

INFRASTRUCTURES AND DEVELOPMENT

Course title – Intitulé du cours	INFRASTRUCTURES AND DEVELOPMENT
Level / Semester – Niveau / semestre	M2 / S1
School – Composante	Ecole d'Economie de Toulouse
Teacher – Enseignant responsable	STRAUB Stéphane
Other teacher(s) – Autre(s) enseignant(s)	
Other teacher(s) – Autre(s) enseignant(s)	
Other teacher(s) – Autre(s) enseignant(s)	
Other teacher(s) – Autre(s) enseignant(s)	
Other teacher(s) – Autre(s) enseignant(s)	
Lecture Hours – Volume Horaire CM	30
TA Hours – Volume horaire TD	
TP Hours – Volume horaire TP	
Course Language – Langue du cours	Anglais
TA and/or TP Language – Langue des TD et/ou TP	Anglais

Teaching staff contacts – Coordonnées de l'équipe pédagogique :

Stéphane Straub, office MF125.

Meeting by appointment. Preferred mean of interaction: by email (stephane.straub@tse-fr.eu) or after the classes.

Course's Objectives – Objectifs du cours :

The course will focus on the microeconomics of infrastructure, defined here to encompass physical infrastructure in the four main sectors, energy, transport, water and sanitation, and information and communication technology. The objectives of the course are to introduce students to the main issues surrounding these topics, to familiarize them with the analytical tools that researchers use to address these issues, and to allow them to get a grasp on the policy literature on the subject. At the end of the course, students should be able to understand and replicate good quality empirical research in this area, and to produce policy oriented synthesis on topics related to infrastructure.

Prerequisites – Pré requis :

Familiarity with basic econometrics, and especially panel data techniques, will be helpful.

A useful and accessible reference is:

Angrist, Joshua D, and Pischke, Jorn-Steffen, *Mostly Harmless Econometrics*, Princeton University Press

Practical information about the sessions – Modalités pratiques de gestion du cours :

Laptops are accepted in the class.

Grading system – Modalités d'évaluation :

Grading will consist of an individual home assignment. Late home assignments will be discounted by 50% if they are less than a week late. No home assignment will be accepted more than 1 week after the due date.

Bibliography/references – Bibliographie/références :

Introduction, Data, and Measurement

Policy work

- Asian Development Bank, 2017, Meeting Asia's Infrastructure Needs.
<https://www.adb.org/sites/default/files/publication/227496/special-report-infrastructure.pdf>
- World Bank. 2017. Rethinking Infrastructure in Latin America and the Caribbean. Spending Better to Achieve More. Fay, M., Andres, L., Fox, C., Narloch, U., Straub, S. Slawson, M.
- Fay M, Han S, Lee HI, Mastruzzi M and Cho M (2019). Hitting the Trillion Mark a Look at How Much Countries are Spending on Infrastructure (English). Policy Research Working Paper WPS No. 8730. Washington, D.C: World Bank Group.

Research work

- Hugh Goldsmith. 2014. "The Long-Run Evolution of Infrastructure Services." CESifo Working Paper No. 5073
- Gramlich, E. Infrastructure Investment: A Review Essay. Journal of Economic Literature, Vol. 32, No. 3. (Sep., 1994), pp. 1176—1196.
- Straub, S. (2011), "Infrastructure and Development: A Critical Appraisal of the Macro-Level Literature", The Journal of Development Studies, vol. 47, n°5, p. 683-708.
- Straub, S. (2008), "Infrastructure and Growth in Developing Countries: Recent Advances and Research Challenges", World Bank Policy Research Working Paper No.4460.

Transport

Policy work

- World Development Report 2009, Reshaping Economic Geography.
<http://web.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTWDRS/0,,contentMDK:23062295~pagePK:478093~piPK:477627~theSitePK:477624,00.html>
- World Bank. 2017. Transport Corridors in Latin America.
- Donaldson, D., Jinhage, A. and Verhoogen, E. (2017). Beyond borders: Making transport work for African trade. IGC Growth Brief Series 009. London: International Growth Centre.

Research work

- Olken, Benjamin. 2007. "Monitoring Corruption: Evidence from a Field Experiment in Indonesia." Journal of Political Economy 115(2): 200-249.
- D. Donaldson, "Railroads of the Raj: Estimating the Impact of Transportation Infrastructure", forthcoming, American Economic Review.

- Bird, J. and S. Straub, 2014, " The Brasília Experiment: Road Access and the Spatial Pattern of Long-term Local Development in Brazil ", World Bank Policy Research Working Paper No.6964.
- Abhijit Banerjee, Esther Duflo and Nancy Qian. "On the Road: Access to Transportation Infrastructure and Economic Growth in China". mimeo, February 2012.
- J. Assunção, M. Lipscomb, A. M. Mobarak, D. Szerman. "Agricultural Productivity and Deforestation in Brazil", mimeo.
- Robin Burgess, Remi Jedwab, Edward Miguel, Ameet Morjaria and Gerard Padro-i-Miguel. "The Value of Democracy: Evidence from Road Building in Kenya", NBER Working Paper No. 19398, forthcoming, American Economic Review, June 2015
- Remi Jedwab and Alexander Moradi. "The Permanent Economic Effects of Transportation Revolutions in Poor Countries: Evidence from Africa", forthcoming, Review of Economics and Statistics.
- Bleakley, Hoyt, and Jeffrey Lin. 2012. "Portage and Path Dependence." The Quarterly Journal of Economics, 127(2): 587–644.
- Baum-Snow, N, L Brandt, V Henderson, M Turner and Q Zhang (2012), "Roads, Railroads and Decentralization of Chinese Cities", working paper.
- Ghani, E., Goswami, A. and W. Kerr, 2013, "Highway to success in India: the impact of the golden quadrilateral project for the location and performance of manufacturing", Policy Research Working Paper Series 6320, The World Bank.
- Saugato Datta. "The impact of improved highways on Indian firms". Journal of Development Economics, Volume 99, Issue 1, September 2012, Pages 46—57.
- Storeygard, A., 2016, "Farther on down the road: transport costs, trade and urban growth in sub-Saharan Africa", Review of Economic Studies 83(3): 1263-1295.
- Gilles Duranton and Matt Turner, 2011, "Urban growth and transportation", Review of Economic Studies, forthcoming
- Casaburi, L., Glennerster, R. and Suri, T., 2013, "Rural Roads and Intermediated Trade: Regression Discontinuity Evidence from Sierra Leone", mimeo.
- Rema Hanna, Gabriel Kreindler and Ben Olken, "Citywide effects of high-occupancy vehicle restrictions: Evidence from "three-in-one" in Jakarta", Science, Vol. 357 (6346), 2017.
- Claudia Berg, Uwe Deichmann, Yishen Lieu and Harris Selod, "Transport Policies and Development, with, Journal of Development Studies," 2017, 53(4), 465-480.

Energy

Policy work

- World Bank. Sustainable Energy for all - Global Tracking Framework - Progress toward Sustainable Energy 2017. <http://www.worldbank.org/en/topic/energy/publication/global-tracking-framework-2017>
- The frontiers of Energy. NATURE ENERGY. Vol 1, January 2016. https://www.researchgate.net/publication/290185896_The_Frontiers_of_Energy

Research work

- Lipscomb, M., M. Mobarak and T. Barham, 2013, "Development Effects of Electrification: Evidence from the Topographic Placement of Hydropower Plants in Brazil", *AEJ: Applied Economics*, 5(2): 200--231.
- T. Dinkelman, 2011, "The effects of rural electrification on employment: New evidence from South Africa", *American Economic Review*, 101(7): 3078--3108.
- Gertler, P., O. Shelef, C. Wolfram, and A. Fuchs. (2016). "The Demand for Energy-Using Assets among the World's Rising Middle Classes," *American Economic Review*. Vol. 106, No. 6, pp. 1366-1401.
- Lee, K., Miguel, T., and C. Wolfram. (2020). "Does Household Electrification Supercharge Economic Development?" *Journal of Economic Perspectives*.
- Lee, K., Miguel, T., and C. Wolfram. (Forthcoming). "Experimental Evidence on the Demand for and Costs of Rural Electrification." *Journal of Political Economy*.
- Allcott, Hunt, Allan Collard-Wexler, and Stephen D. O'Connell (2016). "How Do Electricity Shortages Affect Industry? Evidence from India." *American Economic Review*, Vol. 106, No. 3 (March), pages 587-624.
- Philippe Alby, Jean-Jacques Dethier et Stéphane Straub, « Firms Operating under Electricity Constraints in Developing Countries? », *The World Bank Economic Review*, vol. 27, n° 1, 2013, p. 109–132.
- Michael Greenstone, Rema Hanna and Esther Duflo "Up in Smoke: The Influence of Household Behavior on the Long-Run Impact of Improved Cooking Stoves," *American Economic Journal: Economic Policy*, 2016, 8(1): 80-114.
- Shaun McRae, "Infrastructure Quality and the Subsidy Trap", *American Economic Review*, 105(1), January 2015, 35–66.

ICT

Policy work

- World Development Report 2016: Digital Dividends.
<http://www.worldbank.org/en/publication/wdr2016>
- Smith, B. 2019. *Tools and Weapons: The Promise and the Peril of the Digital Age*. Penguin Press

Research work

- Jensen R. (2007), "The Digital Provide: Information (Technology), Market performance, and Welfare in the South Indian Fisheries Sector", *Quarterly Journal of Economics*, 122(3), 879-924.
- Jenny Aker and Marcel Fafchamps, 2013, "How does mobile phone coverage affect farm-gate prices? Evidence from West Africa." *World Bank Economic Review*.
- Jenny Aker and Isaac M. Mbiti. 2010. " Mobile Phones and Economic Development in Africa." *Journal of Economic Perspectives*. 24(3): 207-32.
- Jenny Aker. 2010. " Information from Markets Near and Far: The Impact of Mobile Phones on Grain Markets in Niger." *American Economic Journal: Applied Economics*. 2: 46-59.
- Jenny Aker, Christopher Ksoll and Travis Lybbert. 2012. "Can Mobile Phones Improve Learning? Evidence from a Field Experiment in Niger." 4(4), *American Economic Journal: Applied Economics*.
- Jonas Hjort and Jonas Poulsen, "The Arrival of Fast Internet and Employment in Africa", *American Economic Review*, vol. 109, no. 3, 1032-1079, March 2019

- Bossuroy, Thomas, Clara Delavallade, and Vincent Pons. "Can Biometric Tracking Improve Healthcare Provision and Data Quality? Experimental Evidence from Tuberculosis Control in India." Harvard Business School Working Paper, No. 19-077, March 2019.
- Daniel Björkegren, "The Adoption of Network Goods: Evidence from the Spread of Mobile Phones in Rwanda," *The Review of Economic Studies*, Volume 86, Issue 3, May 2019, Pages 1033–1060.

Water and Sanitation

Policy work

- World Health Organization (WHO). 2016. WASH POST-2015: proposed targets and indicators for drinking-water, sanitation and hygiene.

https://www.wssinfo.org/fileadmin/user_upload/resources/post-2015-WASH-targets-factsheet-12pp.pdf

Research work

- Duflo E. and R. Pande (2007), "Dams", *Quarterly Journal of Economics*, 122(2), 601-646.
- Galiani, S., P. Gertler and E. Schargrodsy (2005), "Water for Life: The Impact of Privatization of Water Services on Child Mortality", *Journal of Political Economy*, 113: 83-120.
- Michael Greenstone, Esther Duflo, Raymond Guiteras, and Thomas Clasen, 2015, "Toilets Can Work: Short and Medium Run Health Impacts of Addressing Complementarities and Externalities in Water and Sanitation," Mimeograph.
- Alsan, M. and C. Goldin. (forthcoming). "Watersheds in Child Mortality: The Role of Effective Water and Sewerage Infrastructure, 1880 to 1920." *Journal of Political Economy*
- R. Guiteras, J. Levinsohn, A. M. Mobarak. "Demand Estimation with Strategic Complementarities: Sanitation in Bangladesh," mimeo.

Regulation and Governance, Public-Private Partnerships

- Engel, E., Fischer, R., and Galetovic, A. 2014. "The Economics of Public-Private Partnerships. A Basic Guide." Cambridge University Press.

Policy work

- World Bank 2017. Charting the Diffusion of Power Sector Reform in the Developing World. Vivien Foster, Sudeshna Ghosh Banerjee, Alejandro Moreno & Samantha Witte.
- John E. Besant-Jones. 2006. Reforming Power Markets in Developing Countries: What Have We Learned? ENERGY AND MINING SECTOR BOARD DISCUSSION PAPER PAPER NO.19 SEPTEMBER, World Bank

Research work

- David Martimort et Stéphane Straub, « How to Design Infrastructure Contracts in a Warming World? A Critical Appraisal of Public-Private Partnerships », *International Economic Review*, vol. 57, n° 1, février 2016, p. 61–88.
- Jean-Jacques Dethier, Alex Moore et Stéphane Straub, « Regulation, Renegotiation and Capital Structure: Theory and Evidence from Latin American Transport Concessions », *Journal of Regulatory Economics*, vol. 45, n° 2, 2014, p. 209–232.

- Céline Bonnet, Pierre Dubois, David Martimort and Stéphane Straub, 2012, "Empirical Evidence on Satisfaction with Privatization in Latin America", World Bank Economic Review, Volume 26, Issue 1, Pp. 1-33.

- Martimort, D., and S. Straub. 2009. "Infrastructure Privatization and Changes in Corruption Patterns: The Roots of Public Discontent". Journal of Development Economics 90: 69–84.

Session planning – Planification des séances :

Classes will be a mix of lectures, and group discussions.

Classes will usually rely on a mix of research and policy work. The material to be used each week (usually one main research paper and one policy report) will be announced in advance the week before.

The course will follow the following sequence (some topics may take more or less than one three-hour session, so there is not necessary a direct correspondence between sessions and topics):

1. Introduction: course organization, review of issues, definitions, historical overview.
2. The empirics of infrastructure: data and measurement, panel data econometrics and impact evaluation.
3. The industrial organization of infrastructure: funding, financing, and management.
4. The public vs. private debate: privatization and public-private partnerships (PPPs). Regulatory and governance issues.
5. Energy.
6. Water and sanitation.
7. Transport.
8. Information and communication technology (ICT).

Finally, interventions by development practitioners (from the World Bank or similar type of organizations) will be organized if possible.

Distance learning – Enseignement à distance :

I will alternate one 1.5h session of distance learning (Zoom - Tuesdays) and one 1.5h session of Q&A (Mondays) based on the previous session and additional materials that have to be read in preparation. In case presential sessions are not feasible, the Monday session will be by distance learning as well.