

# « The ambiguous trade-offs between Inflation and Unemployment : Evidence from Surveys of Happiness »



**JALAL EL OUARDIGHI & FRANCIS MUNIER**

**FACULTÉ DES SCIENCES ECONOMIQUES ET DE  
GESTION  
UNIVERSITÉ DE STRASBOURG**

# SCHEDULE



- **Salient facts : Happiness – Unemployment – Inflation**
  - How does unemployment affect happiness?
  - How does inflation affect happiness?
  - Trade-offs between Inflation and Unemployment
- **Our research**
  - The database
  - The model
  - The results
  - Some perspectives

# SEMINAL STUDIES



- Di-Tella, R., MacCulloch, R.J. and Oswald, A.J., 2001. “Preferences over Inflation and Unemployment: Evidence from Surveys of Happiness,” *American Economic Review* 91:1 (March), 335-341
- Clark, Andrew E. “Unemployment as a Social Norm: Psychological Evidence from Panel Data.” *Journal of Labor Economics* 21:2 (2003):
- Clark, Andrew E., and Andrew J. Oswald. “Unhappiness and Unemployment.” *Economic Journal* 104: 424 (1994): 648-659
- Winkelmann, Rainer, and Liliana Winkelmann. “Why Are the Unemployed So Unhappy? Evidence from Panel Data.” *Economica* 65:257 (1998): 1–15.
- Di Tella, Rafael, Robert J. MacCulloch and Andrew J. Oswald (2003). The Macroeconomics of Happiness. *Review of Economics and Statistics* 85(4): 809-827.
- Luechinger, Simon, Stephan Meier, and Alois Stutzer. “Why Does Unemployment Hurt the Employed? Evidence from the Life Satisfaction Gap between the Public and the Private Sector.” *Journal of Human Resources*, Volume 45 (2010), Issue 4

Salient facts : Happiness – Unemployment – Inflation  
How does unemployment affect happiness ?



Two approaches

Keynes and the ‘new classical macroeconomics’

*Involuntary versus Voluntary*

# Salient facts : Happiness – Unemployment – Inflation

## How does unemployment affect happiness ?



```
graph TD; A[Personal unemployment] --- B[Substantial negative effect on the happiness]; A --- C[Refer to the "pure" effect of being unemployed]; A --- D[The drop in happiness may, be attributed to psychological and social factors];
```

Personal unemployment

Substantial negative effect  
on the happiness

Refer to the “pure” effect  
of being unemployed

The drop in happiness  
may,  
be attributed  
to psychological  
and social factors

# Salient facts : Happiness – Unemployment – Inflation

## How does unemployment affect Happiness ?

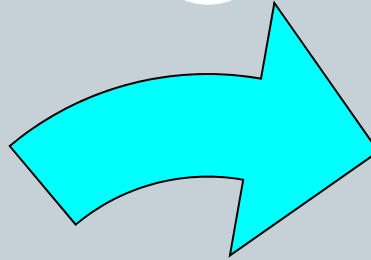


The main empirical researches based on happiness differ with the view held by the new classical macroeconomists

For those affected, being made redundant is considered to be a most unfortunate event, creating major unhappiness

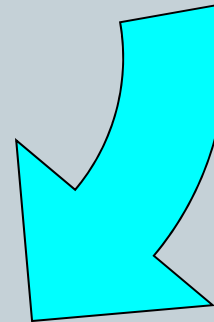
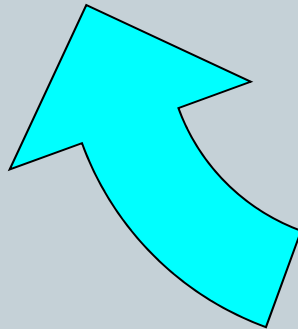
# Salient facts : Happiness – Unemployment – Inflation

## How does unemployment affect Happiness ?



Unhappy people

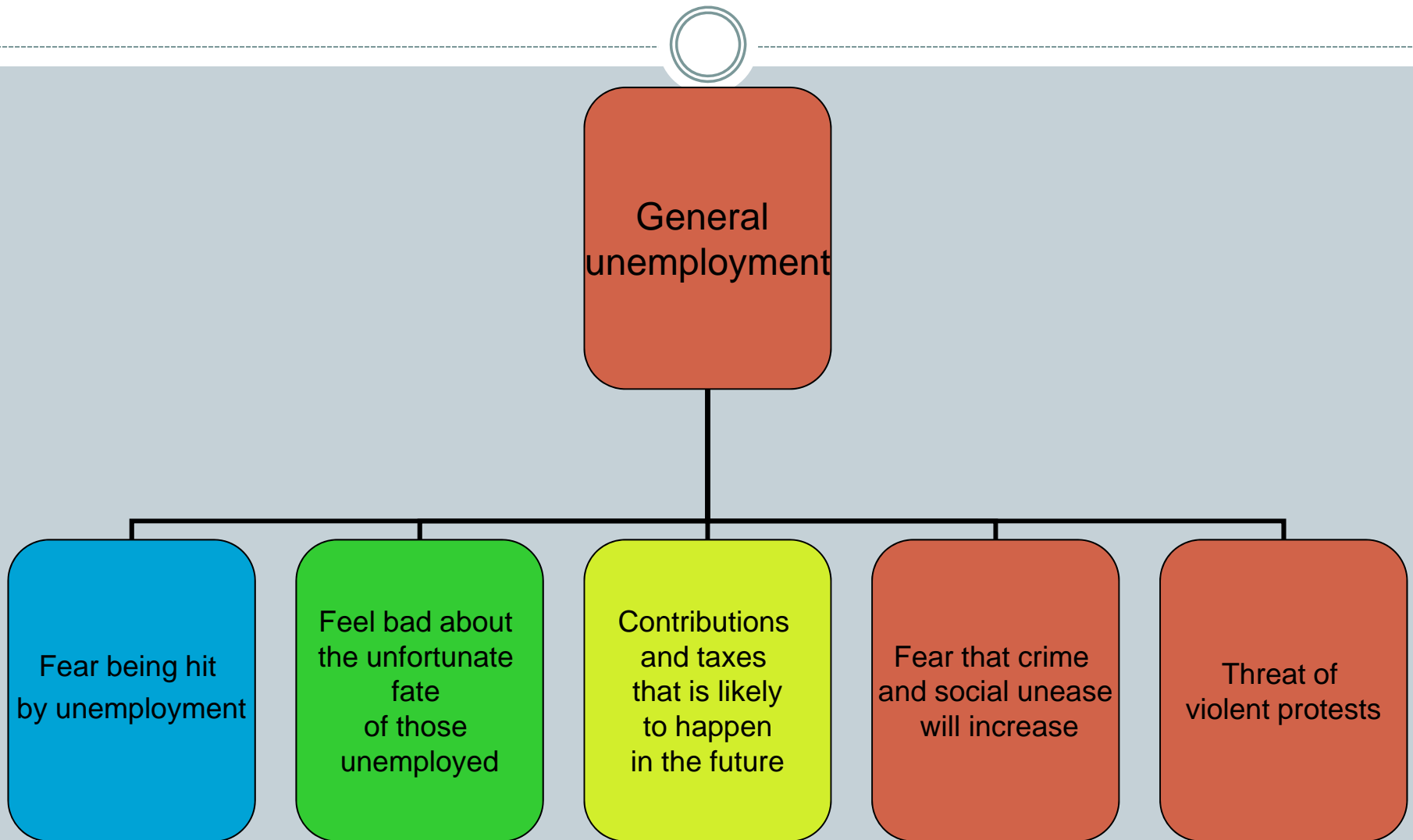
Do not perform well



Therefore are laid off

# Salient facts : Happiness – Unemployment – Inflation

## How does unemployment affect happiness ?



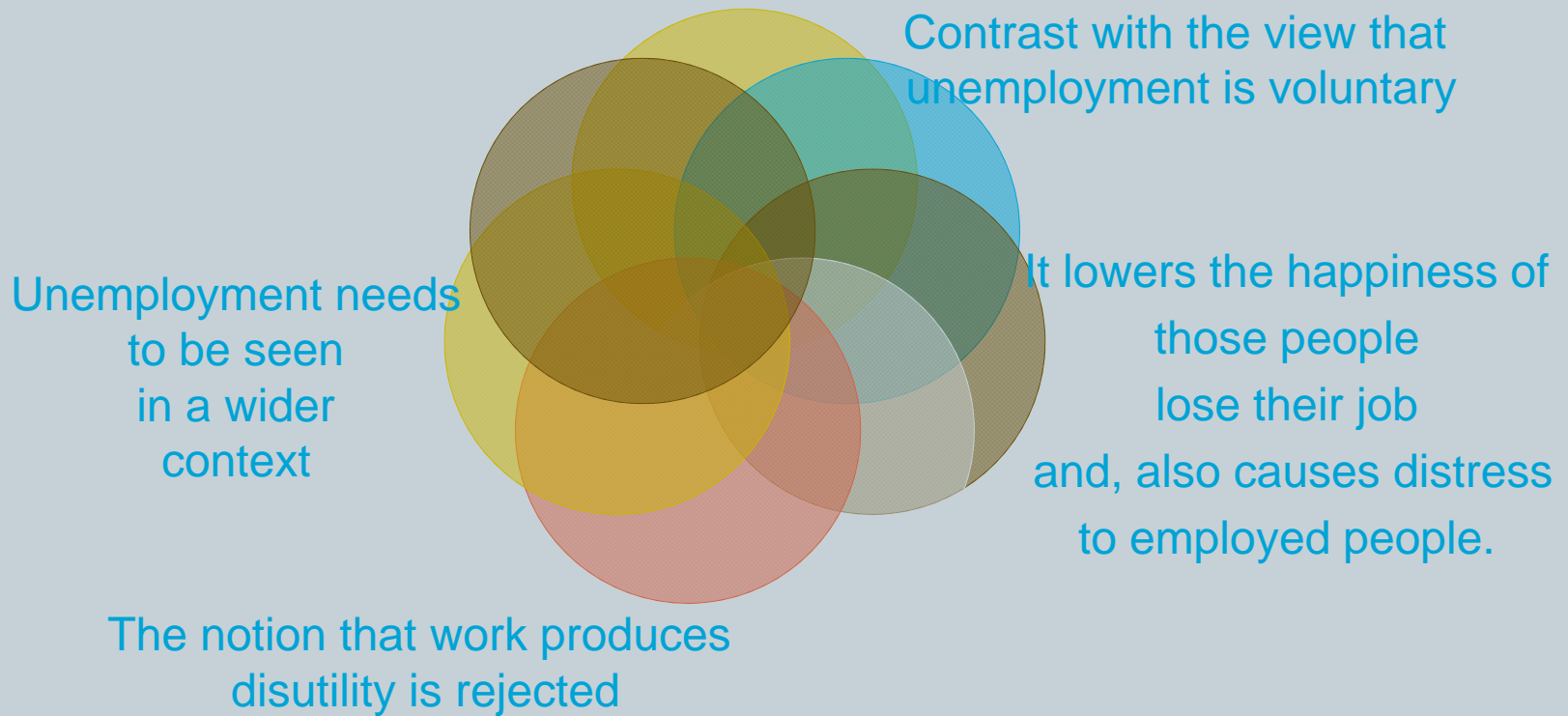


# Salient facts : Happiness – Unemployment – Inflation

## How does unemployment affect happiness ?



### Unemployment causes major unhappiness



**Salient facts : Happiness – Unemployment – Inflation**  
**How does inflation affect happiness?**

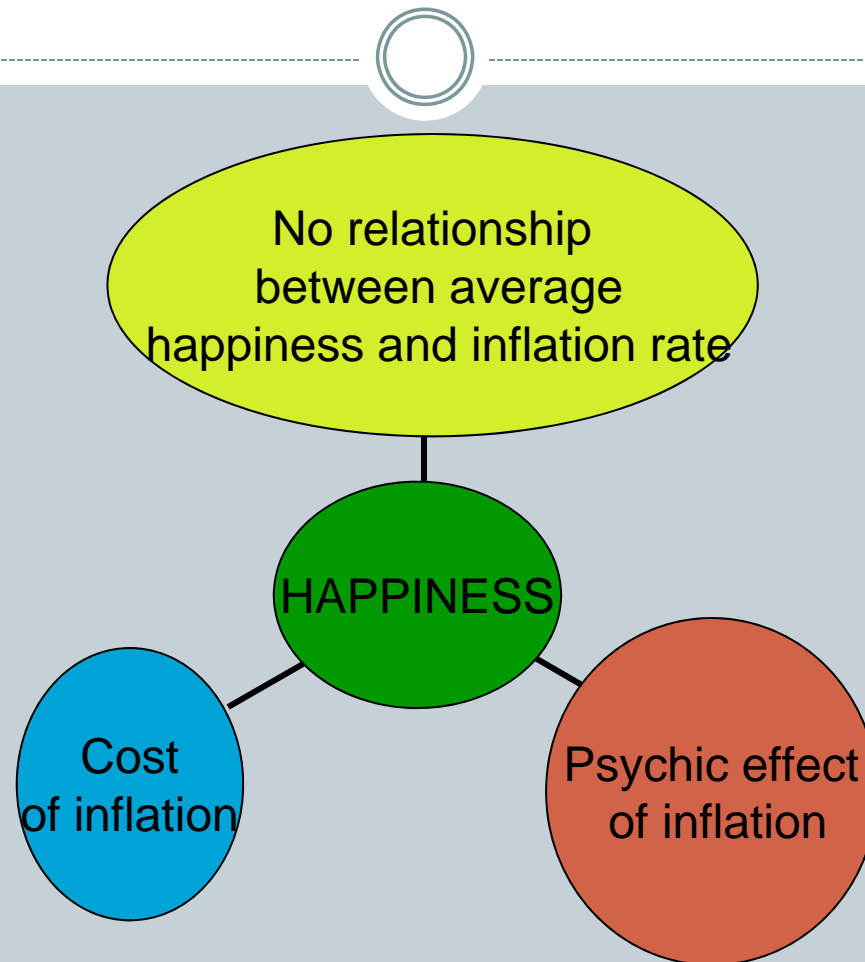


**Wage earners, as well as owners of nominal assets such as cash or bonds, risk being the losers.**

**Economics starts with this distinction between anticipated and unanticipated inflation...when analyzing how inflation affects individuals**

# Salient facts : Happiness – Unemployment – Inflation

## How does inflation affect happiness?



# Salient facts : Happiness – Unemployment – Inflation

## Trade-offs between Inflation and Unemployment



*How much, on average, must a country reduce its inflation in order to tolerate a rise of one point in unemployment ?*

# Salient facts : Happiness – Unemployment – Inflation

## Trade-offs between Inflation and Unemployment



### The so-called 'misery index' :

If unemployment rises by 5 points, the inflation rate must decrease by 8.5 points to keep the population equally satisfied.

# Our research - database



World Database of Happiness

DATABASE

Macroeconomic variables as the 'GDP per capita' and the rate of growth rate are from 'The Groningen Growth and Development Center database'

The series of inflation and unemployment rates are extracted from OECD

# Our research - database



‘How satisfied are you with the life you lead? Very satisfied, fairly satisfied, not very satisfied or not at all satisfied’.

The variable LS measures the average level of life satisfaction in a given country at time t.

**Example:  $i$ =France,  $t$ =2010**

Question	<i>not at all satisfied'</i>	<i>not very satisfied</i>	<i>fairly satisfied</i>	<i>very satisfied</i>
Codage	1	2	3	4
For N=1020	4%	13%	63%	20%
variable $LS_{it} = 2.99$	$0.04 \times 1 + 0.13 \times 2 + 0.63 \times 3 + 0.20 \times 4 = 2.99$			

# Our research - model



$$LS_{it} = \beta_0 + \beta_1 \pi_{it} + \beta_2 u_{it} + \mu_i + \eta_t + v_{it}$$

where  $v_{it}$  is a random term assumed independently and identically distributed, with mean zero and variance  $\sigma_v^2$ . The specification rests upon the hypothesis according to which the impact of the macroeconomic variables on the level of life satisfaction is the same for all countries (that is, the economies' behaviour is homogeneous). In practice, the heterogeneity of behavior may be taken into account by the specific effects  $\mu_i$  and  $\eta_t$



# Our research - Results



**Inflation rate has a minor impact on life satisfaction**

**Unemployment rate effect proves to be very significant**

# Our research - Results



The influence of inflation and unemployment rates is not the same according to countries’.

- We observe that only the French case show that both the two variables act significantly on the life satisfaction.

# Our research - Results



**Table 2: Predicting individual estimations:  $LS = f(\text{Inflation}, \text{Unemployment})$**

Dependent variable: life satisfaction UE12, 1985-2009 (T=25, N=12)

Country	Random Model		Fixed Model	
	Inflation	Unemployment	Inflation	Unemployment
Belgium	0.0046	-0.0314	0.0103	-0.0393 ***
Denmark	-0.0487	-0.0063	-0.0652 ***	-0.0039
France	-0.0486	-0.0396	-0.0593 ***	-0.0457 ***
Ireland	-0.0105	-0.0150	-0.0105	-0.0151 ***
Italy	-0.0124	0.0049	-0.0169	0.0130
Luxembourg	0.0081	0.0091	0.0139	0.0198 **
Netherlands	-0.0016	-0.0171	0.0027	-0.0167 ***
United Kingdom	-0.0072	-0.0117	-0.0074	-0.0112
Greece	-0.0058	-0.0184	-0.0043	-0.0088
Portugal	0.0063	-0.0328	0.0065	-0.0344 ***
Spain	0.0112	-0.0188	0.0128 *	-0.0192 ***
Germany	0.0113	-0.0275	0.0146	-0.0293 ***

Notes: (\*\*\*), (\*\*), and (\*) significance at 1%, 5% and 10% levels respectively.

# Our research - Some perspectives



## • Life Satisfaction and the Philips Curve

**Estimation results: Phillips curve and life satisfaction specification**  
EU 12, 1985-2009 (T=25, N=12), Estimation method : random effect

(1)	(2)	(3)
	Phillips curve	Life satisfaction
Constant	2.6990 ***	3.4442 ***
Initial inflation rate $\pi_{i0}$	0.3556 ***	-0.0377 ***
Unemployment rate $u_{it}$	-0.2301 ***	-0.0143 ***
Speed of nominal convergence $\lambda$	4.1%	
Implied inflation rate effect $\beta_1$		-0.1060
Implied unemployment rate effect $\beta_2$		-0.0389

# Our research - Some perspectives

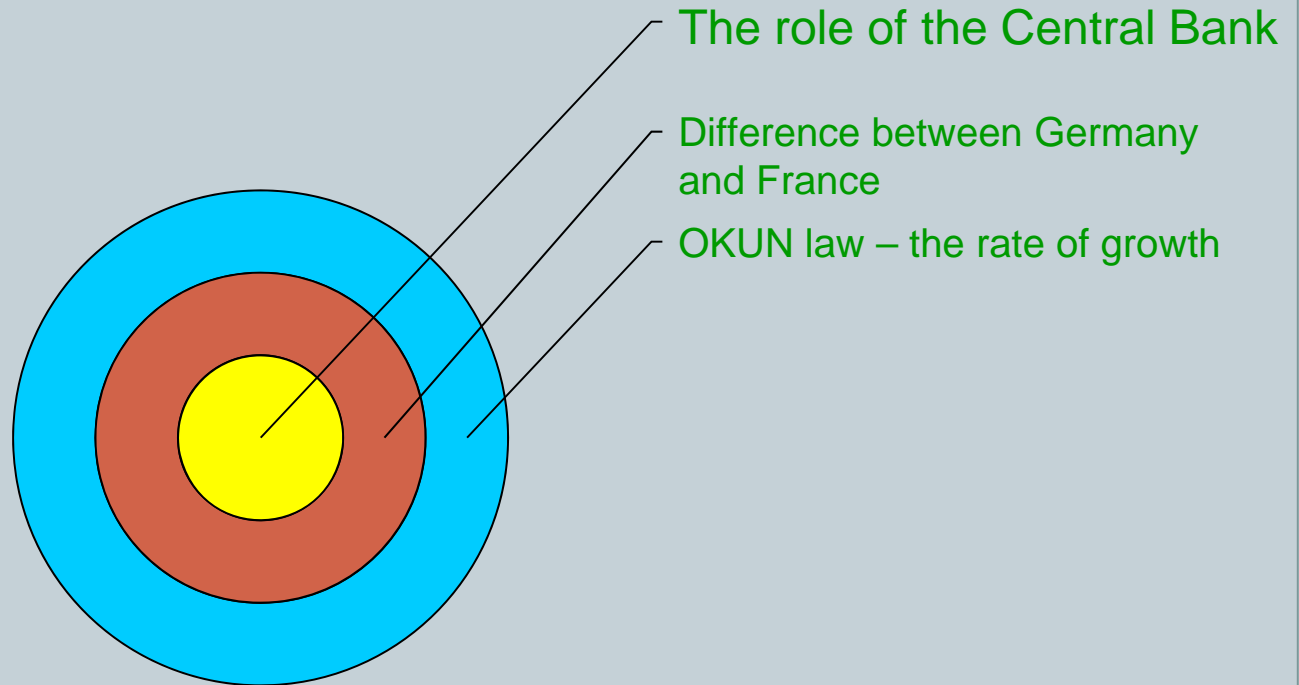


The results show that the effect of inflation included the Philips Curve is now significant

The effect of rising unemployment (-3.89%) is offset by the interactive effect of lower inflation (-0.2301) and its effect on life satisfaction (-0.1060).

This implies that the increase in the unemployment rate does a drop of 1.43% for life satisfaction.

# Our research - Some perspectives



Are you happy ?

