AN ANALYSIS OF DIRECTOR INTERLOCKS ON THE JSE – WITH REFERENCE TO THE TOP 40 LISTED COMPANIES

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Winner: Managerial Accounting and Finance Best Paper Award
CONTENTS

• Background
• Context
• Results
• Key Findings
• Future Research
BACKGROUND

• Presentation based on MBA dissertation
  • An analysis of director interlocks on the JSE - with reference to the top 40 listed companies

• Covers 1 of 5 research questions
  1. The interlocking director network of the JSE top 40 companies compares more closely to that of the UK than that of Germany in terms of network density and average path lengths.
  2. There is majority of NEDs on boards in the Top 40 listed companies on the JSE.
  3. There is a majority of independent directors amongst the NEDs on boards in the Top 40 listed companies on the JSE.
  4. There is a majority of unaffiliated non-executives amongst the independent directors on boards in the Top 40 listed companies on the JSE.
  5. The majority of Top 40 listed companies on the JSE have independent non-executive directors as Chairman of the board

Only research question 1 is covered in this presentation
CONTEXT

• Old Boys’ Club - Small world Theory
• Directorship Data help by CIPRO (now CIPC)
• Research by Santella, Drago, Polo and Gagliardi
• Extend research to cover SA
CONTEXT: SMALL WORLD THEORY

- Originally dated to 1920’s and 1930’s
  - Work of Moreno on friendship patterns
  - Applied to companies and directors
  - A special case of social network, a “small world”
    - High networks clustering i.e. companies being connected
    - Short distances i.e. small number of steps between companies
- Board networks are small worlds, little benefit re-confirming this
  - Conyon & Muldoon (2006)
- The Corporate Board
  - Conyon & Muldoon (2006, p.3)
• Downloaded CIPRO data from McGregor's BFA Feb 2009
• Data integrity problems
  • Appointment and termination dates missing
  • Different names / initials for same directors
  • Missing and invalid identity numbers
  • Comparison of sample board to AFS confirmed problem
• Decision
  • Restrict to smaller sample of companies
  • JSE top 40 (by market capitalization)
  • Manually collect data from published AFS
"A comparison of the director networks of the main listed companies in France, Germany, Italy, the United Kingdom, and the United States" 2008

• Santella, Drago, Polo and Gagliardi

• Comparison : Network statistics
  • Size of largest component
  • Network Density
  • Normalised betweenness centrality

• Comparison : General
  • Number of directors
  • Number of directorships
  • Directorships / company
  • Directorships / director
CONTEXT: RESEARCH TO COVER SA

• Data
  • Santella et al used dates between 31 Dec 2007-2 Sep 2008
  • Used JSE top 40 board compositions as at 1 October 2008

• Tools
  • NodeXL
    • Initial visualisations of director/company network
  • Excel
    • create company-director matrix
  • Ucinet
    • Transform matrix to a company matrix
    • Calculate key network statistics
  • NetDraw
    • Visualise the network in comparable manner
RESULTS: RELEVANCE OF THE NETWORKS

Existence of network:

- Collusion
- Co-optation and monitoring
- Provision of legitimacy to reputation
- Advancement of careers of directors

The network in Germany is one of co-operative capitalism whereas the Britain exemplifies competitive capitalism (Windolf and Beyer (1996)).

Decline in share price when appointment of new director creates interlocks (Devos, Prevost and Puthenpurackal (2009)).

Clayton Act of 1914 expressly prohibits interlocks between firms deemed to be competing in the same markets (Mizruchi (1996)).

<table>
<thead>
<tr>
<th>INDIVIDUAL</th>
<th>POTENTIAL CONFLICT</th>
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<tbody>
<tr>
<td>William C. Crowley</td>
<td>Will quit Sears board in May because he is also on boards on AutoNation and AutoZone.</td>
</tr>
<tr>
<td>Edward S. Lampert</td>
<td>Barred from Sears board chats about automotive business because he has stakes in AutoNation and AutoZone.</td>
</tr>
<tr>
<td>Ann N. Reese</td>
<td>Barred from Sears board chats about women’s apparel and footwear because she is a board member of Jones Apparel.</td>
</tr>
<tr>
<td>Alex Denner</td>
<td>Proposed director of Genzyme but already on board of Biogen Idec.</td>
</tr>
<tr>
<td>Richard Mulligan</td>
<td>Proposed director of Genzyme but already on board of Biogen Idec.</td>
</tr>
<tr>
<td>Arthur Levinson</td>
<td>Quit Google board in Oct. 2009 because he’s on the board of Apple.</td>
</tr>
<tr>
<td>Eric Schmidt</td>
<td>Quit Apple board in Aug. 2009 because he is CEO and board member of Google.</td>
</tr>
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</table>
RESULTS : NODEXL : SA NETWORK
RESULTS: NODEXL : SA NETWORK
RESULTS : NODEXL : SA NETWORK: DIRECTORS
RESULTS : KEY DIRECTORS

RAMAPHOSA MC (CYRIL)
- Standard Bank (SBK)
- MTN Holdings (MTN)
- Bidvest (BVT)
- SAB Miller (SAB)

BAND DDB (DOUG)
- Standard Bank (SBK)
- MTN Holdings (MTN)
- Bidvest (BVT)
- Tiger Brands (TBS)

Photographs from Bidvest June 2009 AFS
RESULTS : NETDRAW : SA NETWORK
# RESULTS: KEY COMPANIES

<table>
<thead>
<tr>
<th>Company</th>
<th>Normalised Betweenness</th>
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<tr>
<td>Standard Bank Group Limited (SBK)</td>
<td>14.383</td>
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<tr>
<td>Murray and Roberts Holdings Limited (MUR)</td>
<td>11.312</td>
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<td>Sanlam Limited (SLM)</td>
<td>10.632</td>
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<td>Sasol Limited (SOL)</td>
<td>10.623</td>
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<td>Anglo Platinum Limited (AMS)</td>
<td>9.965</td>
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<td>Tiger Brands Limited (TBS)</td>
<td>8.601</td>
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<tr>
<td>SABMiller PLC (SAB)</td>
<td>6.929</td>
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<td>Naspers Limited (NPN)</td>
<td>6.642</td>
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<tr>
<td>Remgro Limited (REM)</td>
<td>6.631</td>
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<tr>
<td>MTN Group Limited (MTN)</td>
<td>5.057</td>
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</table>
RESULTS: SA VS OTHER 5
RESULTS: GERMANY

- Dense network
- Only 1 isolate
- Limited weak links
RESULTS: FRANCE

- Less dense network
- Only 1 isolate
- Strong core
- A few weak links
RESULTS: ITALY

- 8 isolates
- Strong core
- Some tails

[Network diagram showing connections between various companies in Italy]
RESULTS: UNITED STATES

- Much less dense
- 5 isolates
- Few strong links
- Many tails
RESULTS: UNITED KINGDOM

- Least dense
- 12 isolates
- Secondary Segment
- Distinct star shape
- No strong links
- Easily fragmented
RESULTS : SOUTH AFRICA

- 6 isolates
- Secondary segment
- Medium density
- Few strong links
- Few tails
<table>
<thead>
<tr>
<th>Country</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
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<td>40</td>
<td>9</td>
<td>31</td>
<td>8</td>
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<td>491</td>
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<td>40</td>
<td>2</td>
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<td>487</td>
<td>595</td>
<td>14.875</td>
<td>1.222</td>
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<td>14</td>
<td>26</td>
<td>12</td>
<td>0.0410</td>
<td>485</td>
<td>515</td>
<td>12.875</td>
<td>1.062</td>
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<td>Germany</td>
<td>39</td>
<td>2</td>
<td>38</td>
<td>1</td>
<td>0.1984</td>
<td>795</td>
<td>908</td>
<td>23.282</td>
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<tr>
<td>United States</td>
<td>40</td>
<td>6</td>
<td>35</td>
<td>6</td>
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<td>489</td>
<td>532</td>
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<td>South Africa</td>
<td>40</td>
<td>7</td>
<td>32</td>
<td>5</td>
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<td>458</td>
<td>526</td>
<td>13.150</td>
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### RESULTS: INTERCOMPANY LINKS

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<th>Country</th>
<th>Intercompany Links</th>
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<td>30</td>
</tr>
<tr>
<td>2</td>
<td>USA</td>
<td>43</td>
</tr>
<tr>
<td>3</td>
<td>SA</td>
<td>68</td>
</tr>
<tr>
<td>4</td>
<td>Italy</td>
<td>84</td>
</tr>
<tr>
<td>5</td>
<td>France</td>
<td>108</td>
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<tr>
<td>6</td>
<td>Germany</td>
<td>112</td>
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</tbody>
</table>
RESULTS: DIRECTOR DISTRIBUTION

- USA
- Italy
- Germany
- France
- UK
- SA

Legend:
- 6
- 5
- 4
- 3
- 2
- 1
CONCLUSIONS

There is a clear network in SA
• 32 of top 40 connected

The SA network is not as dense as France & Germany
• 0.1 vs 0.16 vs 0.2

SA has some similarities with Italy
• Network density, size of primary segment, number of strong links between companies

Closer to UK & US
• Number of links between companies, sizes of boards

SA not in same position as UK & US
• Density (0.04 vs 0.06 vs 0.1), multiple directorships
FUTURE RESEARCH

South Africa

• Extend time horizon of research to track changes over time
  • Pre and post 1994
  • Impact of King III
  • Keep research current

• Extend research outside of the Top 40

Global: Consider global mega-network

• CFR (Compagnie Financiere Richemont SA)
  • 2 of 15 directors are South African
  • Simon Murray (UK) sits on board of Vodafone Group (UK)
  • Links UK and SA networks

• Dual Listings
  • OML (Old Mutual)
  • AGL (Anglo American)
  • SAB (SAB Miller)

• What about the rest?

The 147 companies that control everything

Forbes.com 22/10/2011
DISCUSSION

- ?

Contacts

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- Email : deoduttj@ukzn.ac.za
## JSE Short Codes for Top 40

<table>
<thead>
<tr>
<th>JSE Code</th>
<th>Company Name</th>
<th>Year End</th>
<th>Registration Number</th>
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<tr>
<td>ASA</td>
<td>ABSA Group Limited</td>
<td>Dec</td>
<td>1986/003934/06</td>
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<tr>
<td>ABL</td>
<td>African Bank Investments Ltd</td>
<td>Sep</td>
<td>1946/021193/06</td>
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<td>AGL</td>
<td>Anglo American Plc</td>
<td>Dec</td>
<td>1946/022452/06</td>
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<tr>
<td>AMS</td>
<td>Anglo Platinum Ltd</td>
<td>Dec</td>
<td>1944/017354/06</td>
</tr>
<tr>
<td>ANG</td>
<td>Anglogold Ashanti Limited</td>
<td>Dec</td>
<td>1989/002164/06</td>
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<td>ACL</td>
<td>Arcelormital Sa Ltd</td>
<td>Jun</td>
<td>2019/002935/06</td>
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<td>APN</td>
<td>Aspen Pharmacare Holdings Limited</td>
<td>Jun</td>
<td>1985/002935/06</td>
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<td>Aveng Ltd</td>
<td>Jun</td>
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<td>Bhp Billiton Plc</td>
<td>Jun</td>
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<td>Compagne Fin Richemont</td>
<td>Mar</td>
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<td>Firststrand Limited</td>
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<td>Gold Fields Limited</td>
<td>Jun</td>
<td>1957/001979/06</td>
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<td>Growthpoint Properties Limited</td>
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<td>1991/001426/10</td>
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<td>HAR</td>
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<td>MUR</td>
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<td>OML</td>
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<td>PPC</td>
<td>Pretoria Portland Cement Company Ltd</td>
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<td>REI</td>
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<td>REM</td>
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<td>Sanlam Limited</td>
<td>Jun</td>
<td>1987/005115/06</td>
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<td>Sasol Limited</td>
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