

BMI – DST- Absa Directed Risk Research Workshop

DST Auditorium

2 June 2016

Address by Dr Phethiwe Matutu

Mrs Ina de Vry, Managing Principal, Model Risk and Development, Barclays Africa; Prof Riaan De Jongh: Director of the Centre for Business Mathematics and Informatics;

Prof Phillip Mashele: Coordinator: DST-Absa Risk Research Committee;

Dr Neels Erasmus: Coordinator DST-Absa Programme;

Researchers from academia, business;

Government delegates;

Presenters in the workshop;

Distinguished guests;

Ladies and Gentlemen.

Introduction

Thank you for the invitation to speak to you this morning, and a warm welcome to the Department of Science and Technology. I bring greetings from Minister Pandor and the Director-General of the Department, Dr Mjwara.

I will be speaking about the development and utilisation of high-level skills in Mathematical Sciences in the country, and university – industry partnerships, areas of focus of this workshop.

Background

It was in March 2012 that the Department of Science and Technology entered into a partnership with ABSA to support, among others, the risk research programme of the Business Mathematics and Informatics (BMI) Centre at the North West University (NWU). It humbles me to see representatives from a diverse range of institutions in this workshop. As per the collaboration agreement, Absa's contribution was going to support the risk training and the wider applied research programme.

Important Milestones of the Programme

With a very modest contribution from the Department, the DST-Absa risk research programme achieved its milestones. In its first year (2012), the programme managed to **increase the number of higher education institutions participating in the risk research programme**. In the second year (2013), the programme managed to **enrol PhD students, and publish academic papers in the field**. In the third year, the programme strengthened the university – industry partnerships through a process that **identified industry problem statements and getting university based researchers to respond to the problems**. These milestones have seen companies and government entities such as the Standard Bank, the First National Bank, PricewaterhouseCoopers, XDS, Perigrini, the South African Reserve Bank and the National Treasury

become part of the programme. I must also acknowledge the role of the Banking Association of South Africa for allowing the use of their website as a national hosting platform for research problem statements, proposals and reports on this programme. I think this extensive footprint of the risk research programme is worth celebrating.

Skills development and utilisation in the financial sector

In 2009, Professors Johann Engelbrecht and Ansie Harding wrote a paper in the International Journal of Mathematical Education in Science and Technology. The article is titled “New numbers in mathematics in South Africa”. The general trend of universities globally was to introduce applied fields in mathematics so as to increase the Mathematics majors. There was an emphasis in applications, especially in Economics. Universities that had actively pursued diversification were reaping the benefits of substantial increases in mathematics majors. The North West University recorded a 380% increase of Mathematics majors from 2000 and 2007 the highest in all the Universities surveyed locally.

Let me share these statistics on the financial sector. It is important to note that according to the Statssa data, the financial sector comes second to the services sector in terms of employment of Masters and Doctoral degree holders. You will recall Ladies and Gentlemen that the services sector which is the major employer includes the Higher Education sub-sector. In 2013, the GDP percentage share of the Financial Sector was 26%. According to the 2015/16 Global Competitiveness Report South Africa is ranked as follows (out of 140 countries) in some of the financial services related areas: First in the

Strength of Auditing and Reporting Standards, First in Financing through Local equity, Second in the Regulation of Securities Exchange, and Eighth in the soundness of Banks. We have not established any causal link between the absorption of M&D holders and this excellent performance and would appreciate data which links the two.

Department of Science & Technology (DST) contribution in promoting Mathematics and Statistical related careers

Following the Mathematics review in South Africa, the Department made the following contribution in promoting Mathematics and Statistical related careers. The South African Centre for Epidemiological Modelling and Analysis (SACEMA), which is based at Stellenbosch was established. The facility is critical to understanding the dynamics of disease transmission. The research projects carried out by SACEMA cover many aspects of HIV/AIDS and TB and their co-interactions. Recently a Centre of Excellence in Mathematics and Statistical Sciences has been developed at Wits University and North West University is a node. On the other hand, the South African Research Chairs Initiative (SARChI) has six chairs in numeracy and maths education teaching. These research chairs are co-funded with the private sector. We continue to support the Africa Institute for Mathematical Sciences.

University – industry partnerships

The collaborations between universities and industries are critical in developing relevant skills (education and training), promoting innovation and technology transfer as well as entrepreneurship (start -ups and spin-

offs). The benefits of university-industry linkages are wide-reaching. They help coordinate R&D agendas and avoid duplications, they stimulate additional private R&D investment, they expand the relevance of the research carried out in public institutions, they foster commercialisation of public R&D outcomes, and they increase the mobility of labour between public and private sectors. This movement of people improves the employment prospects and broaden the career paths of young researchers, leading to an increase in the private sector's R&D capacity. In addition, the university–industry partnerships enhance knowledge diffusion and can be catalytic to the development of Small Medium Enterprises.

Like any other relationships, university- industry partnerships have their fair share of attendant challenges:

Often, there is an inherent mismatch between the research orientations of industries and universities, with industries putting an excessive focus on fast commercial results than on basic research;

Industries are usually interested in how quickly new patents or new products can be obtained, and want to delay publications to avoid disclosing information. University researchers, in contrast, are typically motivated to publish research results as fast as possible; and

Industries seek short-term results and clear contributions to current business lines; and

Industry is concerned about secrecy and making a profit, as opposed to the knowledge dissemination function of a university.

Right now at the innovation hub business and government are in a symposium, which discusses ways to increase investment in science, technology and innovation in South Africa. The symposium is organised by the National Advisory Council on Innovation (NACI) following an analysis of the results of the 2012/13 National Survey of Research and Experimental Development, which showed expenditure on research and development (R&D) had declined over the past five years. Our Minister is expected to facilitate a dialogue on the factors affecting investment in STI by business, especially during periods of slow economic growth and low business confidence. Business leaders, CEOs and chief strategists, primarily from JSE top 100 companies, are expected to attend, as are representatives from export councils, industry associations and joint action groups. In 2006, the DST introduced the R&D Tax Incentive Scheme which was aimed stimulating private sector investment in R&D through tax rebates.

In closing, let me take this opportunity to thank the DST-Absa NWU project and research team for their visionary leadership of this project. Let me thank all of the participating researchers and line managers under whose guidance the problem statements are formulated and the research results utilised. I wish you a pleasant memorable, working day at the DST.

I thank you