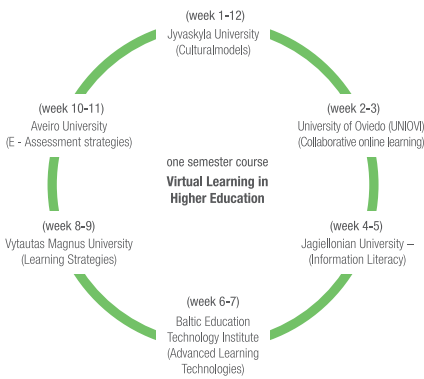




asynchronous communication strategies that were frequently used in live classes, using video conference, or in group discussions using Video-Conferencing, Skype and Google Docs.

Student groups were formed in the beginning of the course, including members from the different partner countries. Students were then engaged in group and individual work and presented the results achieved in the end of each week in a live class. Given the fact that this course was developed in a research context, knowledge has been produced that hopefully may contribute to the extension of this innovative initiative (Teresevi_ien_, Volungeviciene & Dauk_ien_, 2011).

The VLHE course was one outcome of a European Lifelong Learning project, TeaCamp, coordinated by Vytautas Magnus University (Lithuania). TeaCamp aimed to increase mobility, in a virtual environment, by facilitating the development, management and implementation of virtual mobility and research and by improving virtual mobility competences. This main objective is aligned with the European educational policy concerning the need to increase students and staff mobility as a key element for the European Area of Higher Education. Further information can be found in the TeaCamp website: <http://www.teacamp.eu/>



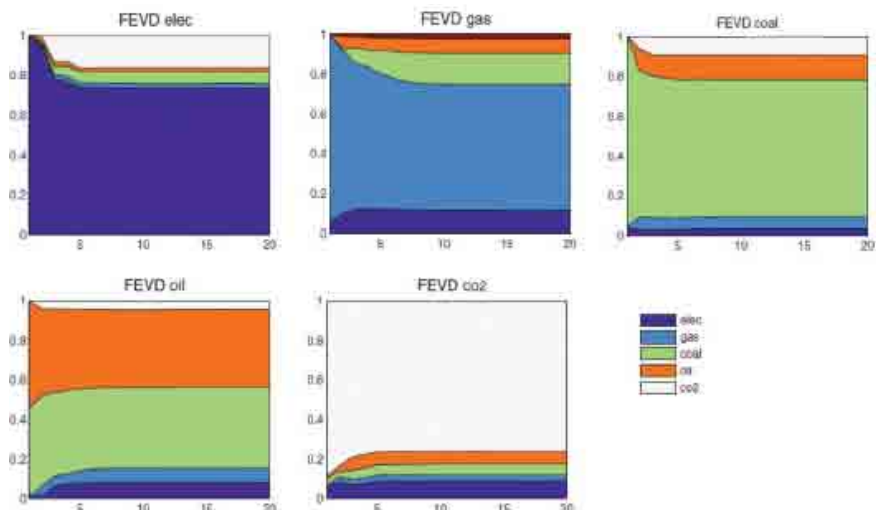
Lithuania, Poland, Portugal and Spain) and was divided in six different, but articulated, modules (one per institution), each one with two weeks duration. The University of Aveiro (UA), through the Evaluation Quality Laboratory (LAQE) of the CIDTFF, participated as the responsible institution, in a collaborative way, for designing the VLHE course curricula and for planning and delivering the E-Assessment strategies module, the sixth module of the course. The majority of the teaching and learning strategies was based on the use of synchronous and

CO₂ emission allowances and other fuel markets interaction

carlos pinho, mara madaleno

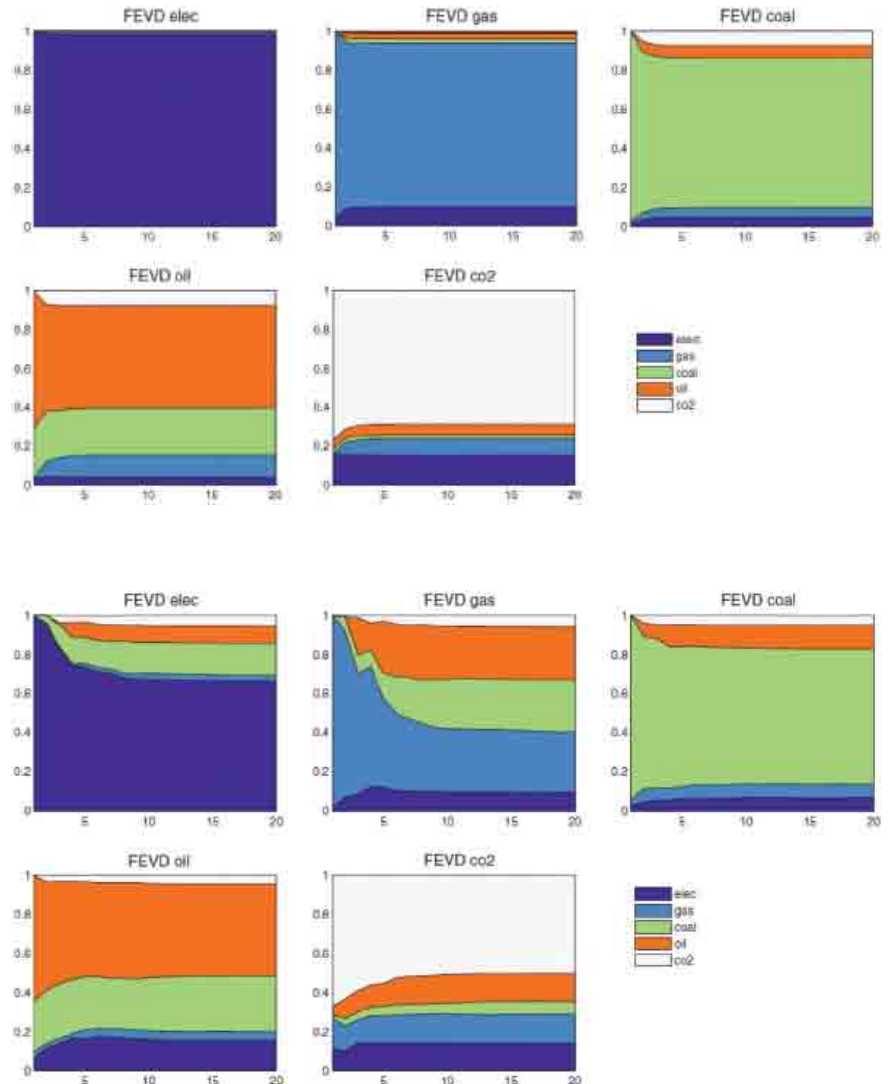
department of economics, management and industrial engineering & GOVCOPP, university of aveiro

This empirical work examines interactions between carbon, electricity and fossil fuel (coal, oil and natural gas; primary energy prices used in electricity generation) returns. Impacts of emission trading are studied with the Vector Error Autoregressive Correction Model (VECM) approach, for 5 endogenous variables, using monthly data from October 2005 to October 2009, throughout Europe (Germany, France and Nordic countries), by taking into account their heterogeneity. This enabled us to reveal the difference in responses to carbon constraints in the electricity generation sector and to evaluate the efficiency of the EU ETS. Results reveal that nuclear power generation could limit increases in prices of electricity and that the effect of carbon



depends on the energy mix and electricity deregulation stage of the country under analysis. It seems that in the European Energy Exchange (EEX) more carbon coercion was undergone and innovations in carbon are stronger in electricity prices. In sum, carbon constraints on the cost of coal and electricity production depend on the country analyzed, which addresses an answer to the impact of the recently created European Union Emission Trading System (EU ETS). Producers in countries using predominantly fossil fuels, big carbon emitters, had undergone more carbon coercion and thus were more likely to include the price of emission permits in their electricity generation and cost functions (EEX). We also found that electricity is the major source of randomness that drives the carbon market for EEX, and vice versa, being the major source of randomness for carbon in France, but not vice versa in this case. In contrast, in the Nord Pool market, the major sources of randomness for carbon are electricity, gas and oil (much lower for coal), gas and oil being used almost in the same percentage in the Nordic countries to generate electricity.

Throughout the period analyzed, the efficiency of the European market for emission allowances had not been able to compel electricity producers to reduce their emissions and invest in cleaner technologies, despite being a good step towards achieving the objectives of the Kyoto Protocol. Desired effects to be produced also depend on politics pursued in distributing allowances.



mobility between heterogeneous networks

susana sargento^{1,2}, pedro neves^{1,3}, nelson capela^{1,2}, ricardo matos^{1,2}, joão soares^{1,3}, márcio melo^{1,3}, francisco fontes^{1,3}, tiago cardoso³, ricardo silva³, andré barbosa³

¹ department of electronics, telecommunications and informatics, university of aveiro

² IT, university of aveiro

³ portugal telecom inovação SA

Ubiquitous Internet access is one of the main challenges for the telecommunications industry in the next decade. The number of users accessing the Internet is growing exponentially and the network access paradigm of “always best connected, anytime, anywhere” is a central requirement for the so-called Next Generation Mobile Networks

(NGMN). WiMAX, together with 3GPP LTE, was recently recognized by ITU as one of the compliant access technologies for 4G. Nevertheless, WiMAX is not yet fully prepared for next generation environments, mainly due to the lack of end-to-end QoS procedures to support real-time multimedia services delivery. Furthermore, besides the 4G compliant

WiMAX and 3GPP LTE radio access technologies, 3GPP UMTS/HSPA and Wi-Fi will also have a significant impact in the mobile communications during the next decade. Therefore, it is fundamental to enable the coexistence of several radio access technologies, thereby providing mobile users with seamless mobility. In this work and related projects, it is