

# **Athena Consultores**

Presentation

## I. Introduction

Athena is a consultancy firm specialized in economics, statistics, auctions, and competition policy. Founded by Nicolas Melissas, who earned his PhD in Economics from the Université Libre de Bruxelles, Athena brings deep expertise and experience to each project. Based in Mexico City, we provide solutions in Dutch, English, French, or Spanish. We collaborated with private and public clients across Europe and Mexico, demonstrating our ability to explain complex economic concepts to a diverse audience.

## II. Experience

The following lists represent a very short summary of the different projects we have been working on.

### Telecommunications

1. Course on Auction Theory taught at the *Instituto Federal de Telecomunicaciones* (IFT) –the Mexican telecommunications regulator.
2. We analyzed the IFT-4 auction which was held by the telecommunications regulator in 2017. In that auction, firms competed for the right to broadcast a radio station in a well-defined geographic area. In terms of revenues, the auction was hugely successful: One firm, for example, offered 86.5 million pesos to establish a new radio station in Cancún. After a careful analysis of the bidding data, we estimated new minimal bids for future auctions.
3. Using synthetic control methods and propensity score matching techniques, we estimated the impact of the asymmetric regulation in the Mexican telecommunications sector.
4. Analysis of the IFT-8 spectrum auction which was held in 2022. As in the IFT-4 auction, the spectrum on offer is used by radio broadcasters to expand their existing networks. In contrast to the IFT-4 auction, bidder participation was very weak: 234 radio frequencies were offered in the auction, 147 of them received no bids, and only 31 of them received bids from two or more bidders. The consultancy service analysed all the elements of the auction to avoid such a disastrous outcome in the future.

### Energy

1. We estimated the cumulative distribution function (CDF) of yearly fines for undelivered *Certificados de Energía Limpia*. Our model also estimates the CDF of profits and losses under a variety of assumptions about the future spot price of electricity.
2. We replicated the outcome of the first long-term electricity auction organized by the *Centro Nacional de Control de Energía* (CENACE).
3. We constructed a detailed database with all the bids submitted in the first three long-term electricity auctions. Among other things, our database includes information about which bids were inclusive and which were mutually exclusive.
4. We analyzed several open season auctions for the transportation of natural gas in Colombia, Mexico, Spain and the UK.
5. Course on Auction Theory taught at the CENACE.

## Competition Policy

1. We aided various government agencies to design an efficient auction.
2. Estimation of consumer harm caused by a cartel in the Mexican pension fund industry. Between November 2012 and June 2014, four Mexican pension funds took steps to reduce the number of clients which wanted to switch from one cartel member to another. We estimated the harm caused by one cartel member and we argued that that harm was much lower than the one originally estimated by the Mexican Competition Authority.
3. Estimation of consumer harm caused by a cartel in the Mexican sugar industry. Between the 29<sup>th</sup> of October and the ninth of December 2013, several firms successfully coordinated their output and pricing strategies to prop up wholesale sugar prices in Mexico. In the first week of December, for example, we estimated that sugar prices would have been 11% lower in the absence of any collusive agreement. (The counterfactual was estimated using time-series econometric techniques. Wholesale sugar prices were in decline prior to the entry of the cartel and, according to industry insiders, were expected to continue to decrease. This also explains why firms decided to form a cartel in the first place.) We estimated consumer harm to slightly exceed 215 million pesos—a rather large amount considering that the cartel was only active during six weeks. Our paper was published in a book published by the Mexican Competition Authority.
4. Identifying relevant markets and verifying the presence of a dominant firm in at least one of the identified relevant markets. (Client: Belgian Railroad Regulator)

## Development & Environmental Economics

1. Analysis of mobility patterns in Mexico-city during the COVID-pandemic. Dr. Melissas documented that mobility went down—and sometimes spectacularly so—in the rich parts of the city between the 30<sup>th</sup> of March and the first of June 2020. In some poorer parts of the city, however, mobility went up! This finding can be explained by the fact that some unskilled persons work in the richer parts of the city as waiters, informal workers, etc. During the lockdown, businesses in the more affluent parts of the city were closed and there was no more work for the unskilled. As unskilled workers typically possess few savings, staying at home was just not an option for them and they started to look for alternative sources of income closer to their homes.
2. Analysis of employment trends in the formal sector using data from the Mexican Social Security Institute.
3. Analysis of the evolution of digital skills. Dr. Melissas documented that some basic digital skills, such as sending and receiving emails, dramatically increased during the pandemic.
4. Analysis of remittances. Based on data from Mexico's central bank, Mexico received almost 230 billion pesos as remittances in the third quarter of 2020. According to the *Encuesta Nacional de Ingresos y Gastos de los Hogares*, however, the total amount of remittances received in the same quarter is slightly less than 15 billion pesos. This mismatch between both data sources can be explained by the fact that many households are afraid of organized crime and prefer to underreport the amount of money they receive from their family members in the US.

5. Analysis of GHG emissions, employment, and value added in Mexico. Using data from the *Instituto Nacional de Ecología y de Cambio Climático* and from the *Instituto Nacional de Estadística y Geografía*, we computed the emissions per employee and per value added in 31 industrial sectors in Mexico.

#### Financial Econometrics

1. The impact of high-frequency trading at B3 (the São Paulo Stock Exchange).
2. The impact of individual investors at B3.
3. Price discovery in the USD futures market (B3).
4. Volatility surface for the Brazilian options market (B3).
5. Term structure of corporate credit spreads (ANBIMA, Brazilian self-regulatory banking association).

### III. Managing director



Nicolas Melissas holds a PhD in Economics from the Université Libre de Bruxelles. After a post-doctoral stay in Barcelona, he took up a job as lecturer at the University of Leicester, UK. Between 2006 and 2014, he worked as a researcher at the *Centro de Investigación Económica* (CIE-ITAM) in Mexico-city. Nicolas has published his research in several international journals such as the *International Economic Review*, the *European Economic Review*, *Economic Theory* and the *Journal of Law, Economics and Organization*. In 2014, he founded Athena Consultores.

### IV. Academic associates



Laura Juarez holds a PhD in Economics from the University of Texas at Austin. Her areas of expertise are Labor Economics, Public Economics, and Applied Microeconometrics. Her work has been published in the *Journal of Public Economics*, *B.E. Journal of Economic Analysis and Policy*, and the *World Bank Economic Review*. She worked as a researcher at the *Centro de Investigación Económica* (CIE-ITAM) in Mexico City from 2006 to 2012, and later at the Economic Research department of *Banco de México*, the Mexican Central Bank, from 2013-2017. Currently, she is a professor of Economics at *El Colegio de México*, and an active member of the *Sistema Nacional de Investigadores*.



Jaime Sempere Campello holds a PhD in Economics from the European University Institute. His areas of expertise are Public Economics, Competition Policy, Telecommunications regulation, Banking regulation and Fisheries management. His work was published in the *Economic Journal*, the *Journal of Environmental Economics and Management*, *Regional Science and Urban Economics*, *Economic Theory*, *Environmental and Resource Economics*, and *Marine Policy*. He regularly visits the *Instituto de Análisis Económico* (Barcelona) and the *Universidad Carlos III* (Madrid) as a Marie Curie researcher. Jaime joined *El Colegio de México* in 1992 as an Economics Professor and is also an active member of the *Sistema Nacional de Investigadores*.



Marcelo Fernandes holds a PhD in Finance (Université Libre de Bruxelles, 1999). He is currently Professor of Finance at the Sao Paulo School of Economics, FGV after a long spell as Chair in Econometrics at the School of Economics and Finance of Queen Mary University of London (2004 to 2017). His research on high-frequency financial econometrics, empirical market microstructures, and nonparametric theory has appeared in the *Journal of the American Statistical Association*, *Journal of Econometrics*, *Journal of Business and Economic Statistics*, *Journal of Financial Econometrics*, *Journal of Empirical Finance*, and *Journal of Banking and Finance*, among others. He is currently Associate Editor of the *Journal of Empirical Finance*, among others, and President of the Brazilian Finance Society.

## V. Strategic alliance

We believe in the power of collaboration and are happy to join forces with Solvay Public Policy House. This alliance will enhance the quality of our work, bringing forth a wide array of expertise to address the diverse needs of our valued clients.



The [Solvay Public Policy House](#) (SPPH) is a recent initiative from the University of Brussels (ULB). It has been created to provide innovative advice to policymakers and facilitate policy actions for complex times, raising awareness of long-term objectives while promoting rapid action. Some of the fields covered by our experts include social mobility, globalization, public governance, competition policy, digitalization, the energy transition, and healthcare. In terms of policy-oriented research, Solvay Public Policy House is home to multiple research centers which together cover a wide span of expertise. The team of researchers brings an educational mix in various disciplines (e.g., economics, political sciences, management, and public policies), as well as offering training programs.

The House's research is always evidence-based using tailored techniques for each research project. The SPPH specializes in using multi-method approaches and multi-disciplinary teams from different departments. We pride ourselves on delivering work of the highest quality and standard, providing independent and unbiased analysis and demonstrating academic rigor and years of insight.

The SPPH shares the EU values of inclusion, tolerance, justice, solidarity, non-discrimination and liberty and the ULB values of free inquiry, the primacy of democracy, and concern for restoring our planet's resilience.

## VI. Clients and contracts

Some of our clients prefer not to appear on our corporate CV. The following organizations, however, allowed us to divulge the following information:

### 1. EnergeA

Consultant for the Project: “Servicio de consultoría especializada en materia de hidrocarburos para el asesoramiento del desarrollo e implementación de los modelos operativos, económicos y contables aplicables a las actividades reguladas en materia de gas natural e hidrocarburos sin procesar para la comisión reguladora de energía”. Dr. Melissas worked on the third deliverable: “Subastas de Gas”. Year: 2018

### 2. Instituto Federal de Telecomunicaciones

Contract Number	Name of the Contract
IFT/ADM/040/16	Servicios consistentes en diseño e impartición del curso “Teoría de Subastas”. (2016)
IFT/ADM/043/17	Servicios de consultoría de un análisis de desarrollo e impacto de la licitación pública para concesionar el uso, aprovechamiento y explotación comercial de 191 frecuencias en el segmento de 88 a 106 MHz de la banda de frecuencia modulada y de 86 frecuencias en el segmento de 535 a 1605 MHz de la banda de amplitud modulada para la prestación del servicio público de radiodifusión sonora (Licitación IFT-4). (2017)
IFT/ADM/040/19	Servicio de asesoría para actualizar las fórmulas para el cálculo de precios de las prórrogas, modificaciones técnicas y valores mínimos de referencia. (2019)
IFT/COLMEX/01/22	Servicio de asesoría para analizar el diseño, desarrollo y resultados de la Licitación No. IFT-8 y desarrollar las opciones de cálculo de las contraprestaciones de las prórrogas, modificaciones técnicas y valores mínimos de referencia, considerando la información arrojada por dicho proceso, el marco legal y los objetivos sectoriales. (2022)

### 3. Comisión Federal de Competencia Económica

Nicolas Melissas y Jaime Sempere, Impacto de un cartel en el mercado mexicano del azúcar, Beneficio económico de las intervenciones de la COFECE, Evaluaciones ex post 2014—2020, COFECE, 2021.

### 4. Instituto Tecnológico Autónomo de México

Consultant for the Project: “Estudio de Evaluación de los Beneficios Generados a los Usuarios por Implementación de la Regulación Asimétrica”. Dr. Melissas worked on the second deliverable: “Evaluación Cuantitativa”. Year: 2021.

## 5. United Nations Development Program

Contract Number	Name of the Contract
IC-2020-276	Economista para atender la respuesta del PNUD a la emergencia derivada del COVID-19. (2020)
IC-2021-033	Economista para asesorar la respuesta del PNUD a la emergencia derivada del COVID-19. (2021)

## 6. SPF Mobilité et Transports (Belgian Transport Ministry)

Consultant for the Project: “Rédaction d'une méthodologie pour déterminer une position dominante sur des marchés nationaux de services de transport ferroviaire et l'application de cette méthodologie dans un cas concret.” (REGUL 2023-08, joint project with SPPH)

## 7. German development agency in Mexico (Deutsche Gesellschaft für Internationale Zusammenarbeit, GIZ)

Diagnóstico Integral de Emisiones GEI y su Impacto Económico y Laboral para una Transición Justa en México

## VII. Contact

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