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Do Unemployment Benefits Create Jobs or Redistribute Them? A Macro-Level Analysis of the Displacement Effect

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Abstract

This study investigates the macroeconomic effects of unemployment benefits on unemployment and employment rates within a general equilibrium framework. Utilizing annual data from 10 OECD countries over the period 2000–2022, the analysis applies second-generation panel data methods to account for cross-sectional dependence and country-specific heterogeneity. The empirical strategy employs the Pesaran (2004) CD test for cross-sectional dependence, the Westerlund (2007) test for cointegration, and estimates long-run elasticities using the Dynamic Common Correlated Effects Mean Group (DCCE-MG) and Augmented Mean Group (AMG) estimators. The results indicate that unemployment benefits significantly reduce the unemployment rate ($\beta = -0.409$) while exerting a modest but positive effect on the employment rate ($\beta = 0.031$). This discrepancy suggests that unemployment assistance primarily operates through a displacement mechanism—redistributing access to existing jobs rather than generating new employment—rather than inducing the disincentive effects predicted by the standard moral hazard hypothesis. Furthermore, DCCE-MG estimates reveal substantial cross-country heterogeneity, with positive employment effects observed in France and the Netherlands, contrasting with negative effects in Finland. These findings highlight the importance of accounting for cross-sectional dependence in evaluating labor market policies and demonstrate that the effectiveness of unemployment benefits is contingent upon institutional complementarities rather than spending levels alone.

JEL Classification C23 · E24 · J64 · J65 · H53

1 Introduction

Unemployment benefits present a fundamental policy trade-off between providing income security and mitigating potential moral hazard. While these transfers stabilize consumption expenditures for displaced workers, they theoretically carry the risk of reducing job search incentives by lowering the opportunity cost of unemployment. Classical search theory (Mortensen 1977; Pissarides 2000) argues that generous benefits extend unemployment duration by raising the reservation wage. Conversely, the "liquidity constraint" hypothesis (Card et al. 2007; Chetty 2008) suggests that benefits enable individuals to finance longer search periods, thereby facilitating higher-quality job matches rather than inducing idleness. Consequently, the net effect of unemployment benefits on aggregate welfare and employment remains theoretically ambiguous.

While micro-level empirical studies document heterogeneous behavioral effects (Lalive 2007; Schmieder et al. 2016), the macro-level literature has largely failed to capture these complexities. A significant portion of existing cross-country research relies on first-generation panel data estimators (e.g., Bassanini and Duval 2009) that assume cross-sectional independence and slope homogeneity. This assumption is particularly problematic in an era of global economic integration, where common shocks —such as the 2008 Financial Crisis or the COVID-19 pandemic—induce cross-sectional dependence. Ignoring these interdependencies can lead to biased estimates and spurious conclusions regarding the

“moral hazard” hypothesis at the macroeconomic level. Furthermore, failing to distinguish whether changes in the unemployment rate stem from labor force participation decisions or net employment creation can obscure the true labor market dynamics.

This study addresses this methodological gap by examining the long-run effects of unemployment benefits on both employment and unemployment rates across 10 OECD countries. The study makes three primary contributions to the literature:

- **Methodological advancement**: It adopts a second-generation panel data strategy that simultaneously controls for cross-sectional dependence and parameter heterogeneity using the Dynamic Common Correlated Effects Mean Group (DCCE-MG) and Augmented Mean Group (AMG) estimators (Chudik and Pesaran 2015; Pesaran 2006).
- **Dual-model decomposition**: By modeling unemployment and employment rates separately, the analysis isolates net employment creation from mechanical correlations and labor force participation dynamics.
- **Context-specific evidence**: The results provide country-specific evidence indicating that policy effectiveness is conditioned by institutional structures rather than spending levels alone, challenging the “one-size-fits-all” approach to labor market policy.

The empirical findings from the AMG estimator suggest that unemployment benefits reduce the aggregate unemployment rate ($\beta = -0.409$) and increase employment across the panel ($\beta = 0.031$), challenging the strict moral hazard hypothesis at the macro level. However, the substantial asymmetry between these effects—unemployment reduction being approximately 13 times larger than employment growth—suggests that benefits predominantly operate through a displacement mechanism, redistributing access to existing jobs rather than generating new employment. DCCE-MG estimates reveal significant cross-country heterogeneity: strong positive employment effects are observed in countries such as France and the Netherlands, whereas negative effects persist in others, such as Finland.

The remainder of this study is organized as follows: Section 2 outlines the theoretical framework and reviews the empirical literature; Section 3 details the data and econometric methodology; Section 4 presents the empirical findings; Section 5 discusses the results in light of theoretical predictions; and Section 6 concludes with policy implications.

2 Theoretical Framework and Literature Review

This section examines the effects of unemployment benefits on the labor market through four distinct lenses: theoretical behavioral mechanisms, the distinction between insurance and assistance, the macroeconomic institutional context, and the empirical evidence base. Building on this foundation, we develop explicit hypotheses to guide the empirical analysis.

2.1 Theoretical Foundations: Moral Hazard and Reservation Wage

Unemployment benefits serve as a fundamental social protection mechanism designed to smooth consumption for displaced workers. However, beyond their role as income transfers, these benefits operate through complex transmission channels that influence job search behavior and labor market outcomes. The aggregate effect is thus a joint function of individual behavioral responses and the prevailing institutional structure.

The conceptual underpinnings of job search theory trace back to Stigler's (1962) work on information costs, with the modern dynamic framework formalized by McCall (1970), Mortensen (1970), and Pissarides (2000). Central to this theory is the reservation wage—the minimum wage threshold at which an unemployed individual accepts a job offer. Mortensen (1977) demonstrated that generous income support raises this reservation wage by increasing the value of the outside option (remaining unemployed). Consequently, individuals may become more selective, reducing the job-finding rate. This mechanism, conceptualized as moral hazard, forms the primary theoretical basis for the potential disincentive effects of unemployment benefits (Krueger and Meyer 2002).

It is crucial to distinguish the specific focus of this study—unemployment assistance—from traditional unemployment insurance. While insurance is typically contributory and wage-based, unemployment assistance is non-contributory and means-tested based on household income. Vroman (2001) argues that tying eligibility to a household income threshold creates a distinct distortionary incentive structure, potentially generating stronger disincentives for labor force participation compared to standard insurance schemes.

2.2 Modern View: Liquidity Constraints and Match Quality

Contemporary empirical literature challenges the view that behavioral responses are driven solely by moral hazard. Chetty (2008) decomposed the effect of unemployment benefits into two components: the moral hazard effect (reduced incentive to search) and the liquidity effect. For credit-constrained households, benefits relax the pressure to accept the first available offer, enabling a more prolonged but higher-quality job search. Using U.S. data, Chetty estimated that approximately 60% of the increase in unemployment duration stems from liquidity constraints rather than moral hazard, suggesting that benefits primarily correct credit market imperfections.

Causal evidence from Card et al. (2007), exploiting sharp discontinuities in the Austrian severance pay system, supports this decomposition. They found that while increased cash-on-hand extended unemployment duration, it did not lead to lower re-employment wages, indicating that benefits facilitate better job matches rather than subsidizing leisure. Similarly, Schmieder et al. (2016) demonstrated that while prolonged unemployment can lead to skill depreciation and stigma effects, adequate income support mitigates these risks by allowing workers to avoid occupational mismatches.

2.3 Macroeconomic Framework: Search Frictions and Institutions

The Diamond-Mortensen-Pissarides (DMP) search and matching framework provides the theoretical scaffolding for understanding general equilibrium effects (Diamond 1982; Mortensen and Pissarides 1994). In this model, unemployment benefits can increase workers' bargaining power, potentially raising wages and depressing firm vacancy creation (Pissarides 2000). However, Landais et al. (2018) argue that the optimal design of such benefits is state-dependent; during recessions, when labor demand is constrained, the negative employment effects of reduced search intensity are minimal, making counter-cyclical generosity welfare-enhancing.

The impact of these policies is mediated by institutional heterogeneity. The "flexicurity" literature (Wilthagen and Tros 2004) attributes the labor market success of countries like Denmark and the Netherlands to the "golden triangle" of flexible hiring regulations, generous social safety nets, and rigorous active labor market policies (ALMPs). Andersen and Svarer (2007) show that generous benefits are compatible with low unemployment only when coupled with strict activation requirements. This aligns with the "Varieties of Capitalism" approach (Hall and Soskice 2001), which posits that policy effectiveness is contingent on the broader institutional infrastructure, underscoring the necessity of cross-country analyses that account for heterogeneity.

2.4 Displacement Effects and General Equilibrium

One of the most significant gaps between the micro and macro literature lies in the analysis of general equilibrium effects and the job displacement mechanism. While micro studies demonstrate that the job finding probability of program beneficiaries can be altered, the net effect of these individual gains on aggregate employment may remain ambiguous.

In an environment where the total number of jobs is fixed in the short run and job creation occurs slowly, increases in the job finding probability at the individual level can reduce the employment chances of other unemployed individuals through general equilibrium effects. Crépon et al. (2013) evaluated a job counseling program implemented in France using a cluster-randomized experiment and directly demonstrated the existence of the displacement effect. According to the study, while the program increased the individual job finding probability by 5%, it reduced the chances of the control group in the same labor market by 2.5%; thus, the net employment increase remained at only 2.5% (a displacement rate of 50%).

Similarly, Gautier et al. (2018), in a structural search and matching model constructed using Danish data, found that the individual effect of job search assistance programs (30%) dropped to one-third (10%) at the macro level due to general equilibrium mechanisms (wage increases, reduced job creation on the firm side, etc.).

2.5 Conceptual Framework and Hypotheses

Based on the theoretical discussion above, we synthesize three competing theoretical perspectives into an integrated conceptual framework (see Fig. 1):

1. **Moral Hazard Channel**: Generous unemployment benefits raise the reservation wage, reduce job search intensity, and extend unemployment duration, leading to higher unemployment rates and lower employment rates.
2. **Liquidity-Match Quality Channel**: Benefits relax financial constraints, enabling better job matches and improved labor market outcomes in the long run.
3. **Displacement Channel**: Benefits facilitate individual job access but merely redistribute existing jobs without generating net employment, creating an asymmetry between unemployment reduction and employment creation.

Building on this framework, we formulate the following hypotheses:

Hypothesis 1

(Moral Hazard vs. Liquidity): *If the moral hazard effect dominates, unemployment benefits will increase unemployment and decrease employment. If the liquidity-match quality effect dominates, benefits will reduce unemployment and increase employment.*

Hypothesis 2

(Displacement Effect): *If displacement effects are present, the unemployment-reducing effect of benefits will be substantially larger than the employment-increasing effect, as benefits redistribute access to existing jobs rather than create new employment.*

Hypothesis 3

(Institutional Heterogeneity): *The effect of unemployment benefits on labor market outcomes will vary significantly across countries, depending on institutional complementarities such as activation requirements, labor market flexibility, and public employment services capacity.*

2.6 Empirical Literature Review

2.6.1 Micro-Level Evidence

Early empirical studies primarily tested the moral hazard effect predicted by job search theory. Meyer (1990), using U.S. administrative data, demonstrated that increases in unemployment insurance benefits significantly reduce the job finding rate; specifically, a 10% increase in the benefit level reduces the probability of exiting unemployment by 5–9% and extends the average unemployment duration by approximately 1–1.5 weeks. Similarly, Katz and Meyer (1990) showed that changes in the potential duration of benefits significantly prolonged unemployment spells.

Evidence from Europe corroborates these results. Lalive (2007), employing a Regression Discontinuity Design (RDD), showed that extended benefit duration in Switzerland increased unemployment duration, though the effect was heterogeneous. Lalive et al. (2006) evaluated a reform in Austria and found that both the level and duration of benefits had significant prolonging effects.

The micro-level literature specific to unemployment assistance is more limited. Vroman (2001) argues that the impact of unemployment assistance is shaped not only by individual job search incentives but also by eligibility criteria based on household income, with high effective marginal tax rates potentially weakening work incentives. Kyyrä (2023) found that while increased unemployment assistance in Finland reduced exit rates from unemployment, the disincentive effects were statistically significant but relatively limited.

Finally, the effect of unemployment assistance on job search behavior is closely associated with institutional design. Pellizzari (2006), in a study of European countries, demonstrated that job search intensity is influenced not only by the instantaneous benefit received but also by the total protection package offered by the system. The study revealed that in countries where means-tested family benefits effectively act as unemployment assistance, the expected increase in exit rates upon the exhaustion of insurance did not occur, as individuals could transition to other benefits. This proves that analyzing the employment impact of assistance requires accounting for the interaction with other social policy tools and the broader institutional structure.

2.6.2 Macro-Level Panel Studies

The empirical literature at the macro level relies largely on panel data studies covering OECD countries. Nickell (1997), utilizing averaged data for 20 OECD countries (1983–1994), analyzed the relationship between unemployment rates and labor market institutions, finding that long-term and generous unemployment benefits are associated with higher unemployment, particularly when accompanied by weak activation policies.

Elmeskov et al. (1998) examined the determinants of structural unemployment across 19 countries (1983–1995) using Generalized Least Squares (GLS) Random Effects, estimating the average elasticity of unemployment with respect to benefit generosity at approximately 0.4. Blanchard and Wolfers (2000) demonstrated that the negative effects of global shocks are exacerbated when they interact with rigid institutional structures, such as generous unemployment benefits.

Critique and Methodological Gap

While first-generation macro panel studies made significant progress in explaining the link between institutions and unemployment, they share a critical methodological limitation. All utilized estimators (OLS, Fixed Effects, GLS) assume no cross-sectional dependence and that shocks are distributed homogeneously. In an era of increasing economic integration, this assumption is invalid and leads to biased estimates. This study addresses this gap by employing second-generation panel data methods.

3 Data and Methodology

3.1 Data Description

This study utilizes annual panel data from 10 OECD countries over the period 2000–2022. The country sample includes: Germany, Austria, Denmark, Finland, France, Netherlands, Portugal, Greece, Ireland, and Spain. The selection criteria prioritized data availability across all variables and representation of diverse institutional arrangements within Europe.

Table 1 presents the variable definitions and data sources.

Table 1
Variable Definitions and Data Sources

Variable	Symbol	Definition	Source
Employment Rate (ln)	*ln_emp*	Natural logarithm of the employment rate (ages 15+)	World Bank (WDI)
Unemployment Rate (ln)	*ln_unemp*	Natural logarithm of the unemployment rate (ages 15+)	World Bank (WDI)
Unemployment Benefit Expenditure per Unemployed	*ln_ua_per*	Natural logarithm of real expenditure per unemployed person, calculated by dividing total unemployment benefit expenditure (derived from the share of GDP at 2015 constant prices) by the total number of unemployed persons	OECD (SOCX)
Tax Wedge	*Tax*	Labour taxation – OECD comparative country indicators	OECD (Taxing Wages)
GDP Growth	*GDP*	Annual real GDP growth rate (%)	World Bank (WDI)
Labor Force Participation Rate	*LFP*	Total labor force participation rate (% of total working-age population)	World Bank (WDI)
Note: The panel consists of N = 10 countries and T = 23 years, yielding 230 observations.			

3.2 Model Specification

The baseline long-run relationship is specified as follows:

$$\ln(Y)_{it} = \alpha_0 + \alpha_1 \ln(ua_per)_{it} + \alpha_2 Tax_{it} + \alpha_3 GDP_{it} + \alpha_4 LFPR_{it} + \epsilon_{it}$$

(1)

where *i* and *t* denote the country and time period, respectively; $\ln(Y)_{it}$ represents the natural logarithm of the dependent variable (unemployment rate or employment rate); $\ln(ua_per)_{it}$ is the natural logarithm of real unemployment benefit expenditure per capita; Tax_{it} indicates the tax wedge on labor costs; GDP_{it} represents the real GDP growth rate (proxy for business cycles); $LFPR_{it}$ stands for the labor force participation rate; and ϵ_{it} is the error term capturing unobserved heterogeneity and idiosyncratic shocks.

3.3 Econometric Strategy

The methodological approach follows a sequential diagnostic and estimation procedure, as illustrated in Fig. 2.

3.3.1 Cross-Sectional Dependence Test

Given the high degree of economic integration among OECD countries, assuming cross-sectional independence may lead to biased estimates. We employ the Pesaran (2004) CD test, which evaluates the null hypothesis of no cross-sectional dependence against the alternative of dependence. The test statistic is computed based on the pairwise correlation coefficients of the residuals from Fixed Effects estimations.

3.3.2 Slope Homogeneity Test

We investigate slope homogeneity using the Pesaran and Yamagata (2008) delta (Δ) and adjusted delta (Δ_adj) test statistics. The null hypothesis posits that slope coefficients are homogeneous (β_i = β), whereas the alternative hypothesis asserts heterogeneity (β_i ≠ β).

3.3.3 Panel Unit Root Test

Given evidence of cross-sectional dependence, we employ the second-generation CIPS (Cross-Sectionally Augmented IPS) test developed by Pesaran (2007). This test augments the standard ADF regression with cross-sectional averages and their lags, allowing the model to control for unobserved common factors.

3.3.4 Panel Cointegration Test

The Westerlund Durbin-Hausman test (Westerlund 2007) is employed to test for cointegration, accounting for cross-sectional dependence and heterogeneous structures. The DH-G (Group-mean) statistic allows for heterogeneity of autocorrelation coefficients, while the DH-P (Panel) statistic assumes homogeneity:

$$DH_{Group} = \sum_{i=1}^{n} \widehat{S}_i \left(\widetilde{\varphi}_i - \widehat{\theta}_i \right)^2 \sum_{t=2}^{T} \hat{e}_{it-1}^2$$

(2)

$$DH_{Panel} = \hat{s}_n\left(\widetilde{\varphi}_i - \widehat{\theta}_i\right)^2 \sum_{i=1}^{n} \sum_{t=2}^{T} \hat{e}_{it-1}^2$$

(3)

3.3.5 Long-Run Estimation: DCCE-MG and AMG

For the estimation of long-run coefficients, we employ two complementary second-generation estimators:

Dynamic Common Correlated Effects Mean Group (DCCE-MG)

Developed by Chudik and Pesaran (2015), this estimator controls for cross-sectional dependence via cross-sectional averages, accounts for parameter heterogeneity using the Mean Group approach, and models the dynamic structure through lagged dependent variables.

Augmented Mean Group (AMG)

Proposed by Eberhardt and Teal (2010), this estimator controls for unobserved dynamic processes commonly affecting countries and allows for country-specific heterogeneous long-run coefficients through a common dynamic process.

The use of both estimators serves as mutual robustness checks, enhancing the reliability of the findings.

4 Results

4.1 Preliminary Diagnostics

4.1.1 Descriptive Statistics and Multicollinearity

Table 2 presents the descriptive statistics for all variables. The unemployment rate exhibits substantial variation (2.1% to 27.7%), reflecting the diverse labor market conditions across the sample countries and time periods. Per capita unemployment benefit expenditure shows high variation, ranging from $61 to $51,788 in real terms.

Table 2
Descriptive Statistics

Variable	N	Mean	SD	Min	Max
Unemployment Rate (%)	230	8.678	5.016	2.119	27.686
Employment Rate (%)	230	54.774	6.126	37.289	66.656
Ua per capita (Real $)	230	5,865.55	6,114.67	61.30	51,788.48
Tax Wedge (%)	230	41.614	5.862	28.078	53.196
GDP Growth (%)	230	1.802	3.759	−10.940	24.616
LFP Rate (%)	230	59.844	4.374	50.055	68.099

The Variance Inflation Factor (VIF) analysis confirms the absence of severe multicollinearity, with all VIF values substantially below the critical threshold of 10 (Gujarati and Porter 2009) (Mean VIF = 2.40).

Table 3
Variance Inflation Factor (VIF) Results

Variable	VIF	1/VIF
LFP	3.61	0.27
ln_ua_per	3.24	0.30
Tax	1.61	0.62
GDP	1.13	0.88
Mean VIF	**2.40**	

4.1.2 Cross-Sectional Dependence

Table 4 presents the Pesaran (2004) CD test results. The core variables—unemployment and employment rates, tax wedge, and labor force participation rate—exhibit statistically significant cross-sectional dependence at the 1% level. This finding confirms that unobserved common factors (such as global financial crises or technological shifts) affect the panel pervasively.

Table 4
Cross-Sectional Dependence Test Results (Pesaran CD Test)

Variable	N	T	CD Statistic	p-value
ln_unemployment	10	23	−3.188***	0.001
ln_employment	10	23	−2.962***	0.003
ln_ua_per	10	23	−1.642	0.101
Tax	10	23	−2.781***	0.005
GDP	10	23	−0.507	0.612
LFP	10	23	−3.007***	0.003
Note: *** denotes significance at the 1% level.				

4.1.3 Slope Homogeneity

The Pesaran and Yamagata (2008) tests reject the null hypothesis of slope homogeneity for both models (Table 5), confirming that the impact of unemployment assistance is strictly country-specific.

Table 5
Slope Homogeneity Test Results

Model	Test	Statistic	p-value	Result
Unemployment Model	Delta	10.161	0.000	Heterogeneous***
	Delta (adj.)	11.818	0.000	Heterogeneous***
Employment Model	Delta	10.862	0.000	Heterogeneous***
	Delta (adj.)	12.634	0.000	Heterogeneous***
Note: *** denotes rejection of the null hypothesis of slope homogeneity at the 1% level.				

Methodological Implication

The detection of both cross-sectional dependence and slope heterogeneity renders classical first-generation methods (such as Fixed or Random Effects) invalid, necessitating second-generation estimators.

4.2 Unit Root Analysis

Table 6 presents the CIPS unit root test results. The core variables—unemployment rate, employment rate, unemployment benefit expenditure, tax wedge, and labor force participation—are non-stationary at levels but become stationary after first differencing (I(1)). In contrast, GDP growth is stationary at levels (I(0)).

Table 6
CIPS Unit Root Test Results

Variable	Level CIPS	First Difference CIPS	Integration Order
ln_unemployment	−1.605	−2.842*	I(1)
ln_employment	−1.715	−2.805*	I(1)
ln_ua_per	−1.868	−3.690*	I(1)
Tax	−1.806	−4.208*	I(1)
GDP	−2.798*	—	I(0)
LFP	−0.767	−3.505*	I(1)
Note: * denotes statistical significance at the critical value threshold.			

The non-stationary structure of unemployment and employment series indicates hysteresis effects in the labor market—unemployment rising during crises may become persistent without policy intervention.

4.3 Cointegration Analysis

Table 7 presents the Westerlund Durbin-Hausman cointegration test results. Both test statistics strongly reject the null hypothesis of no cointegration for both models, confirming a long-run equilibrium relationship.

Table 7
Westerlund Durbin-Hausman Cointegration Test Results

Model	Statistic	Value	p-value	Result
Unemployment Model	DH-G (Group-mean)	301.038	0.000	Cointegrated***
	DH-P (Panel)	19.790	0.000	Cointegrated***
Employment Model	DH-G (Group-mean)	208.085	0.000	Cointegrated***
	DH-P (Panel)	41.031	0.000	Cointegrated***
Note: *** denotes significance at the 1% level. The null hypothesis posits no cointegration relationship.				

4.4 Long-Run Coefficient Estimation

4.4.1 DCCE-MG Results: Unemployment Model

Table 8 presents the DCCE-MG estimation results for the unemployment model. At the panel level, unemployment benefits show a negative but statistically insignificant effect (β = −0.212, p = 0.103). However, country-specific estimates reveal substantial heterogeneity.

Table 8
DCCE-MG Long-Run Estimation Results (Unemployment Model)

Country	Ua_per	p	Tax Wedge	p	GDP Growth	p	LFP Rate	p
Panel (Mean)	−0.212	0.103	−0.0002	0.985	−0.018***	0.003	0.012	0.751
Germany	0.135	0.681	0.042	0.332	−0.033	0.176	−0.036	0.679
Austria	−0.048	0.939	−0.009	0.900	−0.008	0.874	0.066	0.302
Denmark	−0.278	0.441	−0.052	0.530	−0.018	0.619	0.107	0.262
Finland	0.206	0.607	−0.005	0.870	−0.003	0.870	0.153**	0.025
France	−0.660**	0.013	0.003	0.891	0.008	0.460	−0.109**	0.018
Netherlands	−0.940***	0.000	0.011	0.706	−0.051**	0.048	−0.241	0.110
Portugal	−0.107	0.489	0.026	0.382	−0.035**	0.015	−0.039	0.554
Greece	−0.216**	0.041	0.014	0.402	−0.001	0.918	0.100	0.118
Ireland	0.354*	0.060	−0.045**	0.041	−0.005	0.457	0.078	0.474
Spain	−0.562	0.124	0.013	0.860	−0.035	0.434	0.039	0.227

*Note: *, **,* ******* denote significance at the 10%, 5%, and 1% levels, respectively. Standard errors are robust to heteroskedasticity and cross-sectional dependence.

Unemployment benefits significantly reduce unemployment in France (β = −0.660), the Netherlands (β = −0.940), and Greece (β = −0.216), while showing a positive effect in Ireland (β = 0.354).

4.4.2 DCCE-MG Results: Employment Model

Table 9 presents the DCCE-MG results for the employment model. At the panel level, the effect is positive but statistically insignificant (β = 0.023, p = 0.201).

Table 9
DCCE-MG Long-Run Estimation Results (Employment Model)

Country	Ua_per	p	Tax Wedge	p	GDP Growth	p	LFP Rate	p
Panel (Mean)	0.023	0.201	−0.001	0.527	0.001*	0.058	0.013**	0.011
Germany	−0.010	0.452	−0.001	0.704	0.004***	0.000	0.011***	0.000
Austria	0.024	0.561	−0.001	0.839	0.003	0.404	0.015*	0.084
Denmark	0.039***	0.000	0.011***	0.000	−0.002	0.103	0.015***	0.000
Finland	−0.112**	0.024	−0.005	0.178	−0.001	0.529	−0.011	0.153
France	0.099***	0.000	−0.001	0.438	−0.001	0.641	0.028***	0.000
Netherlands	0.047***	0.000	0.0003	0.815	0.003***	0.001	0.029***	0.000
Portugal	0.028	0.133	−0.001	0.789	0.001	0.432	0.011	0.336
Greece	0.057*	0.061	−0.002	0.637	0.001	0.798	0.026	0.158
Ireland	−0.007	0.526	0.004**	0.011	0.001	0.178	0.026***	0.004
Spain	0.069*	0.100	−0.017**	0.048	0.006	0.271	−0.019*	0.051

*Note: *, **,* ******* denote significance at the 10%, 5%, and 1% levels, respectively.

Unemployment benefits significantly increase employment in Denmark (β = 0.039), France (β = 0.099), and the Netherlands (β = 0.047), while decreasing employment in Finland (β = −0.112).

4.4.3 AMG Results: Unemployment Model

Table 10 presents the AMG estimation results for the unemployment model. At the panel level, unemployment benefits show a strongly significant negative effect (β = −0.409, p = 0.002).

Table 10
AMG Long-Run Estimation Results (Unemployment Model)

Country	Ua_per	p	Tax Wedge	p	GDP Growth	p	LFP Rate	p
Panel (Mean)	−0.409***	0.002	0.043*	0.088	−0.001	0.728	−0.029	0.369
Germany	−0.815***	0.000	0.062**	0.021	0.009	0.224	−0.228***	0.000
Austria	0.175	0.374	−0.022	0.594	0.009	0.359	−0.017	0.633
Denmark	−0.409***	0.000	−0.030	0.139	−0.008	0.263	0.009	0.694
Finland	0.270*	0.089	0.094***	0.000	−0.002	0.794	0.051*	0.096
France	−0.770***	0.000	0.033***	0.000	0.012***	0.000	−0.118***	0.000
Netherlands	−0.647***	0.000	0.006	0.820	0.010	0.408	−0.042	0.476
Portugal	−0.555***	0.000	0.048	0.197	−0.006	0.392	0.161***	0.000
Greece	−0.559***	0.000	−0.010	0.571	0.001	0.876	−0.080*	0.062
Ireland	0.041	0.772	0.008	0.807	−0.018**	0.034	−0.042	0.408
Spain	−0.821*	0.062	0.242***	0.006	−0.019	0.112	0.013	0.639

Note: *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

4.4.4 AMG Results: Employment Model

Table 11 presents the AMG results for the employment model. At the panel level, unemployment benefits show a significant positive effect (β = 0.031, p = 0.004).

Table 11
AMG Long-Run Estimation Results (Employment Model)

Country	Ua_per	p	Tax Wedge	p	GDP Growth	p	LFP Rate	p
Panel (Mean)	0.031***	0.004	−0.003*	0.067	−0.00004	0.918	0.018***	0.000
Germany	0.050***	0.000	−0.005	0.141	−0.001	0.508	0.030***	0.000
Austria	−0.007	0.541	0.00004	0.985	−0.0004	0.461	0.017***	0.000
Denmark	0.021***	0.000	0.004***	0.001	0.001	0.229	0.012***	0.000
Finland	−0.018	0.219	−0.008***	0.000	0.0001	0.891	0.012***	0.000
France	0.073***	0.000	−0.003***	0.000	−0.001***	0.000	0.027***	0.000
Netherlands	0.028***	0.000	−0.00003	0.981	−0.001	0.265	0.014***	0.000
Portugal	0.041***	0.000	−0.002	0.644	0.0001	0.903	0.004	0.387
Greece	0.083***	0.000	−0.003	0.380	−0.002*	0.050	0.034***	0.000
Ireland	−0.003	0.839	0.001	0.830	0.002**	0.018	0.016***	0.005
Spain	0.040	0.492	−0.015	0.305	0.001	0.346	0.017***	0.000

*Note: *, **, **** denote significance at the 10%, 5%, and 1% levels, respectively.

5 Discussion

5.1 Testing the Hypotheses

Hypothesis 1

(Moral Hazard vs. Liquidity): The AMG panel estimates indicate that unemployment benefits significantly reduce unemployment (β = −0.409, p = 0.002) and increase employment (β = 0.031, p = 0.004). These findings support the liquidity-match quality channel over the strict moral hazard hypothesis. Benefits do not appear to induce widespread labor market withdrawal; rather, they facilitate employment transitions.

Hypothesis 2

(Displacement Effect): The most striking finding is the substantial asymmetry between unemployment reduction and employment creation. The unemployment-reducing effect (β = −0.409) is approximately **13 times larger** than the employment-increasing effect (β = 0.031). This asymmetry strongly supports the displacement hypothesis: unemployment benefits primarily redistribute access to existing jobs rather than generating net employment. While benefits help individuals move up in the job queue, the total number of jobs in the economy grows only marginally.

This finding aligns with the theoretical predictions of Crépon et al. (2013) and Gautier et al. (2018), who documented displacement rates of 50% and 67%, respectively, in active labor market program evaluations. Our macro-level evidence suggests an even more pronounced displacement mechanism for passive benefits.

Hypothesis 3

(Institutional Heterogeneity): The DCCE-MG and AMG estimates reveal substantial cross-country variation, confirming institutional heterogeneity:

- **Strong positive effects** (both reducing unemployment and increasing employment): France, Netherlands, Denmark, Germany (AMG)
- **Mixed or null effects**: Austria, Portugal, Ireland
- **Negative employment effects**: Finland

The consistent positive results in France and the Netherlands can be explained by the "flexicurity" arrangements where passive protection, activation requirements, and public employment services capacity work together (Wilthagen and Tros 2004; Andersen and Svarer 2007). The negative results in Finland indicate that incentive-distorting effects can emerge when generous benefits are not supported by sufficient activation measures.

5.2 The Displacement Mechanism: A Closer Look

The asymmetry between unemployment and employment effects has profound policy implications. Consider the following decomposition:

1. A 1% increase in per capita unemployment benefits reduces the unemployment rate by 0.409% (AMG panel estimate).
2. The same increase raises the employment rate by only 0.031%.

If benefits merely facilitated job matching without displacement, we would expect symmetric effects (or employment growth exceeding unemployment reduction if labor force participation increases). The observed asymmetry suggests three potential mechanisms:

(a) Queue Reshuffling: Benefits enable recipients to maintain job search longer and compete more effectively for existing vacancies, displacing non-recipients or those with lower benefits.

(b) Labor Force Participation Effects: Some unemployment reduction may stem from discouraged workers exiting the labor force rather than entering employment—a statistical artifact rather than genuine improvement.

(c) Job Rationing: In labor markets with rigid wages or insufficient demand, the total number of jobs is effectively fixed. Benefits can only redistribute access to this fixed pool.

The policy implication is clear: unemployment benefits, while valuable for social protection and individual welfare, cannot substitute for job creation policies.

5.3 Robustness and Limitations

The use of both DCCE-MG and AMG estimators provides mutual robustness checks. While panel-level significance differs (AMG significant, DCCE-MG insignificant for the panel mean), the country-specific patterns are broadly consistent. This divergence reflects different treatments of common factors: DCCE-MG's stricter control for cross-sectional averages may absorb some of the policy effect, while AMG's common dynamic process captures unobserved trends differently.

Limitations:

1. **Country sample**: The analysis is limited to 10 OECD countries, potentially limiting generalizability.
2. **Mechanism measurement**: Data constraints prevent direct measurement of activation intensity, benefit duration, and sanctions—mechanisms that likely mediate the observed effects.
3. **Aggregation**: The macro-level analysis cannot distinguish between individual behavioral responses and general equilibrium effects without micro-level data.

6 Conclusion and Policy Implications

This study examined the macroeconomic effects of unemployment benefits on labor market outcomes using second-generation panel data methods across 10 OECD countries from 2000 to 2022. The findings contribute to ongoing debates about the optimal design of social protection systems.

6.1 Key Findings

1. **Unemployment benefits reduce unemployment and increase employment at the panel level**, challenging the strict moral hazard hypothesis. The AMG estimates indicate a significant unemployment-reducing effect ($\beta = -0.409$) and a modest but significant employment-increasing effect ($\beta = 0.031$).
2. **The displacement effect is substantial.** The approximately 13-fold asymmetry between unemployment reduction and employment creation suggests that benefits primarily redistribute access to existing jobs rather than generate new employment.
3. **Institutional context matters critically.** Countries with strong activation requirements and integrated labor market services (France, Netherlands, Denmark) show consistently positive outcomes, while Finland—with generous benefits but potentially weaker activation—shows negative employment effects.

6.2 Policy Recommendations

Based on these findings, three fundamental policy inferences are drawn:

Recommendation 1: Passive-Active Integration

The effectiveness of unemployment benefits depends on their integration with activation requirements and strong public employment services. Standalone passive transfers risk creating dependency without improving matching efficiency. The examples of France, the Netherlands, and Denmark reveal that the “golden triangle” of flexibility, security, and activation produces superior outcomes.

Implementation

Countries should condition benefit receipt on participation in job search assistance, training programs, or other activation measures, with graduated sanctions for non-compliance.

Recommendation 2: Complementary Job Creation Policies

Unemployment benefits facilitate access to existing jobs but do not create new employment. Policymakers should not expect passive transfers to generate employment growth without complementary demand-side interventions.

Implementation

Integrate unemployment benefit reforms with macroeconomic policies supporting aggregate demand, entrepreneurship incentives, sectoral development strategies, and public investment programs.

Recommendation 3: Context-Specific Policy Design

The substantial cross-country heterogeneity demonstrates the inadequacy of the “one-size-fits-all” approach. Policy transfers should account for the recipient country’s institutional capacity, public employment services infrastructure, and labor market structure.

Implementation

Conduct thorough institutional assessments before implementing reforms. Pilot programs with rigorous evaluation can identify context-appropriate designs.

6.3 Future Research Directions

1. **Mechanism identification**: Include activation intensity, sanctions practices, and public employment services indicators in the empirical model.
2. **Micro-macro integration**: Combine administrative micro-data with macro-panel methods to disentangle individual behavioral responses from general equilibrium effects.
3. **Crisis analysis**: Examine the automatic stabilizing function of unemployment benefits during economic downturns, potentially justifying counter-cyclical generosity.
4. **Expanded country coverage**: Extend the analysis to non-European OECD countries and emerging economies.

6.4 Concluding Remarks

This study contributes to shifting policy debates from ideological positions—“passive policies are harmful” versus “generous benefits are always beneficial”—toward evidence-based, context-sensitive assessments. The findings support neither extreme. Rather, the emerging message is: **Unemployment benefits, when designed correctly, supported by appropriate institutional infrastructure, and implemented in conjunction with complementary policies, can provide both social protection and modest employment gains. However, their capacity for net job creation is inherently limited, and efficacy is strictly context-dependent.**

This balanced, nuanced, and evidence-based approach has the potential to make a lasting contribution to both academic literature and policymaking.

Declarations

Competing Interest:

The author declares no conflicts of interest.

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Author Contribution

Associate Professor Abdulkadir Altınsoy conceptualized the study, determined the research methodology, and provided academic supervision and critical review of the manuscript. Yusuf Eşiyok conducted the data analysis, performed the econometric estimations, and drafted the original manuscript as part of his doctoral research. Both authors read and approved the final manuscript.

Data Availability

The data used in this study are publicly available from the World Bank World Development Indicators (WDI) and OECD Social Expenditure Database (SOCX).

References

1. Andersen TM, Svarer M (2007) Flexicurity: Labour market performance in Denmark. CESifo Economic Stud 53(3):389–429. https://doi.org/10.1093/cesifo/ifm015

2. Bassanini A, Duval R (2009) Unemployment, institutions, and reform complementarities: re-assessing the aggregate evidence for OECD countries. Oxf Rev Econ Policy 25(1):40–59. https://doi.org/10.1093/oxrep/grp004
3. Blanchard O, Wolfers J (2000) The role of shocks and institutions in the rise of European unemployment: the aggregate evidence. Econ J 110(462):1–33. https://doi.org/10.1111/1468-0297.00518
4. Card D, Chetty R, Weber A (2007) Cash-on-hand and competing models of intertemporal behavior: new evidence from the labor market. Q J Econ 122(4):1511–1560. https://doi.org/10.1162/qjec.2007.122.4.1511
5. Chetty R (2008) Moral hazard versus liquidity and optimal unemployment insurance. J Polit Econ 116(2):173–234. https://doi.org/10.1086/588585
6. Chudik A, Pesaran MH (2015) Common correlated effects estimation of heterogeneous dynamic panel data models with weakly exogenous regressors. J Econ 188(2):393–420. https://doi.org/10.1016/j.jeconom.2015.03.007
7. Crépon B, Duflo E, Gurgand M, Rathelot R, Zamora P (2013) Do labor market policies have displacement effects? Evidence from a clustered randomized experiment. Q J Econ 128(2):531–580. https://doi.org/10.1093/qje/qjt001
8. Diamond PA (1982) Wage determination and efficiency in search equilibrium. Rev Econ Stud 49(2):217–227. https://doi.org/10.2307/2297271
9. Eberhardt M, Teal F (2010) Productivity analysis in global manufacturing production. Economics Series Working Papers 515, University of Oxford
10. Elmeskov J, Martin JP, Scarpetta S (1998) Key lessons for labour market reforms: evidence from OECD countries' experience. Swed Econ Policy Rev 5(2):205–252
11. Gautier P, Muller P, van der Klaauw B, Rosholm M, Svarer M (2018) Estimating equilibrium effects of job search assistance. J Labor Econ 36(4):1073–1125. https://doi.org/10.1086/697513
12. Gujarati DN, Porter DC (2009) Basic econometrics, 5th edn. McGraw-Hill/Irwin, New York
13. Hall PA, Soskice D (2001) Varieties of capitalism: the institutional foundations of comparative advantage. Oxford University Press, Oxford. https://doi.org/10.1093/0199247757.001.0001
14. Katz L, Meyer B (1990) Unemployment insurance, recall expectations, and unemployment outcomes. Q J Econ 105(4):973–1002. https://doi.org/10.2307/2937881
15. Krueger AB, Meyer BD (2002) Labor supply effects of social insurance. In: Auerbach AJ, Feldstein M (eds) Handbook of Public Economics, vol 4. Elsevier, pp 2327–2392. https://doi.org/10.1016/S1573-4420(02)80012-X
16. Kyyrä T (2023) The effects of unemployment assistance on unemployment exits. Int Tax Public Finance 30:1457–1480. https://doi.org/10.1007/s10797-022-09765-7
17. Lalive R (2007) Unemployment benefits, unemployment duration, and post-unemployment jobs: a regression discontinuity approach. Am Econ Rev 97(2):108–112.

https://doi.org/10.1257/aer.97.2.108

18. Lalive R, van Ours JC, Zweimüller J (2006) How changes in financial incentives affect the duration of unemployment. Rev Econ Stud 73(4):1009–1038. https://doi.org/10.1111/j.1467-937X.2006.00406.x
19. Landais C, Michaillat P, Saez E (2018) A macroeconomic approach to optimal unemployment insurance: applications. Am Economic Journal: Economic Policy 10(2):182–216. https://doi.org/10.1257/pol.20160462
20. McCall JJ (1970) Economics of information and job search. Q J Econ 84(1):113–126. https://doi.org/10.2307/1879403
21. Meyer B (1990) Unemployment insurance and unemployment spells. Econometrica 58(4):757–782. https://doi.org/10.2307/2938349
22. Mortensen DT (1970) Job search, the duration of unemployment, and the Phillips curve. Am Econ Rev 60(5):847–862
23. Mortensen DT (1977) Unemployment insurance and job search decisions. Ind Labor Relat Rev 30(4):505–517. https://doi.org/10.1177/001979397703000410
24. Mortensen DT, Pissarides CA (1994) Job creation and job destruction in the theory of unemployment. Rev Econ Stud 61(3):397–415. https://doi.org/10.2307/2297896
25. Nickell S (1997) Unemployment and labor market rigidities: Europe versus North America. J Economic Perspect 11(3):55–74. https://doi.org/10.1257/jep.11.3.55
26. Pellizzari M (2006) Unemployment duration and the interactions between unemployment insurance and social assistance. Labour Econ 13(6):773–798. https://doi.org/10.1016/j.labeco.2005.10.003
27. Pesaran MH (2004) General diagnostic tests for cross section dependence in panels. CESifo Working Paper Series No. 1229. https://doi.org/10.2139/ssrn.572504
28. Pesaran MH (2006) Estimation and inference in large heterogeneous panels with a multifactor error structure. Econometrica 74(4):967–1012. https://doi.org/10.1111/j.1468-0262.2006.00692.x
29. Pesaran MH (2007) A simple panel unit root test in the presence of cross-section dependence. J Appl Econom 22(2):265–312. https://doi.org/10.1002/jae.951
30. Pesaran MH, Yamagata T (2008) Testing slope homogeneity in large panels. J Econ 142(1):50–93. https://doi.org/10.1016/j.jeconom.2007.05.010
31. Pissarides CA (2000) Equilibrium unemployment theory, 2nd edn. MIT Press, Cambridge
32. Schmieder JF, von Wachter T, Bender S (2016) The effect of unemployment benefits and nonemployment durations on wages. Am Econ Rev 106(3):739–777. https://doi.org/10.1257/aer.20141566
33. Stigler GJ (1962) Information in the labor market. J Polit Econ 70(5):94–105. https://doi.org/10.1086/258727
34. Vroman W (2001) Unemployment insurance and unemployment assistance: a comparison. Urban Institute, Washington DC

35. Westerlund J (2007) Testing for error correction in panel data. Oxf Bull Econ Stat 69(6):709–748. https://doi.org/10.1111/j.1468-0084.2007.00477.x
36. Wilthagen T, Tros F (2004) The concept of 'flexicurity': a new approach to regulating employment and labour markets. Transfer: Eur Rev Labour Res 10(2):166–186. https://doi.org/10.1177/102425890401000204

Figures

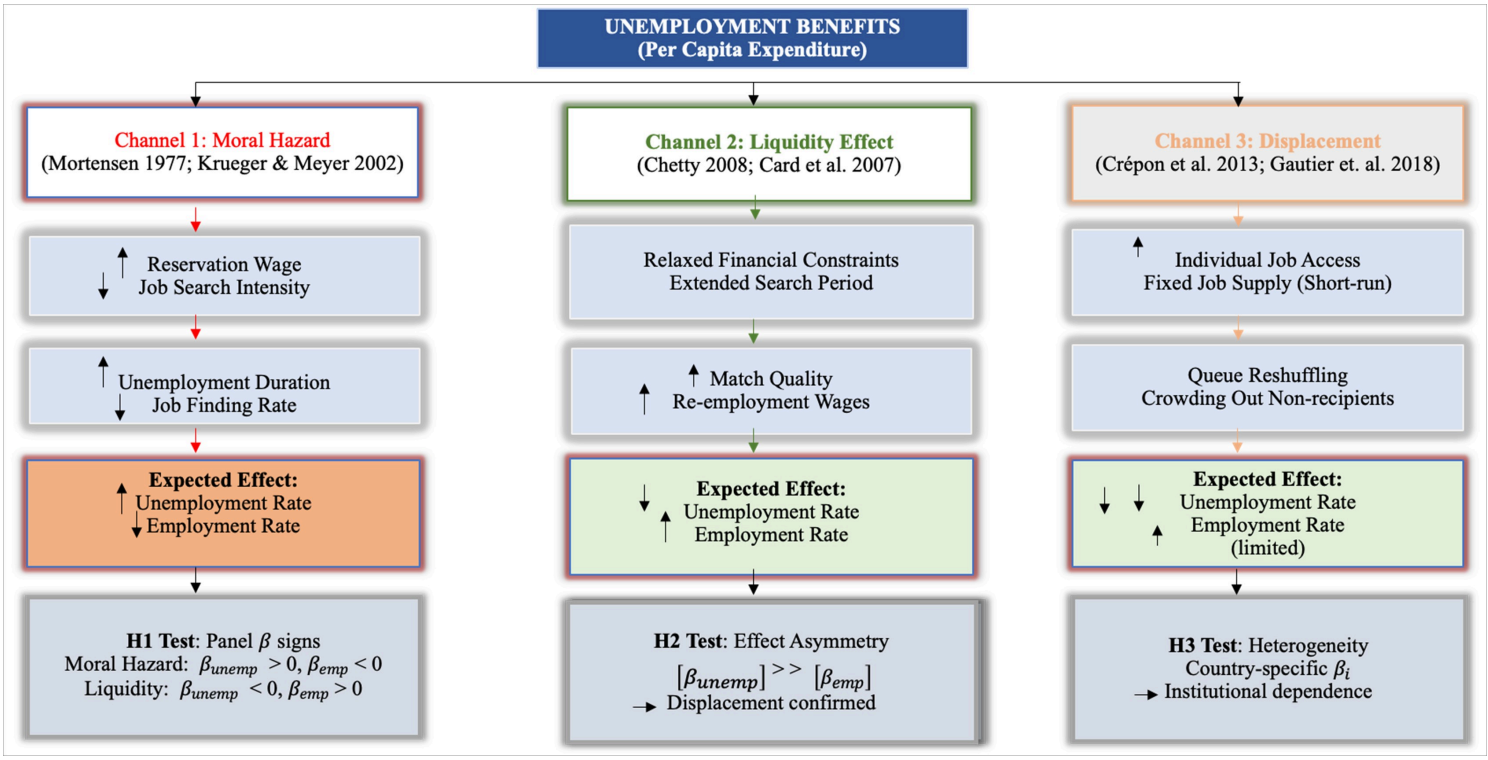


Figure 1

Conceptual Framework – Theoretical Channels of Unemployment Benefits Labor Market Effects

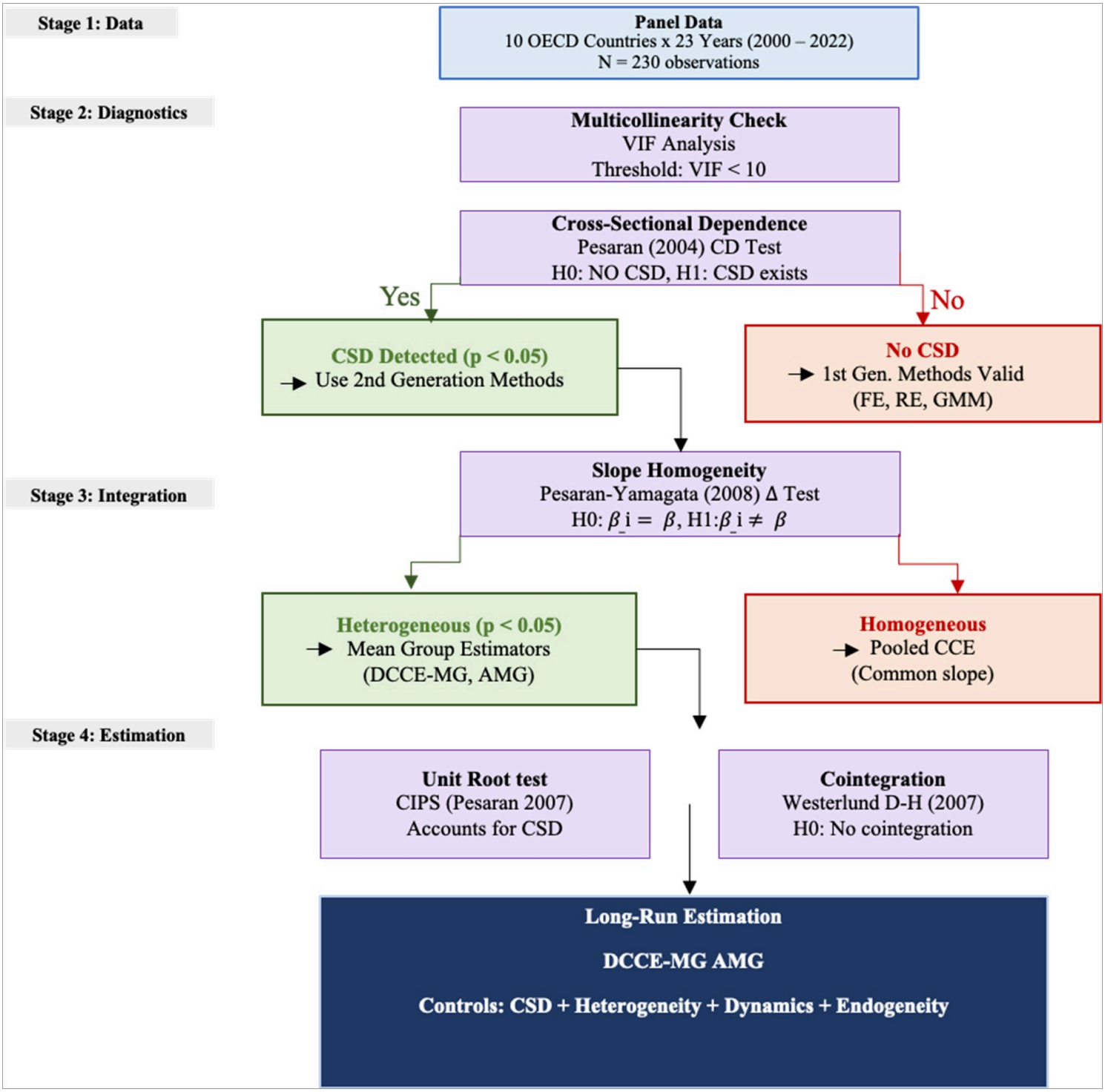


Figure 2

Methodological Flowchart