Do Institutions and Culture Matter for Business Cycles?

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Introduction

- Understanding the nature of economic fluctuations and their regional interconnections has been gaining importance as the process of globalization continues unabated.
- See, for example, Aguiar and Gopinath (2007); Benczur and Ratfai (2010); Garcia Cicco et al. (2010); Male (2011); Altug and Bildirici (2012); or Kose, et al. (2012).
- Recent European Union (EU) initiatives, i.e., the Union for Mediterranean partnership, are generating interest in the nature of cyclical fluctuations of the Mediterranean.
- Canova and Schlaepfer (2011) and Canova and Ciccarelli (2012) examine cyclical fluctuations in the region and relate them to changes in trade and financial integration.

Introduction

- In this paper, we characterize cyclical fluctuations in the region and associate them with the potential institutional and cultural determinants of the individual countries.
- Our interest in institutional and cultural factors is motivated in part by current events, such as the Arab Spring uprisings, and by the North-South divide, that is increasingly shaping the discourse on the European debt crisis.
- The link between institutions affect economic performance was enunciated by North (1990). Other recent studies include Knack and Keefer (1995), Hall and Jones (1999), Acemoglu, et al. (2001) , Rodrik, et al. (2002), and Easterly and Levine (2003).

Introduction

- Weber (1904) is widely credited with the idea that culture is inextricably linked with economic performance.
- More recently, Greif (1994), Guiso et al. (2004, 2006) and Fernandez and Fogli (2009), and Tabellini (2010) have studied its impact on growth and other economic indicators.
- There also exist papers that stress the role of institutions and culture on labor market outcomes - see, for example, Blanchard and Summers (1986), Blanchard et al. (1995), Bentotilla and Ichino (2008) and Alesina and Giuliano (2010), amongst others.
- Despite accumulating evidence, little work that relates such factors to cyclical phenomena.

Introduction

- Some early examples that relate institutional features to cyclical phenomena - Canova et al. (2012) for the Euro area and Altug et al. (2012a) for a larger sample of countries.
- We consider a sample that includes up to 45 European, Middle Eastern and North African countries.
  - We document the cyclical characteristics of three broad groups of countries – EU, non-EU and Mediterranean - and of three subgroups - non-EU Mediterranean, Middle East and North African.
  - We then ask whether differences in the volatility, persistence, total output loss, and comovement of cyclical fluctuations for the Mediterranean countries relative to an EU average can be associated with similar differences in macroeconomic, institutional and cultural indicators using rank correlation analysis.

Business Cycle Facts

- We compute turning points for "classical" cycles and construct cyclical features using the resulting turning points.
- Classical cycles do not control for trends, but the turning point dates calculated in this way for the US or the EU tend to reproduce NBER and CEPR classifications.
- To date turning points we use real GDP or, in its absence, industrial production. We chose a single indicator, rather than multiple indicators, because output and unemployment are cyclically "de-coupled" in many developing economies (see Altug et al., 2012b) and more recently, for more advanced countries.

Business Cycle Facts

- Individual country cyclical characteristics are summarized via average measures of duration (persistence), and amplitude (variability) of the fluctuations, and of cumulated output loss (the cost of fluctuations).
- Co-movements across countries are summarized via a concordance index and a diffusion index.
- The concordance index measures the fraction of times two countries are in phase over the business cycle (see Harding and Pagan, 2006).
- The diffusion index shows the fraction of countries sharing the same phase at any given time (see Chang and Hwang, 2011).

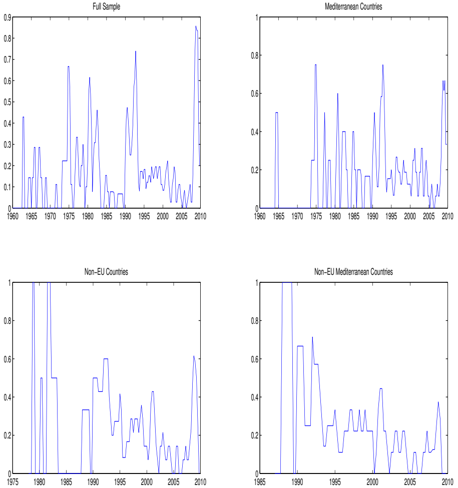
Business Cycle Facts

- The duration of contractions is similar in the three groups but M. Eastern countries have significantly shorter contractions than the EU.
- The amplitude of contractions is significantly larger in non-EU and in Mediterranean countries, and the non-EU Mediterranean and N. African groups experience very deep contractions.
- Expansions are generally shorter in the Mediterranean than elsewhere; countries in the M. East and N. Africa display expansions with short duration, and differences with the EU15 are significant.
- According to the *cumulated* output change measure, the non-EU Mediterranean and N. African countries suffer most during contractions, while the M. East and N. African countries experience the smallest output gain during expansions.

Business Cycle Facts

- These findings suggest that within the Mediterranean group, non-EU, Middle East and North African countries exhibit a boom-bust scenario where large output falls during contractions are followed by strong but short lived output increases in expansions.
- The concordance of turning points within the Mediterranean or within the non-EU Mediterranean is low and each subgroup is primarily connected with the EU-15 rather than with other subgroups.
- Thus, Mediterranean fluctuations are peculiar, heterogeneities are large, and different groups of countries display disparate cyclical dynamics.

Diffusion Index



Macroeconomic Indicators

- Openness, proxied by the sum of exports and imports as a percentage of GDP;
- The composition of production, measured by the income share of industrial value added ;
- The level of development, measured the log of GDP per-capita, measured in 2000 US$;
- The level of financial development, measured by the credit extended to the private sector as a ratio to GDP;
- The composition of demand, proxied by gross saving rate;.
- The distance from the EU - proxied here by average distance from Germany;
- A dummy variable capturing whether the country practices inflation targeting or not.

Institutional Indicators

The institutional indicators seeks to measure the overall quality of political and economic institutions in a country.

- An aggregate index of the Worldwide Governance indicators, (denoted by *Gov*) (see Kaufman et al., 2009).
- The Civil Liberties Index prepared by the Freedom House (denoted by *FH*), available annually from 1972 to 2008.
- An index of central bank independence (denoted by *CBI*) due to Cukierman et al. (1992, 2002) and extended by Arnone *et al.* (2007).

Cultural Indicators

- One set of indicators comes from the study of organizational motivation across countries run by Geert Hofstede (http://geert-hofstede.com). These include *power distance*, *individualism*, *masculinity/femininity*, and *uncertainty avoidance*.
- A second source is given by the World Values Survey (WVS),(see Inglehart et. al, 2000).
- We use four separate indicators referring to mutual trust and respect for others (labeled *respect* and *trust*) and two pertaining to individualism (labeled *control* and *obedience*) (see Tabellini, 2010).
- We also use three other indicators referring to family ties, labeled *family important*, *parental duties*, and *respect and love for family* (see Alesina and Guiliano, 2010).

Methodology

- Let the vector of business cycle characteristics be given by $w_i = (Edur_i, Eampl_i, Cdur_i, Campl_i, Ccum_i, Ecum_i)$.
  - Compute the Spearman rank correlation between $(w_i - w_{EU})$ and $(Macro_i - Macro_{EU})$, component by component.
  - Then compute the rank correlations between $(w_i - w_{EU})$ and $(Inst_i - Inst_{EU})$, conditional on $(Macro_i - Macro_{EU})$.
  - Finally, compute the rank correlations between $(w_i - w_{EU})$ and $(Cult_i - Cult_{EU})$, conditional on $(Inst_i - Inst_{EU})$ and $(Macro_i - Macro_{EU})$.
- For the concordance index, proceed in the same manner by replacing the elements of w_i with $(Conc_{ij} - Conc_{EU})$.
- To account for correlation among the macroeconomic indicators, we also compute the (conditional) rank correlations using the differences of the first principal component of the macroeconomic indicators denoted $(Macro_i - Macro_{EU})$.

Methodology

- The Spearman correlation measures non-parametrically the strength of the association between the ranks of two sets of observations.
- It differs from the standard Pearson correlations, which measure the strength of the linear association, because it allows for a general functional relationship.
- A value of -1 indicates perfect disagreement in the rankings of the two samples; a value of 0 that the rankings are independent; and a value of $+1$ that the rankings perfectly agree.
- Because we are interested in the incremental value of institutional and cultural indicators, we compute conditional rank correlations. To break the reverse link that may potentially affect inference, we use pre-sample values of the indicators.

What Drives Mediterranean Business Cycles?

- We showed that cyclical dynamics in the Mediterranean differ from those of the EU and, within the region, national idiosyncrasies are important.
- Canova and Ciccarelli (2012) and Canova and Schlaepfer (2011) showed that standard development, wealth, monetary, trade and financial indicators are unable to explain these differences.
- Consider first the macroeconomic indicators.
  - Overall, differences in the individual macroeconomic indicators are weakly related to differences in cyclical features.
  - However, once we aggregate the information using the first principal component of macroeconomic indicators, indicators that differ from those of the EU imply deeper contractions and larger output losses in recessions.

Business Cycle Synchronization

- The individual macroeconomic indicators have more of a role. Here differences in
  - the composition of value added,
  - the credit to GDP ratio,
  - the saving to GDP ratio, and
  - whether a country practices inflation targeting

  account for some of the differences in the concordance of turning points relative to the EU15 average. item Differences in the industry component of value added have the highest rank correlations.
- Thus, as in Imbs (2004), the sectoral composition of output explains why the timing of Mediterranean and EU cyclical phases are different.

Institutional indicators

Fo the business cycle characteristics,

- The majority of the rank correlations are not significantly different from zero.
- For the full Mediterranean group they are all equal to zero, and only differences in the Freedom House index and in the CB index seem to occasionally matter, though with puzzling signs. For business cycle synchronization,
- Differences in the three institutional indicators correlate well with differences in the synchronicity of cyclical fluctuations, and this is true for all three groups we consider.
- Interestingly, countries whose governance and civil liberties indicators are similar to the those of the EU, have cyclical fluctuations that are more in phase with those of the EU.

Institutional Indicators: Related Literature

- Altug et al. (2012) also considered the relationship between business cycle features and institutional indicators but for a larger set of countries and find that composite indices of governance and cyclical synchronization are related.
- However, they also find that better governance is associated with stronger expansions while central bank independence mitigates the severity of contractions, which we do not find.
- Hence, the Mediterranean is peculiar and this makes it worthwhile to investigate whether other factors may matter in the basin.

Cultural Indicators

- For the Mediterranean group,
  - only relative differences in the Uncertainty Avoidance Index (Respect and Love for Parents) are significantly related to differences in the cumulative output loss in recessions (the durations of expansions), and
  - relative differences in the perception of uncertainty are associated with larger cumulative output losses relative to the EU.
- For the non-EU Mediterranean group,
  - the rank correlations between differences in Respect and Love for Parents and Parental Duties and differences in the duration of expansions are significant - the larger are these indices relative to the EU, the smaller will be the relative difference in the durations of expansions;
  - the rank correlations between differences in values attached to the importance of the family and differences in the amplitude and the cumulative output loss in recessions are significant.

Business Cycle Synchronization

- Of the ten cultural indicators we have, six matter for the non-EU Mediterranean countries. Differences in Trust, Individualism, and Uncertainty Avoidance are those which have the largest rank correlations with differences in turning point synchronization.
- The rank correlations for the Mediterranean concordance index are smaller than those for the non-EU Mediterranean concordance index.
- This suggests that while EU Mediterranean countries have gone through an (unfinished) process of cultural homogenization with the EU, non-EU Mediterranean countries have still very different cultural characteristics, which imply business cycles that do not mimic those of the EU.

The Role of Family Ties

- It appears that in societies where the farther away is the perceived role of the family unit from the one of the EU, the shallower are contractions and the smaller the output loss during them.
- Since non-EU Mediterranean countries tend to attach greater importance to family ties, closer family arrangements are associated with greater risk sharing in society, which tends to mitigate the severity of contractions.
- Thus, the organization of a society may affect on how business cycles develop.

Concluding Remarks

- Our study indicates the need for macro-economists and policy-makers to concern themselves with the institutional environment that different countries face as well as more intangible aspects of individual interactions, including those involving mutual trust, perceptions of inequality, individualism, or family ties.
- While much has been achieved in understanding the impact of alternative monetary and labor market institutional arrangements on economic outcomes, our results highlight the need to study the design and evolution of formal institutions and informal norms across societies.
- This may offer a promising avenue to jointly appraise differences in growth and cyclical performance.