### NOTE 1:

- All Keynotes and Tutorials will be given in OSB Maamari Auditorium,
- 2. All As 'session will be given in 433 (Learning Resources),
- 3. All Bs' sessions will be given in 438,
- 4. All Cs' sessions will be given in 428,
- 5. All Ds' sessions will be given in 340,
- 6. All Tea and Coffee breaks are served in the fourth floor.

## NOTE 2:

The last speaker will act as session's chair.

Internet Access: Internet is available in the computer Lab in the third floor room number 335.

Please use one of following access combination:

- Username: gbus3; password: gbus3-3
- · Username: gbus4; password: gbus4-4
- Username: gbus5; password: gbus5-5

**Travel Arrangement:** Individual daily touristic trips to any location in Lebanon can be booked with pick up from hotel. Please visit the following website: www.nakhal.com

For local Taxi: Contact ALLO TAXI: http://www.allotaxi.com.lb/

A trusted taxi to bring from airport to any hotel- Journey 20-30 minutes

- Tel: +961 1 366661 Fax: +961 1 373091
- Email: operation@allotaxi.com.lb

# Welcome from the DEA 2010 Chair: Professor Ibrahim H. OSMAN

On behalf of the members of the 8th International Data Envelopment Analysis Conference (DEA2010) Committees. I would like to extend a warm welcome to all of you to Lebanon-Known as the "Switzerland of the East"-and to its capital Beirut -widely referred to as the "Paris of the East"-and rated in 2009 by New York Times as "Number One City to Visit in the World." History of education in the land of Cedars goes back thousands of years when our ancestors created the alphabet in Byblos (Lebanon) and spread it to the world. Hence, it is not a surprise for Lebanon to host this International Conference at the Olavan School of Business (OSB) of the American University of Beirut, After last year's completion by OSB of a number of milestones including the inauguration of our new magnificent four-story building in December 2009 and the achievement of the AACSB accreditation and securing a formal ranking as first in the Middle East, I aspired to host this prestigious International Data Envelopment Analysis Conference in celebration and crowning of such successes with world-class colleagues and friends.

The DEA community has established a reputation within the management science for rigor and relevance to professional practice. These features are demonstrated again in the DEA2010, which attracted more than 80 academic participants from 29 countries around the world. The presentations include two tutorials to provide transfer of knowledge to students and four keynotes on recent developments and advances in the theory and applications. The remaining presentations are grouped into parallel special focused sessions on performance measurement, and management in areas such as agriculture, banking, education, environment, human development, electronic government, manufacturing, policy analysis, project and service management, process negotiation, risk and transport. We hope that DEA2010 will contribute to the advancement of the field, cre-

ate an atmosphere for the diffusion of insightful research ideas, foster new collaborations, simulate creative discussions and provide up-to-date knowledge and learning tools on performance management and measurement for the benefits of Mankind.

DEA2010 would not have been possible without the support of many people, including patronage by our Trustee and Prime Minister Mr. Saad Hariri, who is also a Member of Parliament, and a successful businessman; sponsorship by the Center National Council for Scientific Research of Lebanon, the HSBC Bank, Performance Improvement Management Software Company, the International Data Envelopment Society: as well as our university authorities: in particular President Peter Dorman. Provost Ahmad Dallal and Dean George Najiar: Associate Dean Khalil Hindi. We are also grateful to the DEA2010 International Advisory Committee, Organizing Committee and Scientific Committee for the support they provided to ensure a high quality selection of refereed papers to include in the conference program and to organize an excellent social program; and finally to our School research and staff in particular, Ms Hala Azar, Ms Maya Helou, Ms Nada Khalidi, and Ms Mayssa Saffar.

Again, welcome to DEA2010. For many of you, this may be the first visit to Lebanon and I trust you will enjoy your stay and will have a pleasant time while enjoying the traditional hospitality of the Lebanese People. I hope you will treat yourselves to some magnificent touristic attractions in Lebanon, in addition visiting our AUB beach if possible.

With my Warmest Welcome and Best Regards,

Ibrahim H. Osman Beirut, June 10, 2010



# 8<sup>th</sup> International Conference on Data Envelopment Analysis (DEA2010)

Performance Management and Measurement

ABSTRACT OF THE REFERED PROCEEDINGS

DEA2010
Conference Chair: Professor Ibrahim H. Osman



Olayan School of Business, Lebanon, AUB June. 10 - 12, 2010









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hursday. June 10

17:00-19:00 Registration and Cocktail

8:00-9:00	Registration-First Floor OSB					
9:00-10:00	Opening Ceremony-OSB Auditorium					
10:00-10:30	Coffee					
10:30-11:30	Keynote 1: Measuring Happiness, Professor Rajiv Banker, Temple University, USA					
	Finance-1 : Bank Productivity- TA-1	Policy Analysis- TB-1	Education -1- TC-1	E-government- TD-1		
11:30-12:30	R. Ariss	S. Al- Gattoufi	J. Urban	G. Patel		
	F. Vargas	J. Solana	M. Baysal	IH Osman		
12:30-14:00	Lunch					
	Finance- 2 : Portfolios & Inv - TA-2	Service & Risk - Management - TB-2	Education -2- TC-2	Health Care- TD-2		
14:00-15:30	A. Lopes	R. Maya	D. Edvardsen	H. Najadat		
	M. Gholizadeh	T. Bandyopadhyay	B. Ezzat & A. Tharwat	N. Davutyan & M. Bilsel		
	Y. Kara	N. Aoun	S. Sohn	A. Pourmohammadi		
15:30-16:00 Coffee						
	Finance- 3: Bank Efficiency- TA-3	Transportation- TB-3	Education -3- TC-3	Negotiation Process- TD-3		
16:00-17:00	M. Eken & S. Kale	H. Bal & H. Örkcu	J. Nazarko	V. Krivonozhko		
	A. Anouze	M. Movahedi	F. Abbasi	G. Tohidi		
17:00-18:00	Tutorial 1: Stochastic Frontier Analysis, Professor Ray Subhash, University of Connecticut, USA					
18:00-19:00	Beach session					

	8:00-9:00	Registration-First Floor OSB					
	9:00-10:00	Keynote 2: Efficiency and productivity in higher education: an assessment of universities in the UK Professor Emmanuel Thanassoulis, Aston University, UK					
	10:00-10:30	Coffee					
	10:30-11:30	Keynote 3: Dynamic efficiency, Professor Finn Forsund, University of Oslo, Norway					
		Theory- 1- FA-1	Agricultural- 1 FB-1	Manufacturing-FC-1	Utility-FD-1		
	11:30-12:30	K. Hentrich	L. Latruffe	N. Ferdows	M. Kazemi		
		M. Alirezaee	L. Bakucs	F. Manzouri	R. Marques		
	12:30-14:00	Lunch					
	14:00-23:00	Half-day social program – Geitta Grotto, Byblos and Gala Dinner					

#### 8:00-9:00 Registration-First Floor OSB 9:00-10:00 Tutorial 2: Data Envelopment Analysis, Dr. Ali Emrouznejad, Aston University, UK 10:00-10:30 Coffee 10:30-11:30 Keynote 4: An investigation: Can DEA be used to predict stock market performance? Prof. Joseph C. Paradi, University of Toronto, Canada Theory- 2- SA-1 Agricultural- 2- SB-1 Human Development - SC-1 Theory- 3- SD-1 S. Naghneh R. Poldaru & J. Roots A. Saparova & H. Becerra P. Zervopoulos 11:30-12:30 J. Paul, S. Indukuri & M. N. Banaeian W. Kthiri M. Pahlavani Khajehafzali 12:30-14:00 Lunch Theory- 4 SA-2 Agricultural-3- SB-2 Theory- 5 - SC-2 Theory- 6- SD-2 B. Zhang S. Ray R. Matin N. Banaeian M. Afsharian I. Sirvent 14:00-15:30 S. Naghneh H. Mihci V. Krivonozhko E. Salame A. Amirteimoori P. Zamani 15:30-16:00 Coffee Theory-7: Ranking DMUs SA-3 | Project Management- SB-3 | Environment & Human Development-SC-3 | Theory- 8: Super-Efficiency- SD-3 S. Razavyan T. Mkhabela S. Kordrostami A. Lopes 16:00-17:00 I. Alp S. Daneshvar & M. Kaleibar S. Khalfallah & H. Gaaloul G. Cheng 17:00-19:00 Beach session