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The Latest REM [Working Papers](#)

Research in Economics and Mathematics (REM) circulates research, notably by its affiliated members, as working papers intended for professional and public discussion and comment. The papers have not been peer reviewed.

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Events

Past

[9th UECE Conference on Economic and Financial Adjustments](#), ISEG/UL – Lisbon School of Economics and Management/University of Lisbon, **July 30, 2021** (in the rooms and online). [Revisit the welcome.](#)

Next:

[INFER 2021, 23rd Annual Conference](#), ISEG/UL – Lisbon School of Economics and Management/University of Lisbon, **September 8-10, 2021** (in the rooms and online).



REM [Working Papers](#)

[Gender-based occupational segregation: a bit string approach](#), Joana Passinhas, Tanya Araújo, *Working Paper 0192-2021*

The systematic differences of gender representation across occupations, gender-based occupational segregation, has been suggested as one of the most important determinants of the still existing gender wage gap. Despite some signs of a decreasing trend, there is evidence that occupational gendered segregation is persistent even though gender differences in human capital variables have been disappearing. Using an agent-based model we provide a framework that introduces discriminatory behavior based on labour market theories of discrimination where workers and firms can exhibit gendered preferences. The introduction of discriminatory behavior transforms the otherwise random dynamics of occupational choice into a *persistent gender-based occupational segregation consistent with empirical evidence*.

[Reform of the Brazilian RGPS Pensions System](#), Filipe de Oliveira Bello, Onofre Alves Simões, *Working Paper 0191-2021*

In the last thirty years, the Old-Age Dependency Ratio increased nearly seven points in Brazil, from 7.0 in 1990 to 13.8 in 2020. Projections estimate it will rise to 36.2 in 2050. Furthermore, the condition of the Brazilian public finance is very serious: in 2019 and for the sixth consecutive year, it was in a deficit. The imbalance was mainly caused by social security, in particular by the RGPS (Regime Geral de Previdência Social) pensions system. A reform was approved and started to be implemented this same year, but doubts persist about it being deep enough to guarantee the looked-for equilibrium. Given this situation, the purpose of our work is to provide new insights on the very long run survival of the Brazilian public pensions, under alternative change scenarios, for instance, the shift to a Defined Contribution system. Transition costs and the costs related to the existing minimum guaranteed pension, are accounted for. Findings prove that the reform started in 2019 will decrease the large deficit for the next ten years, but after this an increase will be observed, although smaller than the one in a pre-2019 reform setting. Therefore, the sustainability of the system will remain a critical issue and further and more effective actions will have to be put into practice as soon as possible.

[Does Public Debt Ownership Structure Matter for a Borrowing Country?](#), Carlos Alberto Piscarreta Pinto Ferreira, *Working Paper 0190-2021*

We assess the investor base impact on government borrowing costs and examine how investors react to shocks in sovereign bond yields, across 24 countries and 3 maturities between 2004Q1-2019Q2. Our VAR approach has the advantage of modelling bi-directional causality between yields and investor base. We find that higher foreign holdings are associated with lower yields but link these effects exclusively to foreign

banks and mainly to 10-years maturity. Yields in GIIPS and EA core countries react in opposite directions to foreign holdings shocks. Foreign investment is procyclical, namely at the long end and where fundamentals are weaker. Thus, an EA sovereign debt crisis re-run cannot be dismissed requiring readiness to use supporting mechanisms to prevent contagion and an escalation that may jeopardize the monetary union itself. Yields' response to domestic investment shocks is heterogeneous and seems to bear no significant relation with home bias. No cyclical trading pattern can be clearly associated to each type of domestic investor.

[Globalization, Freedoms and Economic Convergence: An empirical exploration of a trivariate relationship using a large panel](#), Jorge Braga de Macedo, Joaquim Oliveira Martins, João Tovar Jalles, *Working Paper 0189-2021*

Using a large panel for 95 countries and the 1972-2014 period, this paper analyses the interactions among globalization, political & civil rights and economic convergence, through a simultaneous estimation technique. We use a multi-dimensional, de facto, and continuous measures of Freedoms and Globalization. We find a two-way positive relationship between civil liberties & political rights and economic, political and social Globalization, as well as significant two-way relationships with the economic convergence (using as a proxy the ratio of GDP per capita to the US). In this way, we extend the test for the two-way relationship between Democracy and Globalization put forward by Eichengreen and Leblang (2008). Overall, we also find a virtuous cycle between Globalization, Freedoms and Economic convergence, except for non-OECD countries at early intermediate stages of development. This positive systemic effect can be put into question by the recent negative shocks on Globalization and Freedoms related to the Covid-19 pandemic.

[Emerging 21st Century technologies: Is Europe still falling behind?](#), Hugo Confraria, Vitor Hugo Ferreira and Manuel Mira Godinho, *Working Paper 0188-2021*

Firms and countries that specialise in emerging technologies tend to have a higher chance of becoming or remaining competitive in the future. This paper aims to analyse the most dynamic areas of technological competition between 2010 and 2019 and to identify which actors are leading in those areas. We analyse patenting dynamics in four major patent offices (USPTO, EPO, JPO, KIPO), to have a global landscape of technological dynamism, and we use the IPC patent classification system to proxy the technological areas. After examining patenting growth patterns in all 4-digit IPC classes, we built a score to classify the emergent technological areas across the four offices. Our results indicate twelve "emerging" IPC classes, which are related to software engineering, digital communication, IT methods for management, medical technology, pharmaceuticals, energy conservation, games, biotechnology and semiconductor devices. We find that European firms do not hold a leading share in any of these IPC classes. This is particularly true in emerging areas such as software engineering, energy conservation and semiconductor devices, which are likely to be critical to succeed in the new techno-paradigms related to digitalization and clean energy.