IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Intangible-driven economic profit: where intangibles matter more?

This study comprises research findings from the project 15-18-20039 supported by the Russian Science Foundation

Marina Zavertiaeva
Mariia Molodchik
Elena Shakina

14.10.2015

IDLAB

NATIONAL RESEARCH UNIVERSITY
HIGHER SCHOOL OF ECONOMICS

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Motivation

- intangibles require evaluation for monitoring their efficientcy

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Motivation

- intangibles require evaluation for monitoring their efficientcy
- lack of validated techniques to estimate return on intangibles

Marina
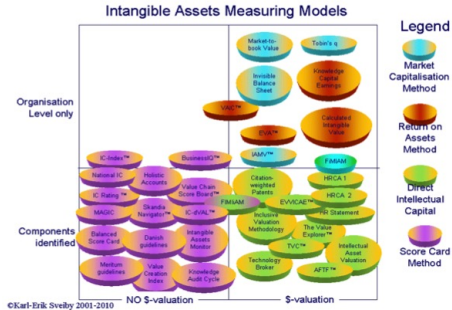Zavertiaeva
Mariia
Molodchik
Elena Shakina

Motivation

- intangibles require evaluation for monitoring their efficientcy
- lack of validated techniques to estimate return on intangibles
- it is substantially important to understand what contributes to company performance

Marina
Zavertiaeva
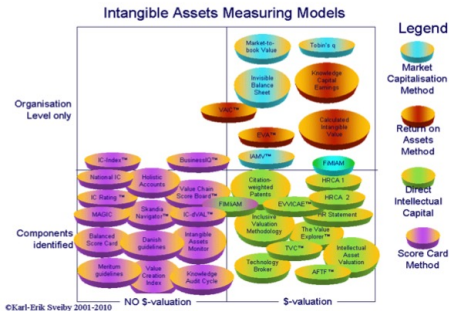Mariia
Molodchik
Elena Shakina

Motivation

- intangibles require evaluation for monitoring their efficientcy
- lack of validated techniques to estimate return on intangibles
- it is substantially important to understand what contributes to company performance
- gap in the empirical literature to study output of intangibles employment

IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

What has been done before?

- Several tools evaluate intangibles on company level

IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

What has been done before?

- Several tools evaluate intangibles on company level
  - EVA (Stewart, 1990), CIV (Stewart, 1999), and MVA (Stern and Stewart, 2001)

IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

What has been done before?

- Several tools evaluate intangibles on company level
  - EVA (Stewart, 1990), CIV (Stewart, 1999), and MVA (Stern and Stewart, 2001)
- Other tools attempt to measure output attributed to some elements of intangibles

IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

What has been done before?

Intangible Assets Measuring Models

©Karl-Erik Sveiby 2001-2010

- Several tools evaluate intangibles on company level
  - EVA (Stewart, 1990), CIV (Stewart, 1999), and MVA (Stern and Stewart, 2001)
- Other tools attempt to measure output attributed to some elements of intangibles
  - RAVE (Strack and Villis, 2002) and VAIC (Pulic, 2001)

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Idea behind our study

- intangibles are heterogeneous (Bontis et al, 2000; Huang & Hsueh, 2007)

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Idea behind our study

- intangibles are heterogeneous (Bontis et al, 2000; Huang & Hsueh, 2007)
- companies can have different profiles in intangibles as a result of their strategic investment (Shakina & Barajas, 2015)

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Idea behind our study

- intangibles are heterogeneous (Bontis et al, 2000; Huang & Hsueh, 2007)

- companies can have different profiles in intangibles as a result of their strategic investment (Shakina & Barajas, 2015)

- different elements of intangibles are considered as key resources of success for different industries and sectors (Lev, 2004; Petty & Cuganesan, 2005)

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Idea behind our study

- intangibles are heterogeneous (Bontis et al, 2000; Huang & Hsueh, 2007)

- companies can have different profiles in intangibles as a result of their strategic investment (Shakina & Barajas, 2015)

- different elements of intangibles are considered as key resources of success for different industries and sectors (Lev, 2004; Petty & Cuganesan, 2005)

- intangibles being companies' strategic assets suppose to bring value added (Bontis, 1991)

IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Research question

- The output of intangibles depends more on company strategic profile rather then industry

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Research question

- The output of intangibles depends more on company strategic profile rather then industry
    1. the output of different elements of intangibles can be measured as a part of company value added

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Research question

- The output of intangibles depends more on company strategic profile rather then industry
    1. the output of different elements of intangibles can be measured as a part of company value added
    2. clusters in coordinates of the outputs of different elements of intangibles can be found

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Research question

- The output of intangibles depends more on company strategic profile rather then industry
    1. the output of different elements of intangibles can be measured as a part of company value added
    2. clusters in coordinates of the outputs of different elements of intangibles can be found
    3. each of the clusters is attributed to a certain strategic profile in intangibles

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Research question

- The output of intangibles depends more on company strategic profile rather then industry
    1. the output of different elements of intangibles can be measured as a part of company value added
    2. clusters in coordinates of the outputs of different elements of intangibles can be found
    3. each of the clusters is attributed to a certain strategic profile in intangibles
    4. each of the clusters contains specific distribution of industries/sectors

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Calculation of Intangible-driven Economic Profit (IDEP)

$IDEP_{ij} = (ROC_{ij} - \overline{ROC_{jind}}) \cdot Int_{ij}$

- ROC_{ij} – return on a particular element of intangibles for the company i
- $\overline{ROC_{jind}}$ – industry average return on a particular element of intangibles
- Int_{ij} – the capitalized investments in intangible resource j

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Calculation of Return on Intangibles

$$ROC_{ij} = \frac{VA_{ij}}{Int_{ij}} = \frac{TR_i - Costs_i + Cost_{ij}}{Int_{ij}}$$

$$\overline{ROC_{jind}} = \frac{\sum_{i=1}^{n} ROC_{ij}}{n}$$

- TR_i – turnover of the company i

- $Costs_i$ – costs of the company i

- $Cost_{ij}$ – costs of the company i spent on intangible resource j

- Int_{ij} – the capitalized investments in intangible resource j

- VA_{ij} – value added of the company i by intangible resource j

- ROC_{ij} – return on a particular type of intangibles for the company i

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Calculation of Capitalized Investments in Intangibles

$Int_{ij} = \sum_{k=0}^{l} \frac{l-k+1}{l+1} \cdot Costs_{ij(t-k)}$

- Int_{ij}– the capitalized investments in intangible resource j

- l – number of years during which costs on intangible resource j influences company profit

- $Costs_{ij(t-k)}$ – costs of the company i spent on intangible resource j at the year $(t-k)$

**Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina**
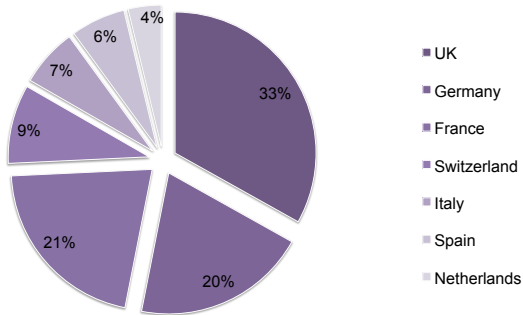
Structure of Intangibles
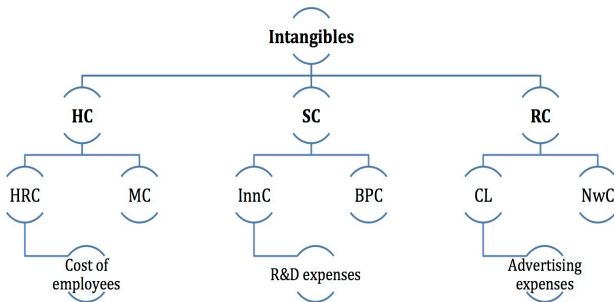
- HC - human capital: HRC - human resource capabilities, MC- management capabilities
- SC - structural capital: InnC- innovative capabilities, BPC - business process capabilities
- RC - relational capital: CL - customer loyalty, NwC - networking capabilities

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Database

Listed companies

Number of employees > 250

Total assets > 1000 th EUR

Seven countries: United Kingdom, Germany, France, Switzerland, Italy, Spain, Netherlands

Time period: 2008-2013

Result: 1455 companies, 8730 observations

IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Database

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Results: 1st step

- The number of years during which expenses on intangibles influence output:

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Results: 1st step

- The number of years during which expenses on intangibles influence output:
  - HC: HRC – 1 year lag

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Results: 1st step

- The number of years during which expenses on intangibles influence output:
    - HC: HRC – 1 year lag
    - RC: CL – 1 year lag

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Results: 1st step

- The number of years during which expenses on intangibles influence output:
  - HC: HRC – 1 year lag
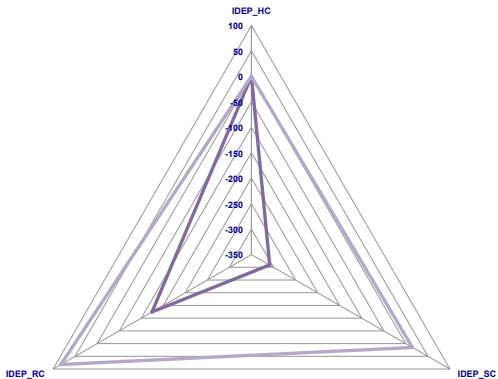 - RC: CL – 1 year lag
  - SC: InnC – 2 year lag

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Results: 2nd step

Variable	Mean
IDEP of HC	106.7079
IDEP of SC	−240039
IDEP of RC	−137051

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Results: 3rd step

Cluster	№ of companies	Mean IDEP		
		HC	SC	RC
1	295	−0.11263	−308.744	−124.374
2	640	0.121993	15.1107	82.22909
Total	935	0.047966	−87.0681	17.04403

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Results: 3rd step

IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Results: 4th step

№ of industry	Cluster 1	Cluster 2
0	0	0.64
1	2.77	0.8
2	0	51.04
3	0.35	1.75
4	0.35	21.05
5	1.04	2.07
6	11.42	20.73
7	84.08	1.91

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Results: 4th step

- high efficiency of intangibles
- low efficiency of intangibles
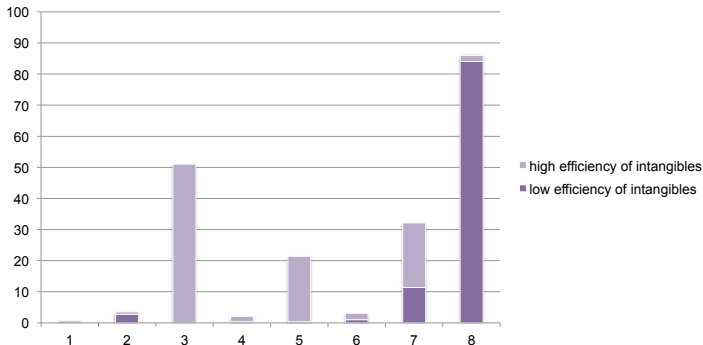
1 agriculture
2 construction and real estate
3 manufacturing
4 energy and chemical

5 services
6 trade and retail services
7 finance and insurance
8 professional services

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Conclusions

- IDEP is developed and validated on the sample of large European companies

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Conclusions

- IDEP is developed and validated on the sample of large European companies
- There are two clearly distinguished profiles of companies according to the efficiency of intangibles employment

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Conclusions

- IDEP is developed and validated on the sample of large European companies
- There are two clearly distinguished profiles of companies according to the efficiency of intangibles employment
  - low-performed companies in terms of IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Conclusions

- IDEP is developed and validated on the sample of large European companies
- There are two clearly distinguished profiles of companies according to the efficiency of intangibles employment
  - low-performed companies in terms of IDEP
  - high-performed companies in terms of IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Conclusions

- IDEP is developed and validated on the sample of large European companies
- There are two clearly distinguished profiles of companies according to the efficiency of intangibles employment
  - low-performed companies in terms of IDEP
  - high-performed companies in terms of IDEP
- Companies are not evenly distributed according to industries in each of the profiles

IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Conclusions

- IDEP is developed and validated on the sample of large European companies
- There are two clearly distinguished profiles of companies according to the efficiency of intangibles employment
  - low-performed companies in terms of IDEP
  - high-performed companies in terms of IDEP
- Companies are not evenly distributed according to industries in each of the profiles
  - there are industries that are relatively better off in terms of IDEP - manufacturing, services

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Conclusions

- IDEP is developed and validated on the sample of large European companies
- There are two clearly distinguished profiles of companies according to the efficiency of intangibles employment
  - low-performed companies in terms of IDEP
  - high-performed companies in terms of IDEP
- Companies are not evenly distributed according to industries in each of the profiles
  - there are industries that are relatively better off in terms of IDEP - manufacturing, services
  - there are sectoral outsiders in terms of efficiency of intangibles employment - professional services (management of holdings)

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Further steps

- assignment of indicators related to investments in MC, NwC and BPC

IDEP

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Further steps

- assignment of indicators related to investments in MC, NwC and BPC

- robustness check (changing the type of costs associated with investment in intangibles, lags)

Marina
Zavertiaeva
Mariia
Molodchik
Elena Shakina

Further steps

- assignment of indicators related to investments in MC, NwC and BPC
- robustness check (changing the type of costs associated with investment in intangibles, lags)
- comparative study of Russian and European companies