cases of unjust dismissal, procedural constraints on dismissal, substantive constraints on dismissal, reinstatement as a remedy for unfair dismissal, the parties notified in a case of dismissal, and the role of seniority rules in redundancy selection and re-employment. France was recoded even though it was included in the original index, to check for consistency.[6] [7] While there were several inconsistencies, despite a significant level of subjectivity in coding, the resulting index showed the expected trends and were largely consistent with Deakin.

Countries are not consistent in their use of these individual policies and as such, the highest correlation between policy variables is only .64 (between imposing constraints on dismissal and requiring the notification of third parties prior to dismissal) The second highest correlation is .61 (between having priority rules (normally based on seniority and family situation) for who is laid off first during redundancy selections and having priority rules for rehiring following layoffs). The correlations are weak because the strong use of one method of employment protection does not require the others; in fact, they are often substitutes rather than compliments. For example, legally mandated notice periods and legally mandated redundancy compensation are negatively correlated (-.30), as they are clear substitutes. The original Deakin index is additive and is illustrated in the top panel of figure 2. The additive index gives each variable equal weight (all on 0 to 1 scales) even though severance pay, for example, might be more important than the penalties for not complying with dismissal procedure. As such, another version of the index was created using principal component analysis (PCA), which uses a linear combination of variance to extract the maximum total variance from the variables, and principal factor analysis (PFA), which only explains the common variance of the variables. Cronbach's alpha is strong for the 9 measures, at .74, suggesting that a factored index could be appropriate. Using principal component analysis, the first factor loaded most of the indicators variables positively and strongly, with the exception of notice before dismissal, which was captured by the second factor. A scree plot indicates that the first two factors explain 43 and 22% of the variance and the third factor does not explain significant additional variance. Factor loadings are illustrated in table 2. Notably, the underlying indices are really ordinal–the distance between their values is uncertain, and factor analysis is

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[5]The problem may be complicated by the fact that a strong work ethic could make the unemployed more unhappy (Stutzer and Lalive, 2002, 2004) and at the same time impact policy.

[6]For France I used Deakin's codings rather than mine.

[7]There were several inconsistencies. For example, the variable measuring the "minimum qualifying period of service for normal case of unjust dismissal" is a 0 to 1 scale where 3 years or more equals 0 and 0 months equals 1. For this indicator I assigned a score of .83 while Deakin assigned 1. Deakin reports "under the 1973 law on unfair dismissal (law of 13.7.1973), all employees are entitled to basic procedural protection in relation to dismissal, although certain remedies are reserved for those with over 2 years service: now, Code du travail, art. L. 122-14-4. Prior to 1973, under the general law of abuse of right, no qualifying period applied." Deakin's coding reflects "all employees are entitled." In contrast, the ILO's documentation reads "If the length of service is less than six months the notice period applied will be governed by local custom and the practice in the occupation. This 6 month period applies for all protections like severance pay and notice." I made the assumption that if a worker is not entitled to notice and can be easily fired in his first six months of employment, in practice, he will not have recourse to seek unjust dismissal protection in this period, and thus assigned a score of .833. For the variable measuring whether reinstatement might be a normal remedy for unfair dismissal, Deakin reports, "compensation was the remedy under the pre-1973 law of abuse of right. Under the 1973 law (law of 13.7.1973), reinstatement is one of the possible remedies, along with compensation, but reinstatements are rarely made, in part because the law expressly provides that the employer can refuse it (Code du travail, art. L. 122-14-4)." The ILO reports that if procedure was not followed, but the employee was rightfully dismissed "the court will order the employer to comply with the prescribed procedures and award the employee compensation which must not exceed one month's wages" whereas "if the grounds for the dismissal are not well-founded and valid, the court may propose the reinstatement of the employee in the undertaking...if either party rejects such a proposal, the court will award compensation to the employee..." Thus Deakin interprets reinstatement and compensation to be alternative remedies (score is .5), while I judged compensation to be the primary solution (.3).

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Variable	Factor1	Factor2
mandated notice period	-0.0601	0.6506
mandated redundancy compensation	0.4706	0.0942
qualifying period for unjust dismissal	0.5716	0.3405
procedural constraints on dismissal	0.4207	0.7733
substantive constraints on dismissal	0.8654	-0.1098
reinstatement after unfair dismissal	0.8664	0.1343
notify 3rd parties of dismissal	0.6420	-0.3061
priority rules for redundancy selection	0.5123	-0.5734
priority rules for rehire	0.5060	-0.1112

Table 2: Loadings from principal component analysis

somewhat inappropriate. The first factor (our potential index) is illustrated in the second panel of figure 2. It is notable that despite the faults with both methods, the two indices rank countries similarly and show similar trends, as illustrated in figure 2.The following analyses use the original additive index since the factor index loses information on notice period, an important approach to employment protection.
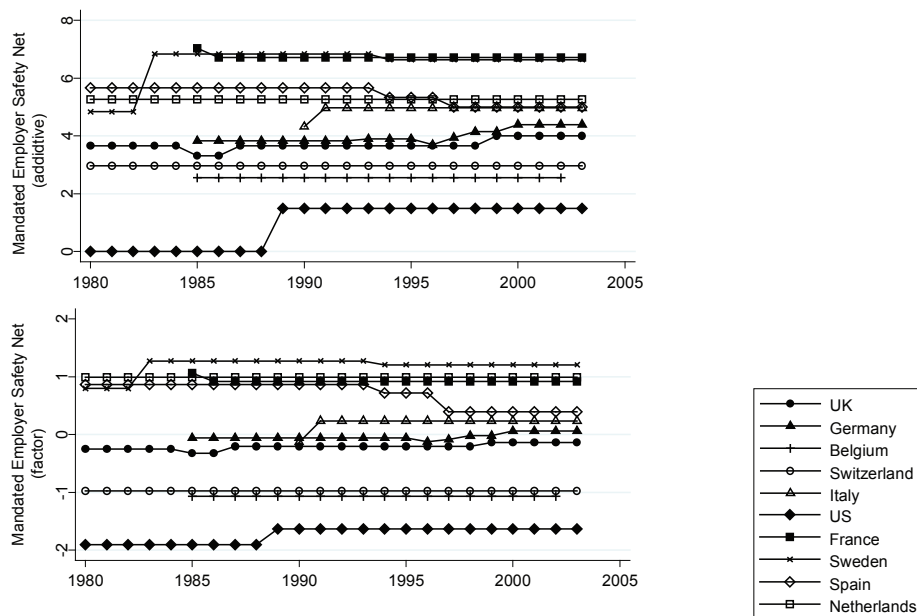
Figure 2: The additive and factored indices

The second index measures the extent of the safety net. Three basic concepts were tested as inputs into the index: active labor market program (ALMP) expenditures, unemployment insurance expenditures, and benefit replacement rates (defined as the average of the gross unemployment benefit replacement rates for two earnings levels, three family situations and three durations of unemployment.)[8] Several combinations and transformations of the expenditure data were tested. Indices using ALMP expenditures *per capita* resulted in strong time trend, as most countries increased active labor market expenditures. Countries were more consistent in ALMP expenditures *as a percent of GDP* and were even more consistent in expenditures *per unemployed person*. Ultimately ALMP expenditures and unemployment insurance were taken in PPP dollars per unemployed person and standardized by GDP.

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[8]These data are from the OECD Social Expenditure Database and the OECD data on benefits and wages

Cronbach's alpha for these three measures was .7427 and a scree plot suggested that more than one factor would not capture additional significant variance. Using principal component analysis, 68% of both the common and unique variance between the 3 variables was explained using just one factor, with loadings of .518 for unemployment insurance, .660 for active labor market expenditures, and .545 for benefit replacement rates. The resulting index is illustrated in figure 3. Notably Belgium's safety net explodes during the 1980's, up to 1990, and then it recedes. Over this period Belgian per capita expenditures on unemployment insurance and ALMPs increased steadily in PPP dollars per capita, and remained constant as a percent of GDP but at the same time Belgian unemployment plummeted from 11 to 7%. This drop drives the trend. Where the extra funding per unemployed person went is a mystery since benefit replacement rates remained constant. There are 2 possibilities: ALMP's might have been expanded their clientele or perhaps during the 1990's recession, some individuals reported themselves as not in the labor force to the labor force survey despite claiming unemployment benefits. The dramatic trend for the Netherlands is largely due to growth in ALMP expenditures. In 1980 active labor market expenditures were only $58 per capita. By 2001 they were $388 per capita. As a percent of GDP ALMP's doubled from .6% to 1.3% of GDP. Much of this growth was in youth labor subsidies. The 2001 UK blip in the chart is due to the fact that the UK expenditures went from $85 PPP dollars to 139 and then back to 84 between 2000 and 2002, despite relatively constant unemployment rates and benefit replacement rates (according to the OECD social expenditure database). Not since 1996, when unemployment was much higher, had they spent so much on unemployment insurance.

There are some theoretical concerns with this index. First, the measure should capture benefits provided independent of the employer although these programs are partially collected through taxes on the employer (non-compensation costs). Also, research finds that unemployment insurance can increase unemployment rates and that these effects on unemployment rates can be *negated* by ALMPs. As such, one might argue that the two types of benefits should be considered separately. However, from a flexicurity perspective both policies are labor market protections that are independent of the employer-employee relationship. The two types of expenditures also measure similar policy approaches, as reflected in their high correlations of .42 and .60 between the ALMP and unemployment insurance expenditures as a percent of GDP and per capita, respectively.
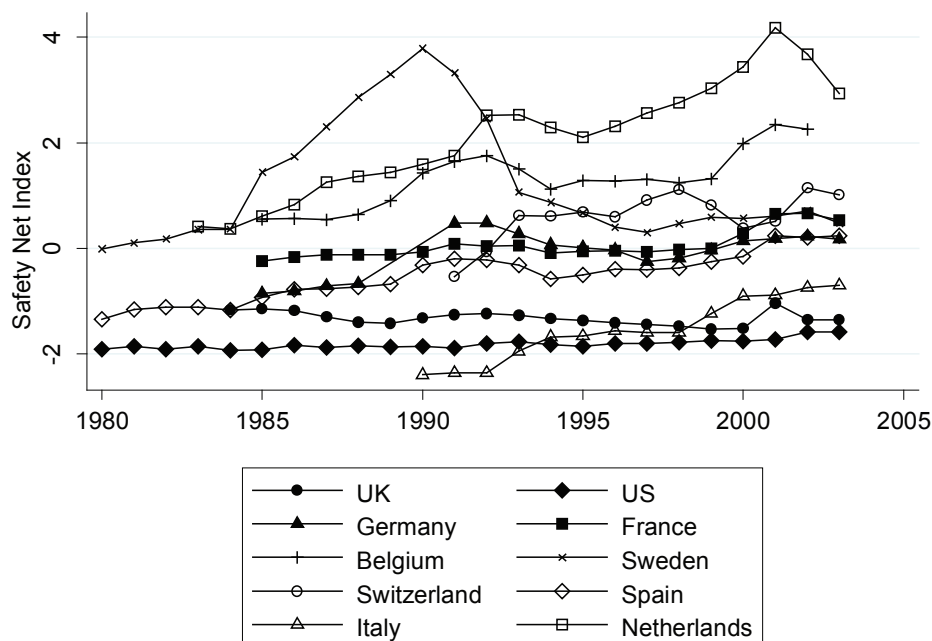
Figure 3: Best Safety Net Index

Figure 4 shows the scatter plot between the two indices over time. Countries do not see these two policy approaches as substitutes, but rather as compliments. Those countries that have strong mandated worker protections tend to also fund safety nets (Netherlands) and those that provide weak safety nets offer little mandated protection

(US). The lower right hand quadrant would reflect the "flexicurity" approach and includes only Belgium Switzerland towards the end of the analysis. The most perverse approach to labor protections would be the upper left quadrant of the plot, or a regime of strong EPL and weak safety nets. Italy is the only country regularly in this policy space. Spain was in this quadrant in the post-Franco era but moved towards a more mainstream European approach in recent years. Perhaps most notable in these plots is that countries do not cluster in the oft-used categories of "Nordic," "Continental," and "Mediterranean."
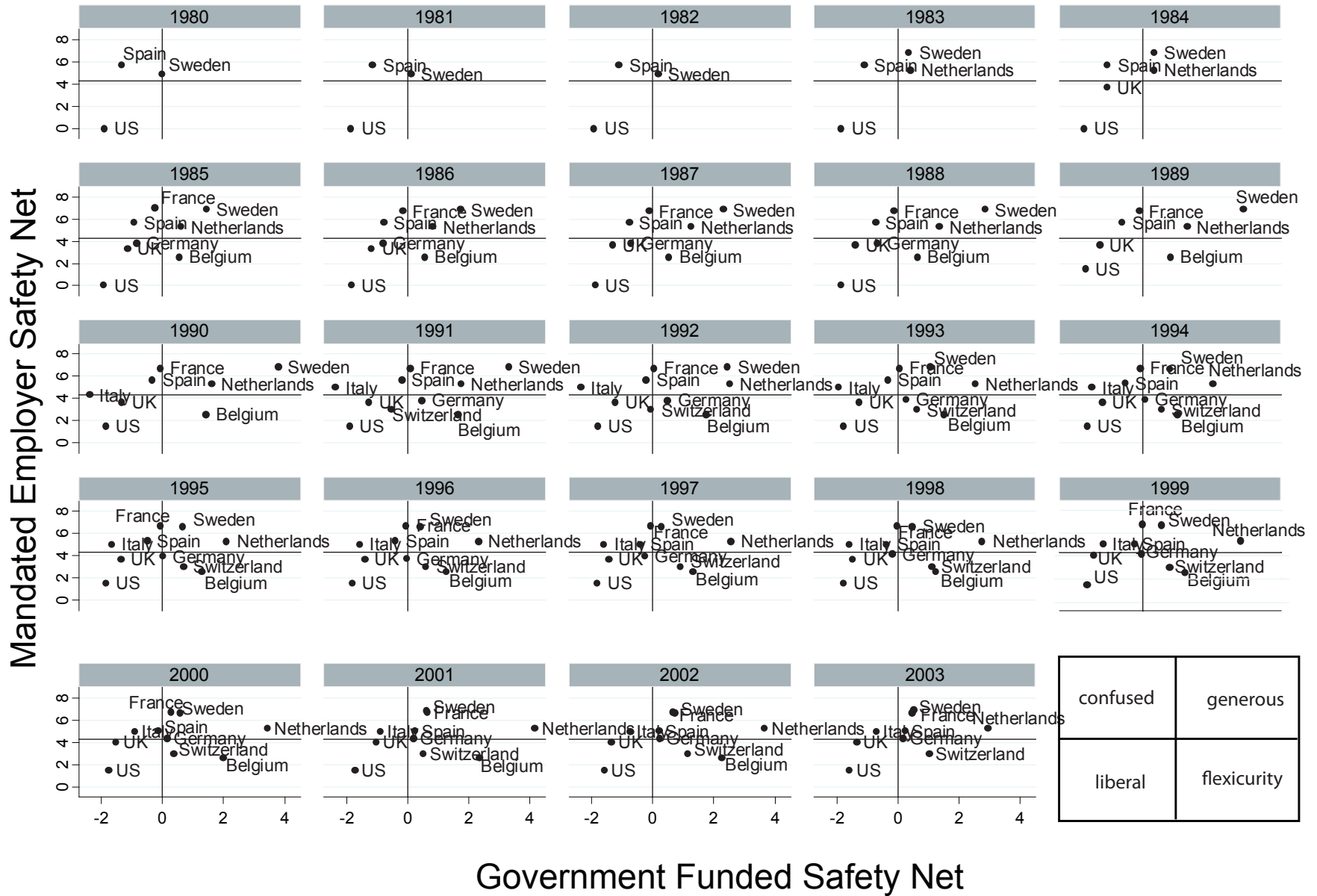
Figure 4: Comparing the two indices

As discussed in the literature review, analyses usually consider other institutional factors that might compliment or mitigate policy's influence on unemployment including measures of union control, the tax wedge, and economic shocks. Economic shocks are controlled because during a downturn more individuals will be fired and are used in interaction with policy variables because those countries with weak EPL are quicker to hire and fire during boom and bust periods. Union membership or coverage is controlled because unions are presumed to bargain for higher wages, thus decreasing employment. Sometimes the level of union negotiation is controlled, since higher industry-wide negotiations consider employment in their bargaining more than firm-level negotiations do. The tax wedge is considered because a higher labor tax decreases the incentive to work.[9] Data come from the OECD and the US Bureau of Labor Statistics (the tax wedge), and the ILO KILM (change in GDP). GDP shows surprising diversity across countries with the US having stronger growth in the 1980's than Europe, and the early 90's recessions hitting Europe more than the US. Since 1995, the economic cycles have been more consistent across countries. Union density declined steadily decreasing in all countries over the period while the tax wedge was stable in most countries, but steadily increased in Belgium and increasing in the UK during the Labour years.

5 Unemployment

5.1 Data

Micro level data for the analysis of employment outcomes was taken from the Luxembourg Income Study. The LIS data offers a richness in terms of the number of countries and years at a cost of the depth in data. As repeated cross sectional data, outcome data includes an individual's current labor market status (unemployed, working, or out of labor market); of course duration data to examine the hazard of transitioning between states would be preferable. Individual-level predictors of employment outcomes include the individual's age, gender, marital status, immigrant status, and whether they are disabled. In addition, education was recoded to indicate whether the individual had no formal education,basic education, 2 levels of secondary, and two levels of tertiary education. Education may be most useful as a within country predictor, as some levels of education are not comparable across countries. Prior analyses of international testing, have shown that the average high school student in Sweden has the same math skills as a community college student in the US (CITE!!!). Occupational data was also retained and recoded to be internationally comparable. The micro data were complimented with the macro variables including the safety net index, the mandated worker protection index, annual percent GDP growth, union density, and tax wedges.

Table 3 illustrates the available valid cases across countries and years as additional variables are added to the model (moving right along the table). There are several coding problems with the data. For example, in 1985 and 1988 the Belgium data is missing many respondents' nationality, likely because the data included 2 codes for missing (perhaps one was not truly missing–but mislabeled); again looking in table 4 it is noticeable that Belgium has to many respondents classified as non-natives in 1997, perhaps also a function of having 2 missing categories. In France in 1989 there are also many non-responses for nationality and in Germany people were coded based on ethnicity rather than nationality, making the data somewhat inconsistent with countries using a more citizenship-oriented question. In addition, despite consistent coding and questions over time, the German data shows more natives over time– the opposite of what is anticipated. Finally, Germany, the one country consistently in the upper left hand quadrant of the plots of the two indices, has no national origin data. In sum, the nationality variable suffers severe issues with respect to data quality. In addition, occupation is essentially unusable, as many countries' labor surveys did not code occupation for the unemployed, thus rendering the variable unusable for the cross country analysis. Occupation is missing for 78, 19, 99, 91, 98, 27, 95, 94, 68, and 34% of the unemployed in Belgium, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, UK and US (across years). As such, a model predicting employment status based on age, gender, and education (as well as the macro variables, while very parsimonious, should be the baseline model, with few missing cases and a total of 1.1 million cases.

Looking at table 4 which illustrates the descriptive statistics for the LIS data, it is noticeable that the LIS-calculated

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[9]Other institutional variables tested in analyses include: hourly compensation of production workers, life expectancy, GDP per capita, and the average age of retirement.

unemployment rates do not exactly match the ILO's KILM unemployment rates. The best matches are for the UK and US (consistently under 1% off–likely due to the large sample sizes) while the worst matches were Sweden (where the LIS data over-estimates unemployment) and Italy, both in 1987. In Italy this is due to sample size; only 34 respondents reported themselves as unemployed in Italy in 1987 in the LIS. Other irregularities include a dramatic drop in the percent married in Sweden in 2000. This occurs because the "not married" category was split to create new categories for "divorced" and "widowed." Recodes consider both as "not married," though presumably in prior years, some divorced and widowed individuals considered themselves married. Belgium 1997 shows few disabled because a simple "yes"response was changed to read "yes disabled and receiving a disability benefit." Presumably, not all disabled people receive disability benefits, and so when the question changed, fewer individuals responded "yes." In addition, mean age is slightly biased upward for Germany 1983 because it was recoded from 14 categories to reflect the median age in each category. The data was truncated to exclude the oldest category (65+), to avoid upward bias. Nevertheless, within the remaining categories there are likely more individuals at the beginning of the intervals than the end (due to population growth and mortality), meaning that the average German in 1983 is coded with a slightly higher age. In this table the US does not show the expected upward trend in those having second secondary education (a high school diploma) and most of the trend was among those above that level–moving from stopping with just a high school diploma, to pursuing tertiary education. Other inexplicable irregularities include many married individuals in Germany in 1983 and many disabled individuals in Spain in 1995.

5.2 Model and findings

For our data, observations within country-years are likely to be correlated (as individuals seek jobs in the same labor market), and therefore violate the assumptions of an OLS approach. With only 48 country-years there is significantly less information than an OLS regression (counting over 1 million individual people as independent observations) would suggest, and estimation would violate OLS's iid assumption. There are two commonly used methods to deal with this problem– multilevel or hierarchical analysis (or in our case better yet- a crossed effects model as individuals are embedded in country-years and possibly countries are embedded in years, and years are embedded in countries). The other way is to simply cluster errors by country-year. Here, clustering is used (which estimates the model using OLS (for the slopes) but uses the linearization/Huber/White/sandwich (robust) estimates of variance (standard errors)). This correction allows the off-diagonal elements in the error term to not be equal to zero, thus allowing correlation among observations within a cluster. This allows individuals within country-years to be correlated, but assumes that individuals in different country-years are not (i.e. the individual's chance of unemployment in Germany in 1989 is uncorrelated with another individual's chance of unemployment in Germany in 1990). The variance estimates are robust to any type of correlation within the observations of each country-year. Each country-year is treated as a super-observation for its contribution to the variance estimate. Using multilevel modeling the error term would be explicitly modeled, allowing separate estimates for each country-year, and allowing better estimation for unbalanced data. In addition a multilevel model would be preferable if micro level variables are correlated with the macro level variables (Gelman and Hill, 2006)–but this is not anticipated to be a problem here. In addition, if the data set were somewhat smaller, the clustered standard errors might be downward biased compared to the multilevel model (Clarke, 2009). On the other hand, by not using clustering, I did not have to make assumptions about the distributions of multiple error terms for each level of the equation (individual, country, year). For a detailed comparison of the multilevel and clustered error model approach, see Primo et al. (2007).

Regressions predicting individuals' employment status (among those in the labor force) find the anticipated effects for individual level controls. Older people are less likely to be unemployed as are men, married individuals, and those who are not disabled. These results hold across all analyses. The analyses with disabled and marital status included are run separately, and illustrated in the second table, because including these variables means that all observations from the UK 1986, Switzerland 2000 and 2002, Sweden 1992, Spain 1980 and 1990, Italy 1986 and 1987, Germany 1983 and 1989, France 1989, and Belgium 1985 and 1988. were lost. Nevertheless, even limiting the sample, including these two variables improved the *every* model run according to likelihood ratio tests of the nested models with P values of .000. The first table, table 5, tested several permutations of the individual level controls–most importantly testing whether using country mean values and individual deviations from those means (the country and centered variations) improved the model–ideally overcoming the limitation

	total cases	employment status	+ age	+ gender	+ education level	+ marital status	+ disability	+ origins
Belgium								
1985	12,229	12,060	12,060	12,048	11,705	11,702	0	0
1988	7,287	6,979	6,979	6,964	6,577	6,473	0	0
1992	7,115	7,024	7,024	7,024	6,656	6,628	6,628	0
1995	4,796	4,745	4,745	4,745	4,602	4,602	4,575	4,575
1997	8,167	8,119	8,119	8,119	6,584	6,574	6,574	6,574
2000	4,399	4,399	4,399	4,399	4,077	4,077	4,025	4,025
France								
1989	15,875	15,651	15,651	15,651	15,574	15,568	0	0
1994	18,586	18,582	18,582	18,582	16,368	16,368	14,066	14,066
2000	16,490	16,490	16,490	16,490	15,024	15,024	15,024	15,024
Germany								
1983	57,111	57,111	57,111	57,111	0	0	0	0
1984	9,912	9,639	9,639	9,639	9,574	9,574	9,574	9,574
1989	8,202	8,045	8,045	8,045	7,949	7,949	0	0
1994	11,381	11,150	11,150	11,150	10,972	10,972	10,972	10,972
2000	19,438	18,224	18,224	18,224	17,295	17,295	17,295	17,295
Italy								
1986	17,125	17,120	17,120	17,120	17,079	0	0	0
1987	17,414	17,408	17,408	17,408	10,693	0	0	0
1989	17,713	17,713	17,713	17,713	17,713	17,713	17,713	0
1991	17,377	17,377	17,377	17,377	17,377	17,377	17,377	17,377
1993	16,413	16,413	16,413	16,413	16,413	16,413	16,413	0
1995	16,367	16,367	16,367	16,367	16,367	16,367	16,367	0
1998	14,393	14,393	14,393	14,393	14,393	14,393	14,393	0
2000	15,087	15,083	15,083	15,083	15,083	15,083	15,083	0
Netherlands								
1987	7,073	6,871	6,871	6,871	6,871	6,871	6,871	0
1991	7,008	6,953	6,953	6,953	6,953	6,953	6,953	0
1994	8,563	7,989	7,989	7,989	7,779	7,779	7,776	0
1999	8,166	7,422	7,422	7,422	7,282	7,282	7,281	0
Spain								
1980	52,376	51,483	51,483	51,483	18,995	18,995	0	0
1990	45,419	44,477	44,477	44,477	44,477	44,477	0	0
1995	12,397	12,138	12,138	12,138	12,005	12,003	11,856	11,856
2000	9,402	9,355	9,355	9,355	9,209	9,209	9,167	9,167
Sweden								
1992	19,056	19,056	19,056	19,056	18,848	18,848	0	0
1995	20,202	20,202	20,202	20,202	20,004	20,004	20,004	20,004
2000	20,315	20,315	20,315	20,315	20,101	20,101	19,868	19,868
Switzerland								
1992	10,354	9,889	9,889	9,882	4,377	4,377	4,377	4,377
2000	6,142	6,101	6,101	6,101	6,083	6,083	0	0
2002	6,085	6,033	6,033	6,033	5,995	5,995	0	0
UK								
1986	11,436	11,436	11,436	11,436	10,939	10,939	0	0
1991	10,663	10,574	10,574	10,574	10,089	10,089	10,089	0
1994	38,259	36,928	36,928	36,928	36,797	36,797	36,797	36,797
1995	10,117	10,045	10,045	10,045	9,422	9,422	9,422	0
1999	36,144	36,144	36,144	36,144	34,103	34,103	34,103	34,103
2004	40,027	40,027	40,027	40,027	37,494	37,494	37,494	37,494
US								
1986	20,866	20,866	20,866	20,866	20,866	20,866	20,866	0
1991	98,243	98,243	98,243	98,243	98,243	98,243	98,243	98,243
1994	103,628	103,628	103,628	103,628	103,628	103,628	103,628	0
1997	83,262	83,262	83,262	83,262	83,262	83,262	83,262	0
2000	82,371	82,371	82,371	82,371	82,371	82,371	81,983	81,983
2004	133,310	133,310	133,310	133,310	133,310	133,310	132,567	132,567

Table 3: Valid cases

	% unemployed	% men	% disabled	% married	% natives	average age	% 2nd 2ndary or more
Belgium							
1985	11.9	49.6	.	67.5	93.4	37.9	50.7
1988	12.1	49.5	.	67.6	92.1	38.3	51.5
1992	10.4	49.6	4.2	66.6	.	37.9	53.2
1995	11.9	48.2	12.0	61.5	92.1	38.5	61.5
1997	12.2	49.8	0.5	63.5	71.7	39.3	60.2
2000	8.2	49.6	10.8	61.5	89.1	39.1	69.9
France							
1989	10.6	49.1	.	62.0	93.7	38.0	17.9
1994	11.6	48.9	4.2	58.1	76.1	38.5	29.0
2000	9.7	48.8	3.6	55.1	92.3	39.2	43.4
Germany							
1983	2.8	48.3	.	83.3	.	45.1	.
1984	7.6	50.4	3.3	66.9	72.5	37.5	27.1
1989	5.5	50.9	.	65.5	71.0	37.9	28.5
1994	11.2	49.7	8.4	65.6	81.0	38.3	32.3
2000	8.8	49.3	12.3	61.4	89.7	39.9	33.0
Italy							
1986	13.4	49.5	.	.	.	38.4	23.4
1987	0.4	49.6	2.2	.	.	38.1	41.9
1989	14.0	49.5	2.4	62.9	.	38.2	40.3
1991	14.3	49.3	2.4	60.5	.	38.5	38.7
1993	17.2	49.3	2.3	60.3	.	38.9	37.2
1995	17.1	49.4	2.3	60.8	.	39.0	42.4
1998	17.3	49.6	2.1	61.1	.	39.5	48.2
2000	13.8	50.1	1.9	60.3	.	40.1	47.5
Netherlands							
1987	13.7	48.6	3.3	64.8	.	36.7	23.4
1991	2.9	48.8	4.4	65.9	.	37.7	51.0
1994	4.8	49.3	4.7	62.7	.	38.1	56.0
1999	8.3	49.3	26.8	59.5	.	39.1	73.2
Spain							
1980	12.2	49.4	.	64.6	.	38.3	9.3
1990	15.8	49.5	.	60.6	.	38.3	23.2
1995	21.5	49.8	17.1	58.5	97.3	37.4	32.0
2000	13.9	49.9	9.4	58.0	97.3	37.7	36.1
Sweden							
1992	12.1	50.4	.	75.2	95.8	41.1	33.7
1995	14.5	50.0	0.6	73.5	94.3	40.3	40.0
2000	13.3	50.5	6.7	49.1	94.8	40.1	70.0
Switzerland							
1992	3.7	50.4	0.6	60.5	82.3	38.7	30.6
2000	1.6	48.7	.	63.2	87.8	39.6	28.0
2002	1.8	48.2	.	64.4	87.3	40.6	29.0
UK							
1986	6.9	49.0	.	67.4	.	38.1	26.3
1991	8.0	49.0	2.6	62.6	.	38.4	30.4
1994	10.4	48.1	5.6	60.0	94.5	39.2	36.7
1995	8.3	47.6	5.7	60.4	.	39.1	35.6
1999	7.5	47.9	15.4	56.1	93.7	39.9	66.1
2004	5.9	47.6	15.3	53.5	92.0	40.4	70.7
US							
1986	6.5	48.6	3.2	57.8	.	36.6	82.5
1991	4.7	48.5	7.0	58.3	73.7	37.3	85.6
1994	5.9	48.6	7.4	52.5	.	37.3	80.1
1997	5.0	48.4	7.4	59.5	.	38.2	80.3
2000	7.1	48.8	7.7	56.3	84.4	38.6	80.7
2004	8.3	48.2	7.9	56.6	85.5	38.5	81.6

Table 4: Descriptive statistics

of being unable to do a multilevel model. The only model in which the country mean plays a significant role is the country's mean education level for those ages 20-24, where a higher average level of education means there is less youth unemployment. This makes sense, since in each country the education system works on a different time scale. In Germany, where students finish their educations very late, one would expect that few young people are in the labor market, and those that are work in an apprenticeship or in employment provided as part of their training. Given that centering was unnecessary, the second set of analyses shown in table 6 use simple individual level variable, and retain the categorical versions of the education variable.

The second part of each table focuses on the institutional level variables. The first two entries are our index, with "mandatory index" indicating the Deakin-index of dismissal regulations and "safety index," indicating the safety net index (benefit replacement rates, unemployment insurance, and active labor market programmes. For the mandatory index, as the literature would anticipate, labor protections increase the probability that young workers are unemployed (both 16-19 and 20-24 year-olds) and *slightly* increase the probability that older workers are also unemployed. This is what would be anticipated given that employers are more reluctant to hire and fire workers in a strictly regulated environment. The results for the safety net index are more interesting. Contrary to prior evidence, they seem to actually *decrease* the probability that young workers are unemployed, but strongly increase the likelihood that older workers are unemployed. One possible reason for this trend is that under a generous unemployment insurance system older workers have paid in and qualify for full benefits. Furthermore, they might expect to bridge those benefits into retirement, creating an incentive to retire early. In contrast, younger workers are less likely to qualify for unemployment insurance benefits, having spent less time in the labor market. They are, however, more likely to benefit from new expenditures on active labor market programs–as younger workers are more willing to retrain. As such, the package of the two types of policies have opposing effects on age dynamics in the labor market. Safety nets push the young into the labor market and pull out the old, while dismissal protections keep those at the peaks of their careers in, shutting out the young. The institutional controls also have some interesting effects. The strongest results show that high tax wedges increase the chance young workers (and also women to some extent) are unemployed. It is difficult to parse out a full story here, since the tax wedge influences the incentive to go to work, but also indicates, to some extent, the services that the state provides though those tax dollars, which may have not been captured by the safety net index. Finally, it also looks like unions increase unemployment among older men and that economic downturns comparatively benefit women–perhaps because they are concentrated in the service sector (versus manufacturing) and are thus likely to be negatively impacted by downturns.

Looking at figure 5, it seems that both policies have some of their largest impacts on youth employment. Using the equation in the 9th column of table 5 (age 20-24, using the categorical versions of education) and constructing the probability of unemployment (odds divided by 1-odds) for a 22 year old male with tertiary education in a country with 22% union density, a 24% tax wedge, and 3% GDP growth, at least in terms of the youth's probability of employment, the two policy approaches are decidedly compliments. The strict dismissal protection increases the odds the youth is unemployed (favoring those already in employment.) However, generous benefits and active labor market policies more than compensate for that loss– as older workers are more likely to qualify for the unemployment insurance (thus making them more willing to leave their jobs) and generous active labor market policies favor the young. These two labor protections, at least from the perspective of the youth, work in concert rather than in competition.

	all cases			ages 16-19			ages 20-24			ages 25-54			age 55+		
male	-.1979***	-.2066***	-.2040***	.0768***	.0805***	.0740	-.0821	-.0879	-.0961	-.2864***	-.2960***	-.2938***	-.0281	-.0621	-.0614
age		-.0327***	-.0319***		-.2095***	-.1800***		-.1262***	-.1395***		-.0307***	-.0303***		.0944***	.0941***
education			-.3535***			-.1820***			-.2423***			-.3376***			-.2433***
country age	-.0027			.0745			-.0082			-.0473			0.0439		
country education	-.2036			-.4548			-.7186***			-.1573			0.1076		
centered age	-.0329***			-.2102***			-.1322**			-.0311***			.0935***		
centered education	-.3739***			-.1746***			-.2023***			-0.3582***			-.2774***		
compulsory/primary			-.5350***			0.1408			0.0813			-.4894***			-0.3150**
first secondary			-.6328***			0.0675			-.0119			-.6015***			-.5824***
second secondary			-1.1177***			-.2318			-.3427			-1.0873***			-0.8179***
tertiary			-1.5410***			-0.5943**			-.9604***			-1.4479***			-.9236***
university +			-1.7617***			0.5440*			-0.5265			-1.7001***			-1.2850***
mandatory index	0.0585	0.0099	0.0065	0.0373	.2013**	.2123**	-.0353	.1679**	.1542**	0.0539	-0.0124	-0.0187	.1742**	0.0457	0.0474
safety index	-0.0556	-0.0428	-.0373	-.3611***	-.3690***	-.3723***	-.2806***	-.3242***	-.3015***	0.0126	0.0225	0.02553	.2963***	.3042***	.3003***
union density	0.0041	0.0059*	.0051	.0028	0.0077	0.0059	.0029	0.0036	0.0011	0.001	0.0017	0.001	0.0034	.0065**	.0067**
tax wedge	.0345*	.0347***	.0372**	.0957***	.0800***	.0842***	.0736***	.0643**	.0694***	0.0181	0.0204	0.0233	0.0107	0.0184	0.0163
gdp growth	0.0515	.0610*	.0615*	.0735	.0959	.0881	.0408	.0359	.0352	.0463	.0545***	.0552**	.1167***	.1526***	.1536***

	men			women		
age		-.0323***	-.0313***		-.0329***	-.0326***
education			-.3389***			-.3775***
country age	.0217			-0.026		
country education	-.0674			-.4030***		
centered age	-.0323***			-.0329***		
centered education	-.3755***			-.3750***		
compulsory/primary			-.6729***			-0.3596
first secondary			-.6960***			-.6092**
second secondary			-1.1467***			-1.1175***
tertiary			-1.5399***			-1.5674***
university +			-1.8288***			-1.7340***
mandatory index	.1038	.00844	.0072	.0031	.013	.0064
safety index	-.1335*	-.1061	-.1001	0.0176	0.0166	0.018
union density	.0052	.0087**	.0077*	.002	.002	.0017
tax wedge	.0125	.0132	.0156	.0601***	.0596***	.0621***
gdp growth	.0335	.0508	.0519	.0739*	.0728*	.0727*

note that the educational categories are tested as significant from less than compulsory education–not as different from each other.

note that coefficients, not odds, are reported here.

* ≤ .05 P

** ≤ .01 P

*** ≤ .001 P

Table 5: Logit models predicting unemployment, robust s.e. & country-year clustering

	all cases			ages 16-19			ages 20-24			ages 25-54			age 55+		
male	-.1351**	-.1165*	-.1164*	.1145	.1182	.1195	-.0322	-.0546	-.05367	-.2269***	-.2047***	-.2063***	.018	.0868	.0900
age	-.0318***	-.0178***	-.0209***	-.1669***	-.1710***	-.1730***	-.1302***	-.1160***	-.1173***	-.0289***	-.0190***	-.0218***	.0840**	.0830*	.0769*
compulsory/primary	-.4840**	-.4079*	-.4499**	.5274146	.5258	.5029	.3459	.3504	.3387	-.4479***	-.3825***	-.4120***	-.2872*	-.285*	-.4066**
first secondary	-.5987***	-0.5641***	-.5875***	.44302	.4482	.4274	.3573	.3454	.3404	-.5792***	-.5521***	-.5703***	-.6603***	-.6671***	-.7333***
second secondary	-1.1635***	-1.1307***	-1.1611***	.104767	.1093	.0836	-.06639	-.0903	-.0999	-1.1446***	-1.1380***	-1.1623***	-.9284***	-.9322	-1.026***
tertiary	-1.5869***	-1.5495***	-1.5707***	-.2697947	-.2592	-.2740	-.7013*	-.7421*	-.7406*	-1.5000***	-1.4894***	-1.507***	-1.005***	-1.0124***	-1.0816***
university +	-1.8386***	-1.7698***	-1.7632***	.7051	.7123	.7172	-0.414	-.4709	-.4610	-1.7682	-1.7427***	-1.7321***	-1.3487***	-1.344***	-1.3775***
married		-.7787***	-.7462***		.2518	.2541		-.3250***	-.3192***		-.7386***	-.7069***		-.4756***	-.4291***
disability			1.174***			.8843***			.8234***			1.1714***			1.0954***
mandatory index	.0295	.0288	.0289	.3479***	.3505***	.3467***	.1949*	.1790*	.1782*	-.0038	-.0074	-.0063	.0665	.0737	.0616*
safety index	-.0973	-.0884*	-.1050**	-.5146***	-.5148***	-.5199***	-.3737***	-.3649***	-.3693***	-.0157	-.0071	-.0254	.3086***	.3087***	.2916***
union density	.0055	.0062*	.0066*	-.0023	-.0024	-.0019	-.0005	.0001	.0004	.002	.0027	.0032	.0062**	.0066**	.0072*
tax wedge	.0380***	.03771***	.0403**	.0686***	.0685***	.0699***	.0709**	.0707**	.0722**	.0254*	.0253*	.0281*	.0085	.0078	.0096
gdp growth	.0585	.0498	.0503	.1211	.1215	.1218	.0424	.0415	.0417	.0436	.0348	.03633	.0803*	.0766	.0686

	men			women		
age	-.0314***	-.0107**	-.0138***	-.0324***	-.0240***	-.0272***
compulsory/primary	-.5711***	-.4627***	-.5009***	-.4226	-.3781	-.4261
first secondary	-.6215***	-.5681***	-.5857***	-.6418*	-.6254*	-.6587*
second secondary	-1.146***	-1.1111***	-1.1355***	-1.2446***	-1.220***	-1.2611***
tertiary	-1.5375***	-1.4905***	-1.5033***	-1.6996***	-1.6753***	-1.7092***
university +	-1.8580***	-1.7742***	-1.7573	-1.8916***	-1.8444***	-1.8523***
married		-1.030***	-.9982***		-.5429***	-.5082***
disability			1.1468***			1.2176***
mandatory index	.0386	.0372	.0362	.0158	.0157	.0166
safety index	-.1804***	-.1768***	-.1929***	-0.0206	-.0106	-.0282
union density	.0082**	.0084**	.0091***	.0024	.0032	.0033
tax wedge	.0165	.0170	.019	.0641***	.0635***	.0673***
gdp growth	.0547*	.0431	.0444	.0629	.0572	.0566

note that the educational categories are tested as significant from less than compulsory education–not as different from each other.
note that any differences between the fist column of each category in this table and in the last table, results from limiting the sample to those cases with valid values for marital status and disability.
* ≤ .05 P
** ≤ .01 P
*** ≤ .001 P

Table 6: Logit models predicting unemployment, robust s.e. & country-year clustering
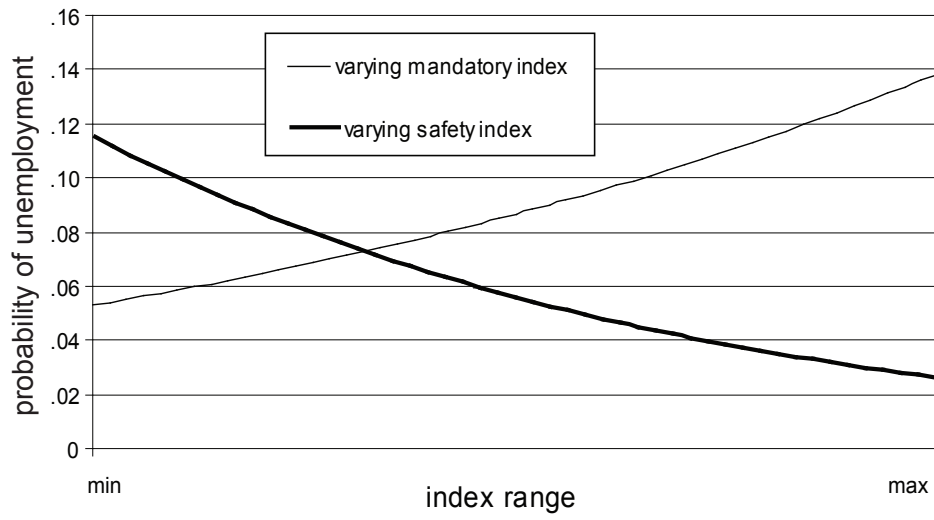
Figure 5: Conditional plot, varying the two safety net indices for youths age 20-24 (22 y.o. male w/ tertiary education in a country w/ 22% union density 24% tax wedge, & 3% gdp growth)

	1981-84	1989-93	1994-99	2000-04	2005-07
Belgium	1145	2792		1912	
France	1200	1002		1615	*1001*
Germany		3437	*2026*	2036	*2064*
Italy	1348	2018		2000	*1012*
Netherlands	1221	1017		1003	*1050*
Spain	2303	2637/*1510*	*1211*	1200/*1209*	*1200*
Sweden	954	1047		*1009*	*1003*
Switzerland		1400	*1212*		*1241*
UK	1167	1484		1000	*1041*
USA	2325	1839		*1200*	*1249*

Table 7: Number of cases (***Bold Face*** *indicates WVS, other entries are EVS*)

6 Happiness

6.1 Data

The World Values Survey and the European Values Surveys offer an excellent opportunity to look at attitudinal questions. The WVS/EVS focuses on changing values and their impact on social and political life. They collect data in 97 societies and have collected data since 1981. While the data offers great depth in its questions related to social values, one negative aspect of working with the data for analysis across years and countries is inconsistency in the data. While a few variables of interest such as the country, year, age, and age ended education have no missing values, most variables have some observations missing randomly across countries and years. On the other hand a few variables of interest are missing entire country-years. Some variables are missing systematically by group–for example the retired, students, housewives, and unemployed were likely to not report their occupations. Looking at the pattern of missing values, there were no cases with everything missing, although there were a few cases with only marital status, gender, and an individual's feelings about work security and the importance of teaching children a work ethic. Ninety-seven percent of cases had less than 4 missing variables. I used imputation by chained equations to impute missing observations. The predictions include noise and are correlated to match the original data. For more information see Royston (2005).

There are two outcome variables of interest: a happiness scale ranging from 1 to 4 (very happy to not at all happy) and a life satisfaction scale ranging from 1 (dissatisfied) to 10 (satisfied). The satisfaction index is available in all countries and years as is the happiness scale, with the exception of the UK in 1999. Looking at table 8 which shows descriptive statistics for the most recent year of data in each country, it seems that data collection must have been somewhat different in each country, as evidenced, for example, by the low number of unskilled French workers. Other variables, such as self-reported health, seems initially to perhaps be culturally driven, but are generally explicable. For example, Germany has slightly worse self-reported health because the average respondent is slightly older. Other independent variables not displayed show that a little below 50% of the sample was male in all countries, that the mean respondent was in his or her late 40's, and that, on average, respondents completed their educations between ages 18 and 24. Perhaps the most interesting independent variable is self-reported income, illustrated in figure 6. While, of course, 10% of respondents should report themselves to be in each income decile, one generally expects slight misreporting favoring the middle deciles (i.e. most people think they are middle class). This is the case in Spain, Switzerland, the US, Germany, and Belgium with Spain having the greatest distortion and Belgium the least. What is more surprising is that people in France, Italy, and the Netherlands are all likely to misreport themselves as poorer while in Sweden and the UK they misreport themselves as wealthier.

The analysis considers several macro level variables including the unemployment rate, job flows (the percent of the unemployed who have been unemployed 12 months or longer).[10] The two policy indices are the key macro

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[10]We also considered using the hazard rates of separations and job-finding as calculated in (Hobijn et al., 2008). The two statistics have a

| | % happy | % satisfied | employment | | occupation | | | % married | % healthy |
			%FT	% unemp	% prof	% skilled man	% unskilled		
Belgium	92	83	35	9.02	11	4	13	58	72
France	90	76	37	7.69	12	8	1	47	72
Germany	80	75	28	9.97	5	9	4	57	67
Italy	90	82	32	6.17	16	12	9	57	74
Netherlands	94	94	27	6.01	9	22	10	49	71
Spain	92	89	39	4.67	8	16	11	59	80
Sweden	96	91	53	2.89	7	17	9	46	78
Switzerland	94	91	38	1.07	13	14	7	54	83
UK	93	89	32	7.68	16	16	17	48	73
US	93	84	48	3.76	19	18	6	58	80

Table 8: Descriptive statistics
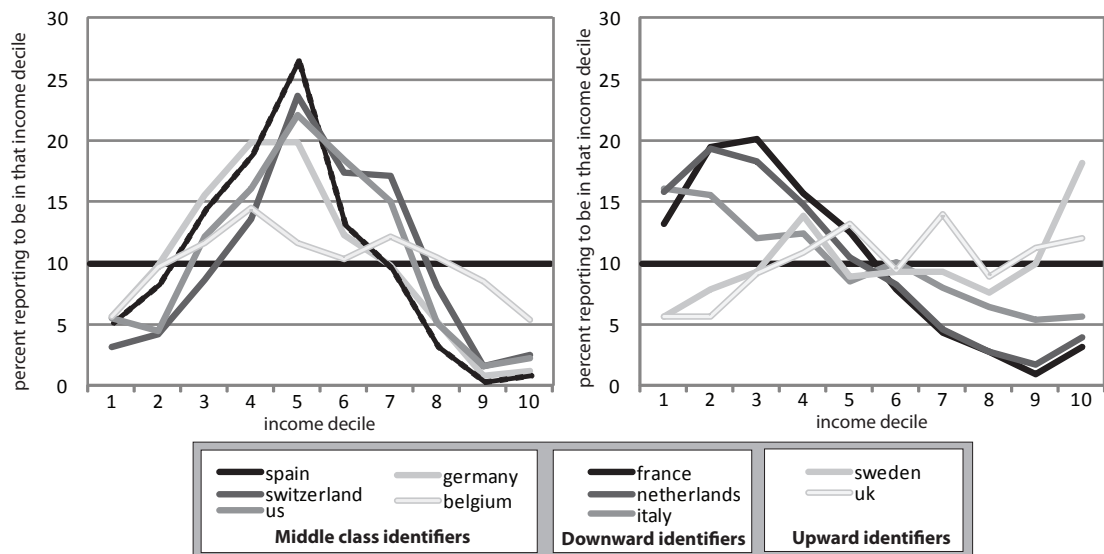
Figure 6: Self reported income by decile

variables of interest.[11]

6.2 Model and findings

The first analysis explores the life satisfaction outcome. Intuitively, a crossed effects model is the proper approach to this data as individuals are nested in countries and years, but countries and years are not necessarily nested within one another. To examine clustering within countries, years and country-years, several intra class correlation coefficients (ICC) were calculated (the percentage of variance explained (in satisfaction) within groups versus between groups). This statistic was calculated by estimating baseline multilevel and crossed effect models with no independent variables. The ICC for life satisfaction with people nested in countries, in years, in country-year (i.e. US-2001), and in *crossed* country years are .0459, .0475, .0493, and .0459 respectively. Qualitatively speaking the ICC's are low, though they are still significant improvements over an OLS model with no independent variables (i.e. using just the mean), with all 4 baseline models having a Chi-square with a P value of less than .001.

Given this clustering, five basic models were estimated, beginning with a pooled naive model that ignored country and year clustering, and simply included macro-level variables on the micro level. An interaction between all macro level indicators and an individual's employment status was estimated to focus on the unemployed's life satisfaction. The second model used a fixed effect for each country. This model is the most conservative in terms of controlling country-level effects on life satisfaction (such as a general country level psychology) but does not allow us to capture the effect of specific macro-level characteristics. Fixed effect models adjusts all variables to a a a deviation from the country's mean. The third "model" is actually a series of models. First OLS models were run in each country-year and then two macro-level models were used to predict the intercepts and coefficients (for unemployment's effect on satisfaction) from the first stage. The fourth model is a multilevel model with a random effect for countries' intercepts and slopes for unemployment's effect on satisfaction.[12] The last model is a crossed effects models of individuals nested in countries and years. This model should control for correlation across individuals in a single year as well as within a single country. This model uses the random year effect only for the intercept. In mathematical notation the models are as follows[13]:

y_{ijt}	life satisfaction of individual i in country j in time period t
X_{ijt}	individual-level controls
β_X	the vector of coefficients for individual-level controls
u_{ijt}	individual's unemployment status
γ_{ijt}	coefficient for an individual's employment status
Z_{jt}	macro-level controls
ψ_{jt}	vector of coefficients for macro-level controls
ϵ_{ijt}	random error
ϵ_j	country level error
ϵ_{jt}	country-year error
ϵ_t	year level error

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negative correlation, as expected (e.g. Italy has the lowest hazard of job separation and the highest proportion of their unemployed are long term unemployed) but the US and Sweden, have medium to low hazard rates of separation, with small percentages of long term unemployment.

[11]Other macro variables explored included the gini coefficient (measuring inequality), the PPP adjusted mean production worker wage and union density.

[12]Random effects by country without macro controls or varying slopes was also run. The results were almost exactly identical to the results for model four, although the fixed effect on unemployment was significant compared to model 4 where the intercept for unemployment is no longer significant since the effect of unemployment on satisfaction was explained indirectly by the macro level variables.) A Chi-square statistic comparing the deviances of the two models suggested that the random slopes model is an improvement, and as such, those results are presented.

[13]For a more detailed description of these models see Gelman and Hill (2006). For a description of using deviance to compare these models see Raudenbush (1993).

Pooled regression
$$y_{ijt} = C + \beta_X X_{ijt} + \psi_{jt} Z_{jt} + \gamma_{ijt} u_i + \epsilon_{ijt}$$
Fixed effects
$$y_{ijt} - \overline{y_{it}} = C + \beta_X (X_{ijt} - \overline{X_j}) + \gamma_{ijt}(u_{ijt} - \overline{u_j}) + (\epsilon_{ijt} - \overline{j})$$
Two-stage micro/macro model

$y_{ijt} = C_j + \beta_X X_i + \psi_{jt} Z_t + \gamma_j u_i + \epsilon_{it}$	Stage I: by country j
$C_j = C + \psi_{jt} Z_{jt} + \epsilon_{jt}$	Stage II: country intercept
$\gamma_j = C + \psi_{jt} Z_{jt} + \epsilon_{jt}$	Stage II: country unemp slope

Multilevel model

$y_{ijt} = C + \alpha_j + \alpha_t + \beta_X X_{ijt} + \gamma_j u_{ijt} + \epsilon_j + \epsilon_{ijt}$	Level I: people
$\alpha_j = C^{\alpha_j} + \psi_{jt}^{\alpha_j} Z_{jt} + \epsilon_j$	Level II: country intercept
$\gamma_j = C^{\gamma_j} + \psi_{jt}^{\gamma_j} Z_{jt} + \epsilon_j$	Level II: country unemployment slope

Crossed effects model

$y_{ijt} = C + \alpha_j + \alpha_t + \beta_X X_{ijt} + \gamma_j u_{ijt} + \epsilon_j + \epsilon_t + \epsilon_{jt} + \epsilon_{ijt}$	Level I: people
$\alpha_j = C^{\alpha_j} + \psi_{jt}^{\alpha_j} Z_{jt} + \epsilon_j$	Level II: country intercept
$\gamma_j = C^{\gamma_j} + \psi_{jt}^{\gamma_j} Z_{jt} + \epsilon_j$	Level II: country unemployment slope
$\alpha_t = C^{\alpha_t} + \epsilon_t$	Level II: year intercept

Critics of flexicurity claim that EPL cannot be replaced by social safety nets, and as such, people should be happier and/or have greater satisfaction under a system with more of both types of protections, less happy with just one type, and least happy with none. Flexicurity advocates would suggest that social safety nets are a replacement for general security and the unemployed should thus be more satisfied with a social safety net and unaffected by employment protection. (Notably strict EPL is shown to slow down the labor market and increase long term unemployment, making strict EPL negative for the unemployed.) However, long term unemployment is controlled for in these models. Without the indirect effect on satisfaction through long term unemployment, EPL should have no other effect on the unemployed's happiness. Employed people's satisfaction should be less affected by public policy than the unemployed, but presumably they prefer more generous EPL (which makes it unlikely they will lose their job) and less of a safety net (which they pay for).

Table 9 shows the results of the initial progression of analyses. The individual-level controls are rather consistent across analyses. Men are slightly more dissatisfied than women. Age has an interesting U-shape form with the satisfaction nadir being at age 40 (a mid life crisis?). Having children decreases satisfaction (the literature would suggest this is only the case while children are young; later they increase satisfaction) while marriage increases it. Self assessed poor health is the strongest predictor of low satisfaction. The unemployed are the least happy, but the employed are still less happy than those who are out of the labor market (adult students, home makers, or retirees). In terms of working life, professionals are more satisfied than skilled and unskilled manual laborers and those who believe they earn more are also more satisfied. Notably the only coefficient that stands out is the income coefficient in the third model, which is for Germany rather than *all* countries–indicating that self-assessed income is a bit more important in Germany. Macro variables should influence satisfaction less, since people are more strongly affected by personal circumstances than by social circumstances. Nevertheless, it seems that people are slightly less satisfied when there is more unemployment, stricter EPL, and a weaker social safety net. Presumably these macro conditions are more important to the unemployed. For example past research would suggest that the unemployed are happier when there are other unemployed people or one might imagine that the unemployed are more appreciative of the social safety net. Results for the first three interactions are unstable, but it seems that the unemployed are significantly more satisfied with a secure safety net. Predicted country random effects suggest that the Swedish, Swiss, and Dutch are more satisfied, while those in Belgium, France, Germany, and Italy are less satisfied. Unemployment seems to be most devastating in Germany and less devastating in Italy, Spain, the UK, and US. Model statistics would suggest that each successive model is an improvement, with the crossed effects model offering the best fit to the data.

The policy implications of the last equation are better illustrated in figure 7 which shows a contour plot of the predicted satisfaction by the two policy indices–the "mandatory employer safety net" or EPL index and the "government funded safety net." The policy indices are plotted over the observed range for the full period (1981-2007) and the life satisfaction predictions are for a healthy professional married male age 47, with kids, earning an income self assessed as the median, in a country with 7% unemployment, 37% of which is long term unemployment.

The random effects are held at zero–the mean country and year. The left panel illustrates an employed individual and the right panel illustrates an unemployed individual. A scatter plot of countries by the two policy scores for the most recent year of data (around 2005) are overlayed. The employed individual is overall more satisfied than the unemployed, controlling for all individual and macro level variables. The employed individual is largely unaffected by the safety net (despite presumably paying more taxes to fund that safety net). Their satisfaction is slightly diminished by strict EPL–perhaps because it slows down worker mobility. The right panel shows satisfaction for the unemployed individual. These results confirm flexicurity advocates' supposition; the unemployed are most satisfied when they are in countries with strong safety nets and weak EPL (controlling for individual and country-level characteristics) while they are least satisfied in countries with strong EPL and weak safety nets.

	pooled	fixed effects	country/year w/ macro model[+]	random country (slope & int)		crossed country years[++]	
individual level							
intercept	8.57***	8.02***	8.11***	8.38***		8.17***	
male	-.052***	-.049***	-.045	-.05**		-.050***	
age	-.041***	-.041***	-.0777***	-.04**		-.042***	
age^2	.00048***	.00048***	.00073***	.00047**		.00049**	
has kids	-.109***	-.119***	-.049	-.11*		-.091***	
unhealthy	-1.03***	-1.01***	-1.09***	-1.01*		-1.01***	
married	.53***	.533***	.50***	.53*		.53***	
single	.023	.018	.034	.02		.024	
unemp	-.48***	-.929***	-1.21***	-.35 (int.)		-.32 (int.)	
employed	-.046**	-.057**	-.0048	-.06*		-.066***	
income	.061***	.053***	.18***	.05***		.061***	
professional	.042*	.092***	.15	.089*		.089***	
skilled manual	-.038	.005	.041	.0043		.015	
macro level							
unemp rate	-.026***		-.046	-.018***		-.0001	
long term unemp	-.0037***		-.0052	.0062*		.002	
mandatory index	-.054***		.0037	-.099***		-.056***	
safety index	.13***		.375**	.016		.014	
macro∗ unemp							
unemp rate	.031***		.027	.0048		-.0035	
long term unemp	-.014***		-.014**	-.0078		-.0093	
mandatory index	-.035		-.063	-.042		-.032	
safety index	.067		.07	.29***		.24***	
		as a deviation from the mean fixed effect, 8.25	as a deviation from the mean intercept, 8.11	r.effect on the intercept	r. effect on unemployment slope	r. effect on the intercept	r. effect on unemployment slope
country effects							
Belgium		.04	.077	-.30***	-.20**	-.13**	-.12
France		-.51***	-.12	-.22***	-.21*	-.31***	-.22**
Germany		-.21***	-.05	-.24***	-.62***	-.19***	-.59***
Italy		-.26***	-.25	-.31***	.39***	-.21***	.36**
Netherlands		.28***	.26	.29***	-.01	.34**	.06
Spain		-.34***	-.84	-.16***	.37***	-.24***	.35**
Sweden		.37***	1.01	.64***	-.12	.47**	-.15
Switzerland		.51***	.34	.37***	-.33	.27***	-.29
UK		.03	.007	-.01	.36***	.034	.32***
US		.09	-.41	-.06**	.38***	-.022	.29***
model fit	R^2 = .126	R^2 =.94	avg R^2 (micro)= .16, intercept R^2 = .38, unemp coef R^2 = .19	AIC = 261400, DIC = 261019, deviance = 261184		AIC = 261131, DIC = 260777 deviance = 260928	

Note: The omitted category for marital status is widowed, divorced, or separated. The omitted category for employment status is out of the labor market. The models were also run including the age of completed education, the work ethic & political leaning variables, work ethic variables interacted with unemployment status, number of kids, gini index, and union density
+ Under the "country/year with macro" column, regressions were run separately for each country and year, predicting satisfaction. The resulting intercepts and the slopes for an individual's employment status were then predicted in analyses using country-year variables. Micro variables' slopes are taken from the Germany 2006 for illustration. The coefficients from predicting intercepts are illustrated in the macro level variable entries and the coefficients from predicting unemployment's slope are in the macro-micro interaction variable cells.
++ Year effects omitted here. The years with the lowest satisfaction intercepts included 1981 and 2005 while 1989 was very satisfied. This essentially picked up some of the country effects; Switzerland was the only country with data in 1989 (a generally satisfied country) while Belgium, France, Italy and Spain had very low average satisfaction in 1981. Consequently, the Swiss country effect drops into the negative range in this analysis.

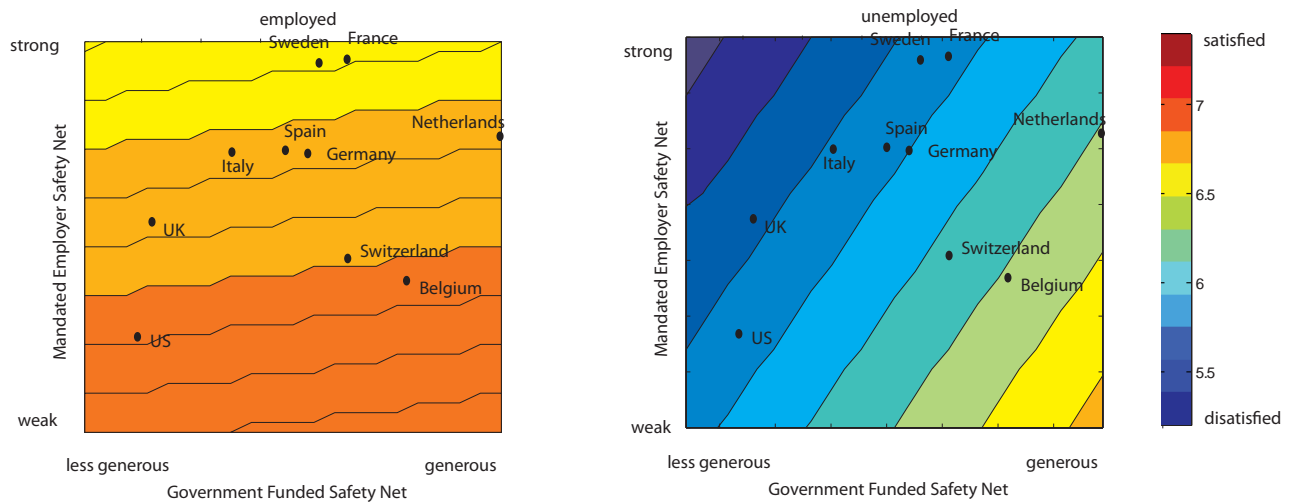Table 9: Predicting an individual's life satisfaction (1= unsatisfied, 10 = very satisfied)

Figure 7: Life satisfaction for an employed and an unemployed individual across policy scenarios

These models were extended to include several macro-level interactions, as illustrated in table 10. The coefficients on the individual level variables are almost identical to those in table 9. The first model introduces an interaction between the two policy indices. A positive interaction would indicate that in combination the two policies offer more satisfaction than each one does individually. In other words, people are even more satisfied with both policies than with one or the other. The second equation adds an interaction between the two indices and unemployment. A positive coefficient would indicate that the unemployed disproportionately benefit from a combination of the two types of safety nets. Positive coefficients on either of these effects do not support flexicurity advocates since the first would suggest that the two policies are not substitutes and the second would negate the supposition that strong EPL shuts the unemployed out of the labor market, deteriorating their satisfaction. Finally an interaction between the two policy indices and employment was tested (remembering that the contrast group for employment status was those out of the labor market).

Table 10 shows the results of these extensions. The interaction between the policy indices is significant and positive however it's inclusion absorbs the mandatory protections' effect. The results are easier to interpret looking at figure 8 which uses the same baseline as figure 7. The contour plot illustrates predicted satisfaction including the policy index interaction. Adding the interaction changed effects for the employed more than the unemployed. In 7 for employed people there was a linear gradient towards greater satisfaction with less EPL. Now the graph is dominated by a gradient from bottom left to upper right, showing the highest satisfaction with weak EPL and safety nets, and decreasing satisfaction as both types of safety nets increase. The upper left pocket of low satisfaction should be ignored, because this is out of the range of data anyhow–no country has extremely strict EPL with no safety net, though Italy comes close. Overall, this makes sense. The employed pay for the safety net and although they enjoy greater job security with strong EPL, the less fluid market means it is hard to switch jobs. Furthermore, the ability to hold onto what one already has does not feel like an advantage while an ability to move forward does. For the unemployed, policy effects remain more or less constant from the prior model. The unemployed are most satisfied moving away from a strict EPL/low safety net environment and most satisfied in a flexicurity regime. What has changed is that now the gradient is curved, so that countries with no safety net and strict EPL enjoy bigger gains in satisfaction when they change policies than those countries starting further from the policy nadir of no safety net and strict EPL.

Figure 9 shows the magnitude of effects in the crossed effects model without interactions, with the 25th, 50th, and 75th percentiles of "life satisfaction" marked. An individual's health and marital status is by far the strongest predictor of their life satisfaction. However, for unemployed people, the extent of the safety net is important.

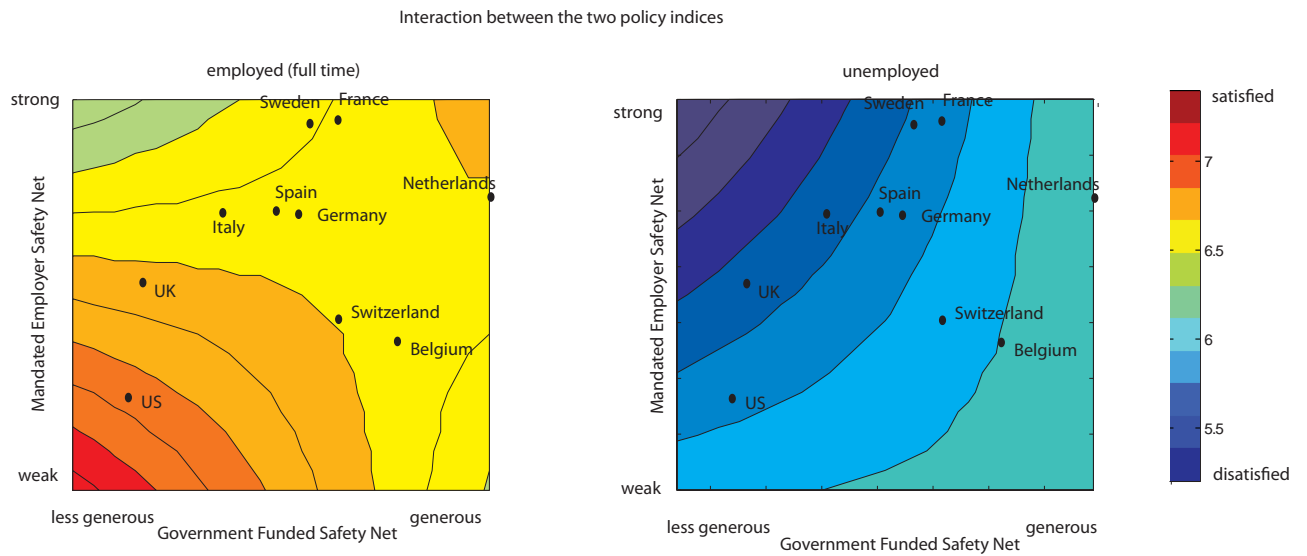Interaction between the two policy indices

Figure 8: Life satisfaction for an employed and an unemployed individual across policy scenarios
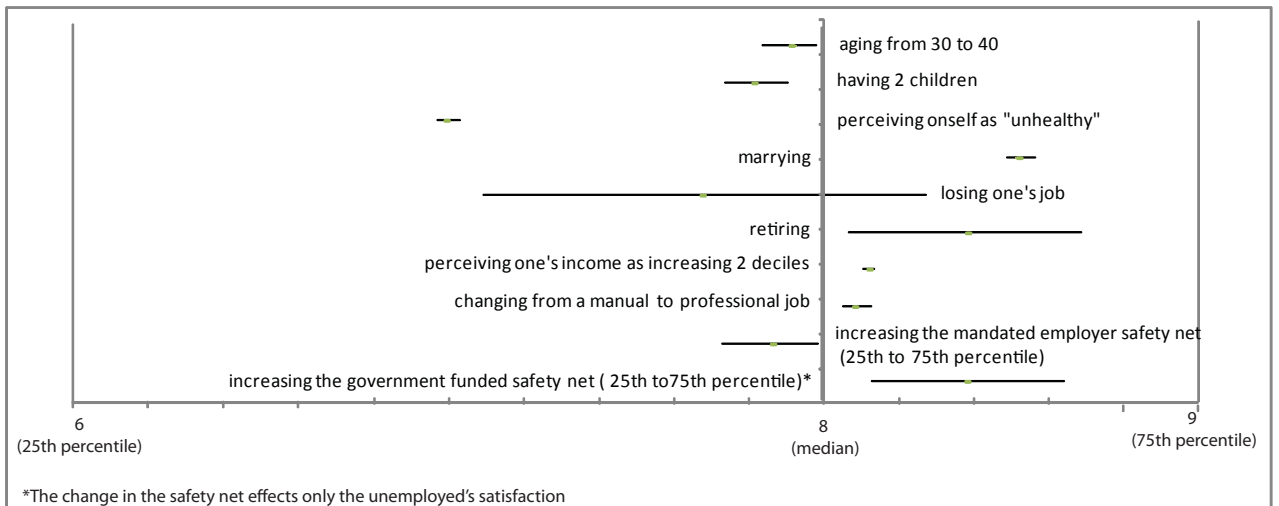
Figure 9: The magnitude of fixed effect coefficients in the crossed effects model

	no int.		policy int.		3-way		2∗ 3-way	
individual level								
intercept	8.17***		8.09***		8.11***		8.11***	
male	-.050***		-.050***		-.050***		-.050***	
age	-.042***		-.042***		-.042***		-.049***	
age^2	.00049**		.00049**		.00049**		.00049**	
has kids	-.091***		-.091***		-.091***		-.091***	
unhealthy	-1.01***		-1.00***		-1.00***		-1.00***	
married	.53***		.53***		.53***		.53***	
single	.024		.022		.022		.022	
unemp	-.32		-.36		-.75		-.76	
employed	-.066***		-.066***		-.066***		-.066***	
income	.061***		.060***		.060***		.060***	
professional	.089***		.085***		.085***		.086***	
skilled manual	.015		.015		.015		.015	
macro level								
unemp rate	-.0001		-.0003		-.0003		-.003	
long term unemp	.002		.002		.002		.002	
mandatory index	-.056***		-.049		-.052		-.053	
safety index	.014		-.20***		-.18***		-.18***	
mand∗safety			.045***		.040***		.039***	
macro∗ unemp								
unemp rate	-.0035		-.0039		-.016		-.016	
long term unemp	-.0093		-.0091		-.004		-.004	
mandatory index	-.032		-.027		-.024		-.024	
safety index	.24***		.25***		-.26		-.26	
3-way								
unemploy∗mand∗safety					.10***		.11***	
employ∗mand∗safety							.001	
Random effect	int	slope	int	slope	int	slope	int	slope
Belgium	-.13**	-.12	.00	-.12	-.02	-.15**	-.02	-.15
France	-.31***	-.22**	-.33***	-.23**	-.32***	-.31***	-.32***	-.31***
Germany	-.19***	-.59***	-.16***	-.59***	-.17***	-.56***	-.17***	-.56***
Italy	-.21***	.35**	-.21***	.37***	-.21***	.30***	-.21***	.30***
Netherlands	.34***	.06	.32***	.05	.32***	-.02	.33***	-.02
Spain	-.24***	.35**	-.19***	.35***	-.20***	.44***	-.20***	.44***
Sweden	.47**	-.15	.43***	-.19	.44***	-.31***	.44***	-.31***
Switzerland	.27***	-.29	.35***	-.31	0.34***	-.19	.33***	-.19
UK	.03	.32***	.01	.34***	.01	.34***	.01	.34***
US	-.022	.29***	-.21***	.33***	-.20***	.15***	-.20***	.15*
model fit	AIC = 261131, DIC = 2607577, deviance = 260928		AIC = 261129, DIC = 260760, deviance = 260918		AIC = 261131, DIC = 260751, deviance = 260913		AIC = 261142, DIC = 260742, deviance = 260913	

Note: The omitted category for marital status is widowed, divorced, or separated. The omitted category for employment status is out of the labor market.

Table 10: Predicting an individual's life satisfaction, including interactions

The WVS also offers a variable in which people can report their happiness on a scale from 1 to 4 (happy to unhappy). Across countries and years 29% reported very happy, 60% happy, 9% not so happy, and 1% unhappy. Breaking this into a dichotomous variable (1 or 2 versus 3 or 4) a crossed effects logit was run to predict happiness. The coefficients are illustrated in figure 10. The results for happiness are, unsurprisingly, similar to the results for life satisfaction. Health and marriage are the two most important individual factors in happiness while a higher (perceived) income increases happiness slightly and age still has a quadratic effect, with happiness decreasing and then increasing with age. Having a professional job is less important to happiness than it is to satisfaction. The unemployed are more likely to be unhappy than the employed. The macro level indicators show that higher unemployment and more long term unemployment negatively effect everyone's probability of being happy. The literature's finding that the unemployed are happier when there is more unemployment and more unhappy when there is more long-term unemployment was confirmed. Most importantly, the effects of the government funded safety net change from the prior analysis. A government funded safety net increases the probability someone is happy, but that effect is less great for the unemployed as evidenced by the negative coefficient on the interaction between unemployment and the safety net index.

	pooled model	fixed effects model	individual country regressions	random country effects, slopes and intercepts varying by country characteristics	non-nested model
individual level variables					
intercept	5.07***	3.76***	2.19***	4.23***	4.223***
male	-0.03	-0.03	-0.01	-0.01	-0.014
age	-.06***	-.06***	-.08**	-.06***	-.06***
age2	.00056***	.00056***	0.0007**	.00055***	.00055***
has kids	-.14***	-.16***	0.16	-.13***	-.13***
unhealthy	-1.23***	-1.25***	-1.28***	-1.27***	-1.27***
married	.99***	.98***	.75***	.97***	.97***
single	0.03	0.03	-0.001	0.04	0.04
unemp	-.85***	-.95***	-.92***	-.79***	-.79***
employed	0.001	-0.002	0.11	-0.02	-0.02
income	.080***	.076***	.20***	.09***	.09***
professional	0.06	.12**	0.05	0.06	.06*
skilled manual	-0.03	0.004	0.09	-0.07	-.07*
macro-variables					
unemp rate	0.003			-.02***	-.020***
long term unemp	-.014***			-.01***	-.012***
mandatory index	-0.01		-0.009	-0.01	-0.01
safety index	.13***		.68**	.29***	.29***
macro*unemp					
unemp rate	.04**			.04***	.04***
long term unemp	-.01***			-.01***	-.01***
mandatory index	-0.005		-0.023	-0.02	-0.02
safety index	-.17**		-0.014	-.13**	-.13**

country effects		deviation from Belgium	as a deviation from the mean	r. effect on the intercept	r. effect on unemployment slope	r. effect on the intercept	r. effect on unemployment slope
Belgium		0	0.29	0.04*	.13*	.037*	.13*
France		-0.05	0.90	0.02	0.04	0.02	0.04
Germany		-0.74***	-0.77	-.13***	-.34***	-.13***	-.33***
Italy		-0.85***	-0.73	0.02	.12*	0.01	.12*
Netherlands		0.40***	0.30	0.03	0.06	0.03	0.06
Spain		-.63***	-1.19	-.03*	0.02	-.04**	0.01
Sweden		0.54***	1.57	0.02	0.04	0.025	0.04
Switzerland		0.29***	-0.19	0.01	0.005	0.01	0.01
UK		-0.07	0.08	0.04**	0.09	.04**	0.09
US		-0.15	-0.04	-0.01	0.01	-0.01	0.01
model fit	ll=-19098	dev=38250.8	ll avg micro models = -858, intercept R2= .27, unemploymen	AIC = 38499, DIC = 38451 deviance = 38451		AIC = 38492 DIC = 38442 deviance = 38442	

+ model 3 presents Germany 2006 results for the individual level variables

Figure 10: Happiness logits

7 Conclusion

This paper proceeded in three stages. In the first stage two indices of labor protections were developed to measure whether countries take "flexicurity" approaches. This work found that Switzerland and Belgium have moved towards more flexicurity-style approaches over the past few years. The analysis also showed that Italy and Spain pursued an unusual policy approach of strict employment protection with a weak safety net, though in recent years Spain has shifted policies towards a mainstream European approach, leaving Italy alone. Finally it was confirmed that the US has the weakest all around labor market protections, and, as expected, the UK's policy lies somewhere between the USA and Europe. The second part of the paper looked at how these policies impact employment. This part of the paper found that the policies pose a trade off between the young and old. EPL protects the mainstream labor force at the expense of the very young (and to some extent the very old). In contrast, a strong safety net and active labor market policy favors the young. The third, and final, analysis examined softer outcomes like "life satisfaction" and "happiness" finding that a flexicurity approach seems to maximize the unemployed's quality of life while strict EPL does not seem to make anyone explicitly more satisfied or happy. Nevertheless it does not mean that these policies don't offer an important social function. People tend to not value what they have and strict EPL allows people to hold onto their jobs. But if that security were taken away, perhaps they would feel its absence.[14] While people might fail to enjoy the job security that EPL grants them, EPL also makes the labor market less fluid and therefore harder to find another job. Thus people may be more swayed by the fact that they lose opportunities rather than the fact that they are protected against loss.

These analyses underline the tradeoffs between different policy approaches. Strong EPL and weak safety nets are probably one of the worst approaches, shutting the young and unemployed out of the labor market without benefitting the employed in any way that they appreciate. A generous safety net was shown to have more positive effects on the soft outcomes for both the employed and unemployed, and should probably be the mainstay of any labor market policy package. EPL seems to have largely negative effects on the employed and unemployed satisfaction, and beneficial employment effects for those already employed. The findings do seem to suggest that if strict EPL is pursued, it should be accompanied by strong active labor market policies and unemployment insurance that keeps those shut out of the labor market job-ready and above water while waiting for their opportunity.

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[14]This seems particularly likely in light of the fact that our unreport analysis of a WVS question on the value of job security showed that people in those countries without job security were much more likely to report that it is a valuable job attribute.

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