Potential developments of patents in Med Regions, *Egypt, Morocco, Tunisia*

Ahmed Bounfour
Vincent Delbecque
Tamer Taha
Walid Hadhri
Héla Masmoudi

1- The context

- The importance of IPRs in the development strategies of nations and firms
- The question of articulating « Hard intangibles » to « soft intangibles »
- The possible leveraging of « hard intangibles » as catalysts and accelerators of innovation policies and strategies

2-The study objectives

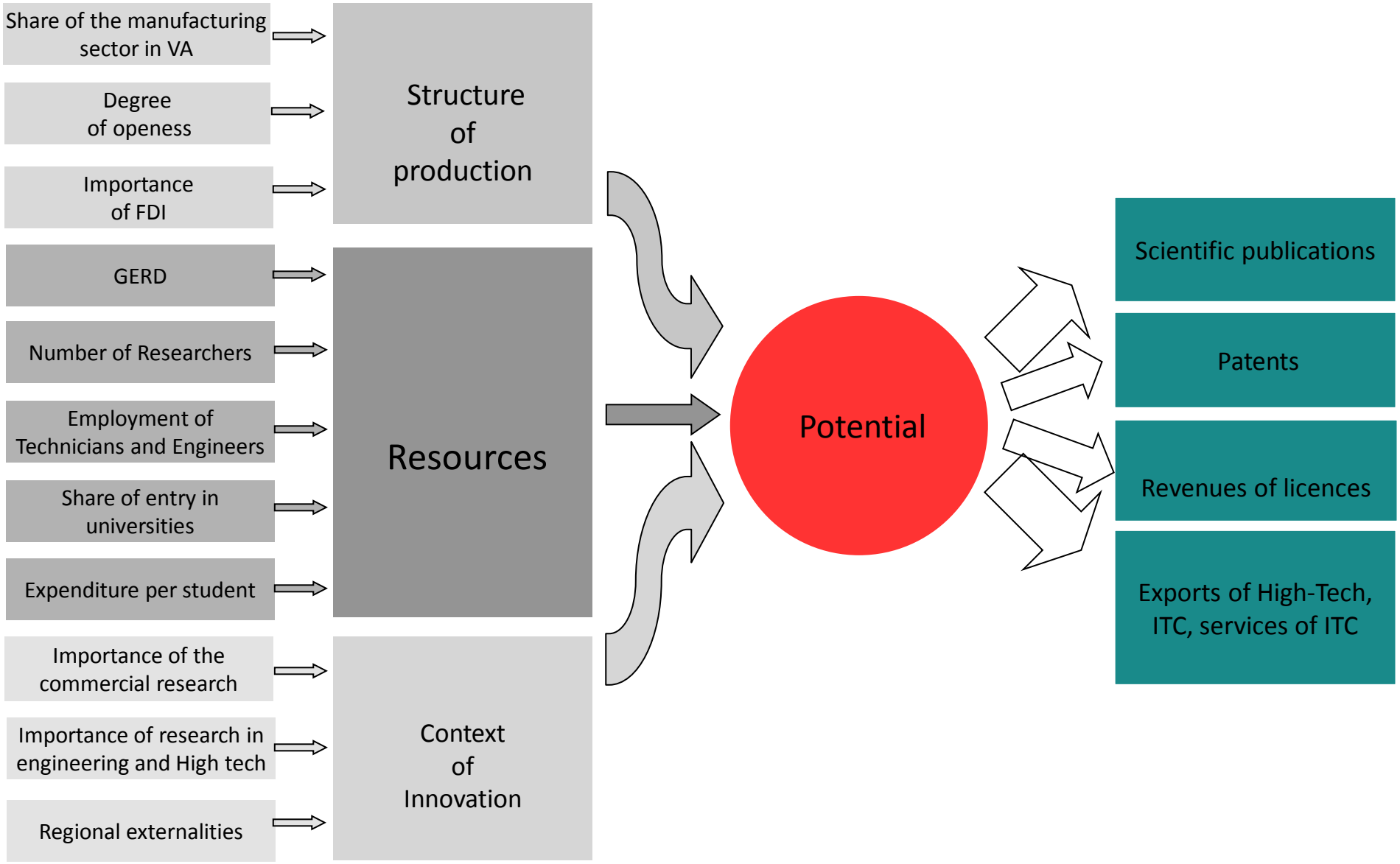
- Produce a first assessment of the patent "'market'' in the southern Mediterranean region
- Assess the stakes related to the innovation policy taking into account the successful experience of benchmark countries
- Propose configuration paths /scenarios and options

3- Methodology

- A documentary analysis (review of literature, analysis of reports)
- Interviews with Executive leaders and researchers of institutions, research laboratories and companies

  -> roughly a dozen interviews in Morocco and Egypt, and a little bit more in Tunisia)
- Economic modeling in a comparative perspective

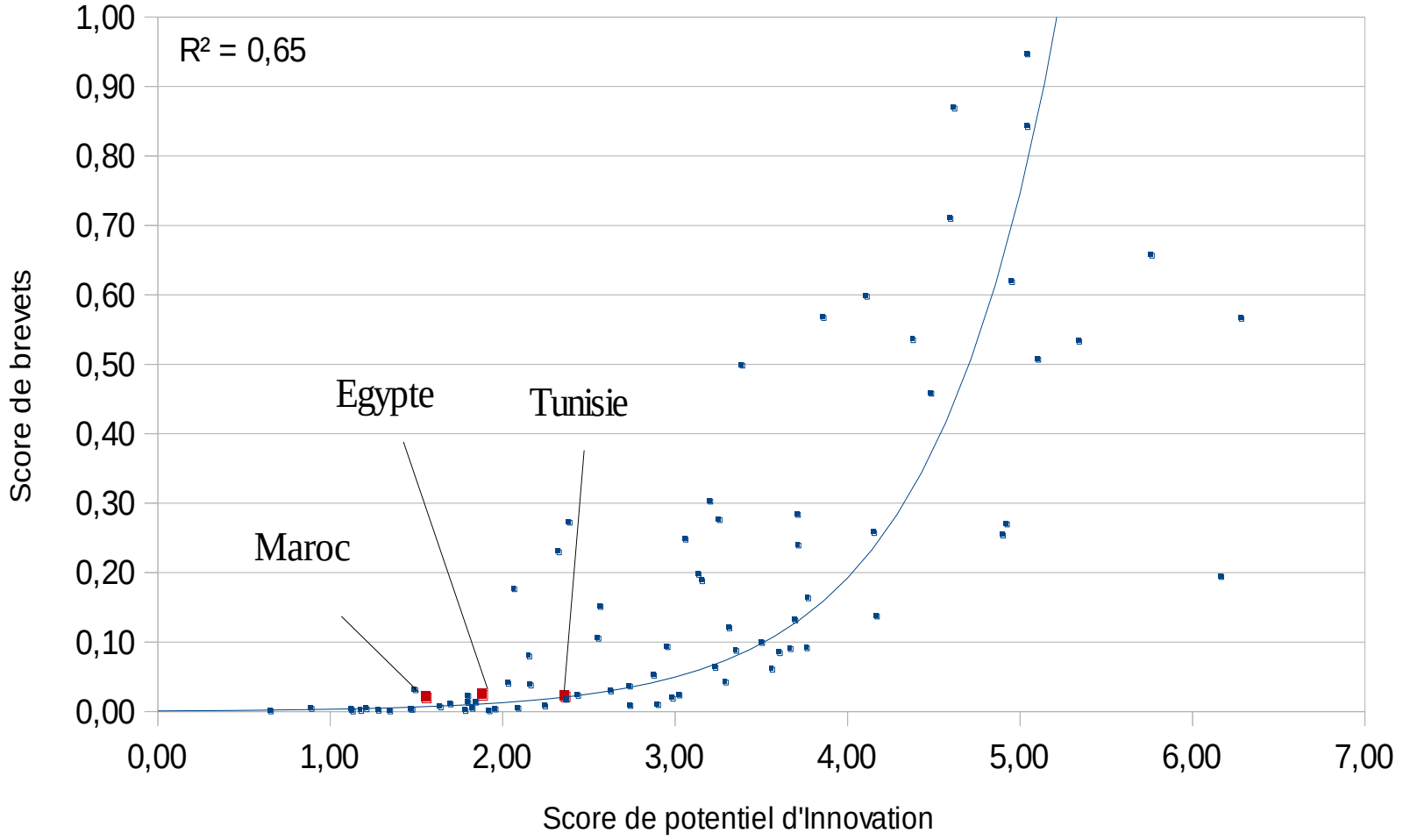
General Modelling



4- Some overall results

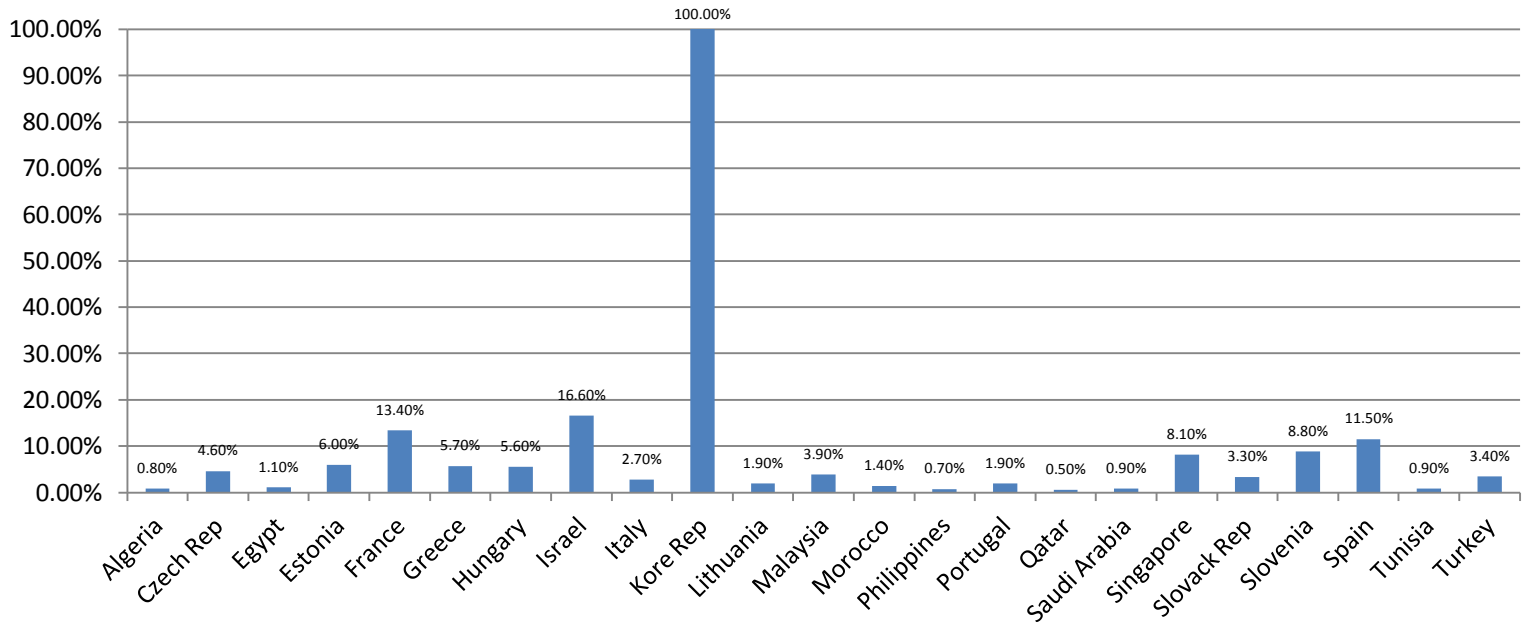
Estimation of contributions of production factors to patents			
Dependent variable : Log number of patents per inhabitant			
	β	Standard deviation	p-value
• Industry	1.83	2.91	0.55
• FDI	-0.04	0.02	0.07
• Researchers	0.06	0.01	0.01
• Externalities	1.57	0.17	0.01
• Private sector	3.01	1.16	0.01
• Number observations	38		
R^2	0.92		
«Condition index » of collinearity	9.35		

4- Some overall results



4- Some overall results

Indices of efficiency, using DEA
(inputs : scores 1, 2 et 3 ; outputs : indices for patents



5-The report highlights

- The economic analysis highlights the determining factors of patent filings for 38 countries
- Similar to what was observed for other countries in the startup phase of their “patent” strategy, patent filing is still dominated by non-home based (foreign) companies and, as regards local filing, by individual filings.

5-The report highlights

- Each country now has a legal framework aligned on the TRIPS agreements
- Each country has also recently set up several scientific and industrial programs
- Specific programs for innovative small to medium size companies were also implemented
- the national IP institutions have set up incentives and information disclosure systems relating to patents, in particular with universities

5-The report highlights

- Recent developments were observed on the part of companies working in world-scale sectors (automobile), “Global value chains”
- An approach already successfully established in other countries (Turkey from 1990 to 2000)
- The needs expressed by companies :
  - the development of the intellectual property culture and incentives to setting up university – industry partnerships,
  - -the appropriate tax incentives (research tax credit for instance)

5-The report highlights

- The issue of patent filing cannot be separated from the innovation and industrial competitiveness strategy
- The issue of the quality of patents granted locally and of their truly innovative nature also sometimes arose
- The aggregate amount of home-based filings of the three countries in ***2010 was 870, equivalent to the number of filings in Malaysia in 2009***
- This low figure testifies to the fact that ***the issue of the patent "market" is still at a very early stage of its development in the three countries studied***

6-Three benchmarks

1- Turkey

- Until the end of the 90s, nearly all the patents were filed by foreign (non-home-based) companies
- This characteristic was subsequently reversed with the collapse of foreign filings and the increase in home-based filings which grew tenfold from 2000 to 2009, reaching 2555 patents filed
- The number of utility models also increased significantly going from 38 in 1995 to 3174 in 2011
- The quality of the innovation and patent dynamic of Turkish home-based companies
- This number went from 6 in 1995 to 150 in 2010 with the USPTO and from 1 to 284 with the European Patent Office over the same period.

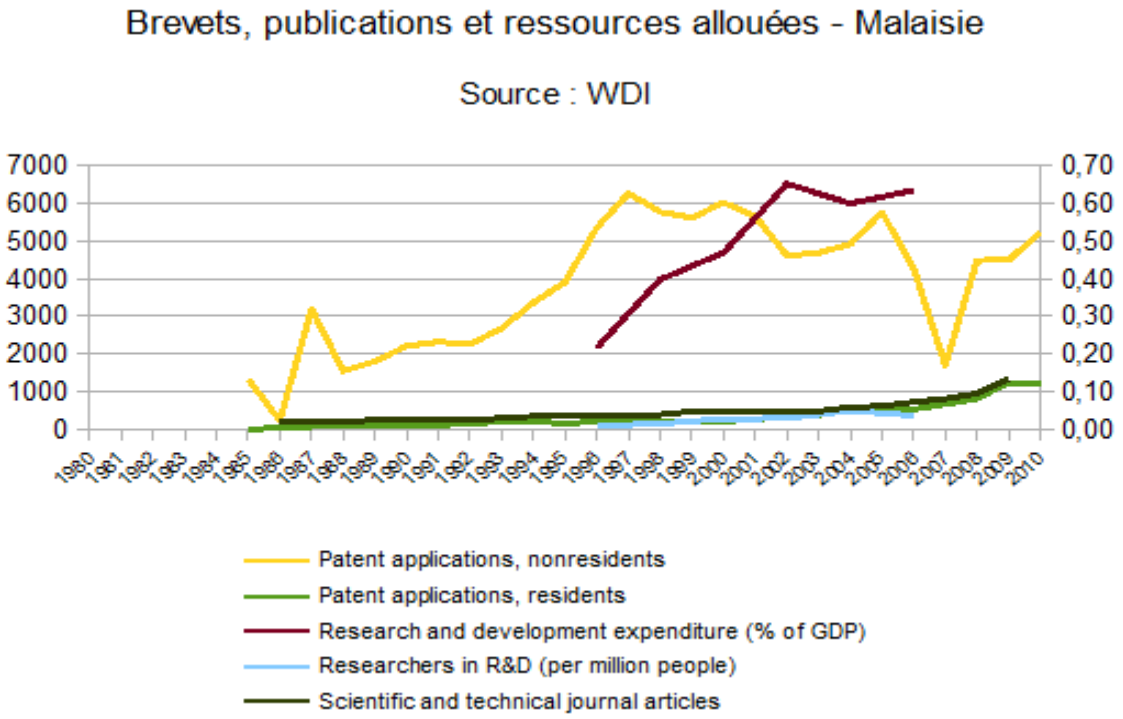
6-Three benchmarks

2- Malaysia

- Home-based patents, nearly non-existent in the mid eighties, exceeded the 500 mark in 2004 and the 1000 mark in 2009.
- There have always been more foreign patents than home-based but the gap has been decreasing since 1997 from 6000 to 5000 today
- On the international front, the number of patents filed with the USPTO went from 5 in 1998 to 373 in 2010.
- Malaysian filers file relatively few patents with European, Japanese and Korean patent offices
- These figures also include the utility models. The patent/utility model distinction is not available from the Malaysian intellectual property bureau.

6-Three benchmarks

2- Malaysia



6-Three benchmarks

3- South Korea

A big success, marked by 4 stages:

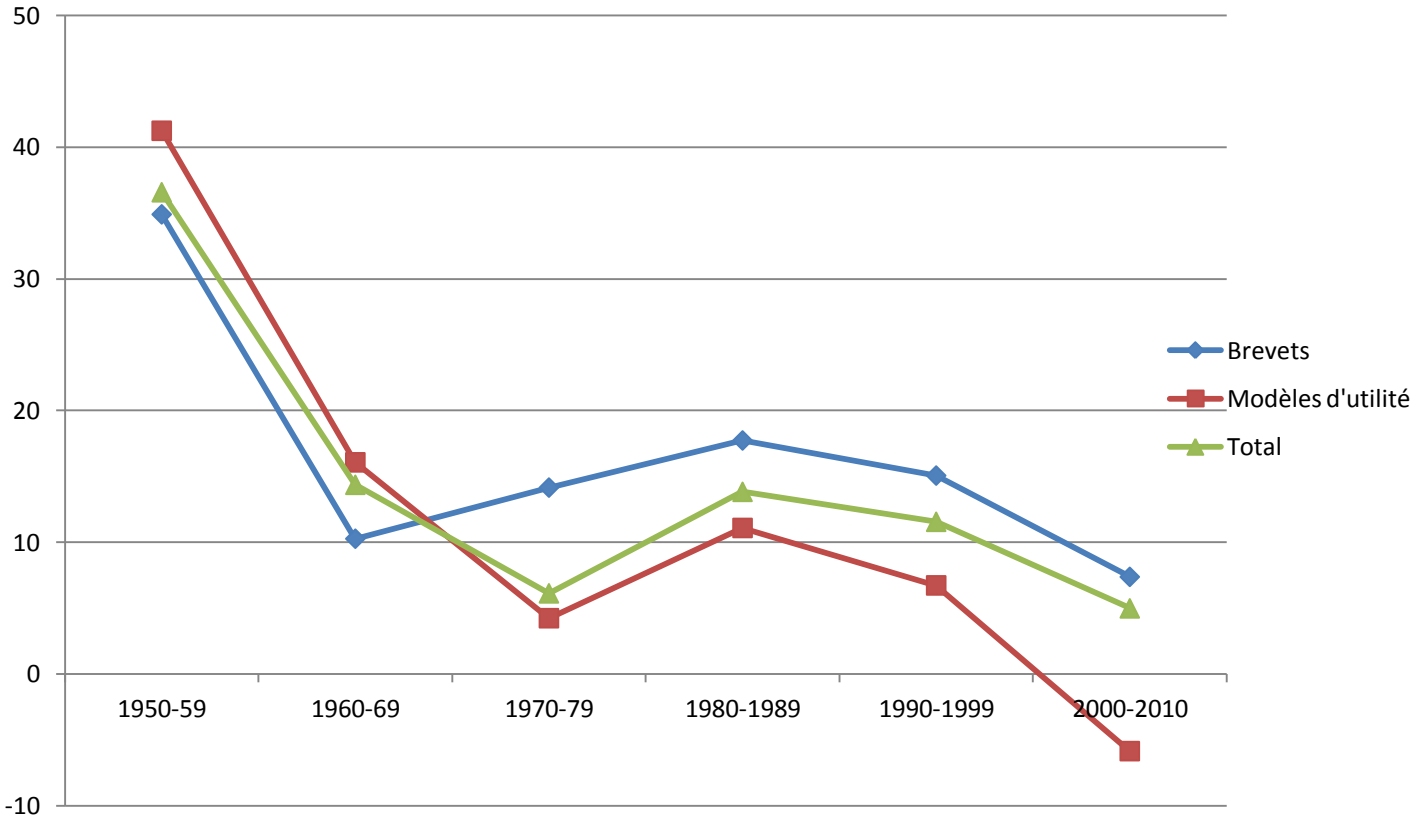
- ***Before 1970***: A weak technological base of local inventors and a weak flow of foreign technology
- ***Mid-seventies to mid-eighties***: An accumulation of technological capacity through foreign technology flows. The domination of foreign inventors and individual inventors,
- ***Mid-eighties to mid-nineties*:** accumulation of a local technology base, strong growth in local filings and the domination of companies over individual inventors
- ***Mid-nineties***, accumulation of the technology base via R&D, strong promotion of IP and aid to filing patents abroad.

Source: Keun Lee

6-Three benchmarks

South Korea

Annual growth of patents and utility models, South Korea, 1950-2010
Residents and Non-residents



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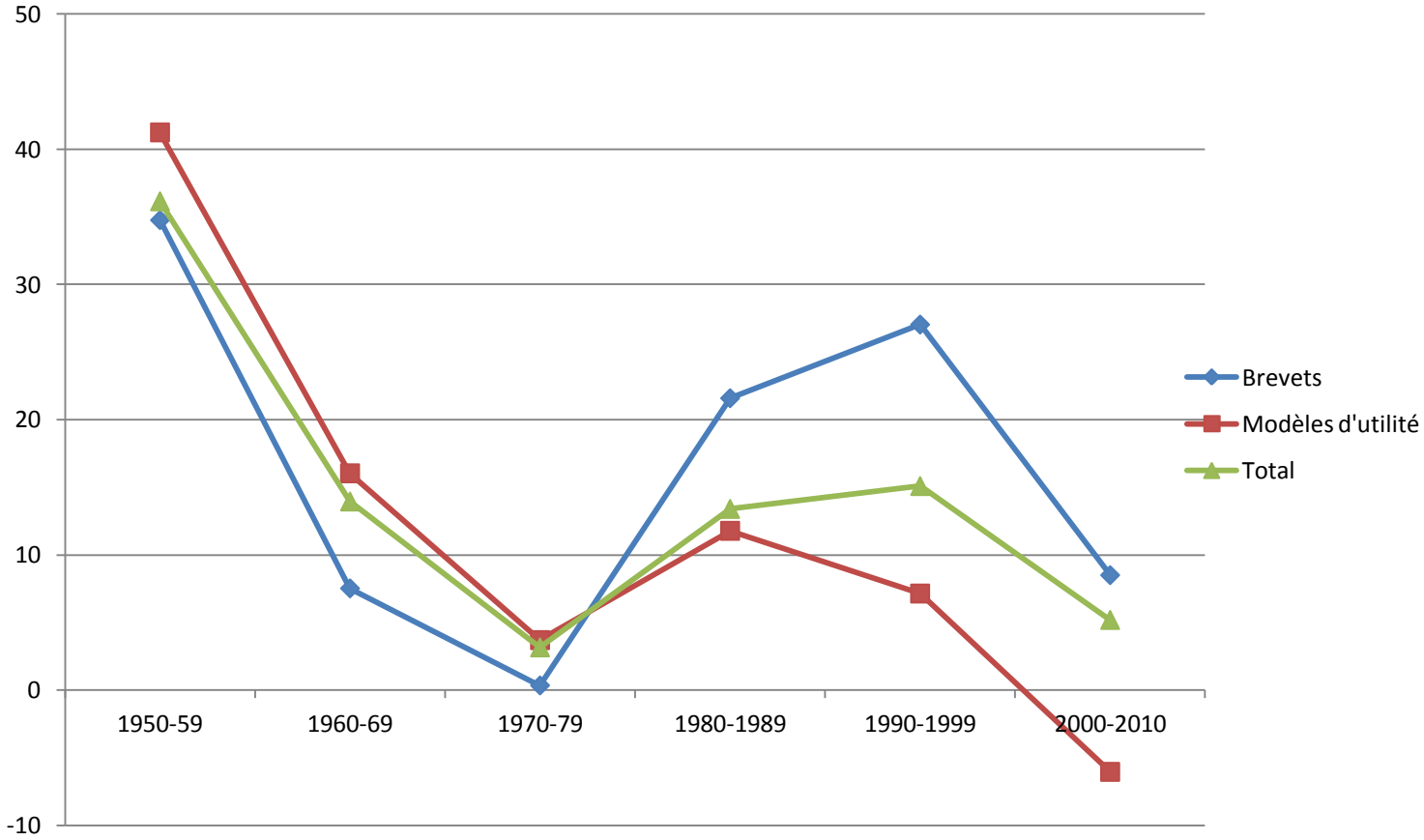


6-Three benchmarks

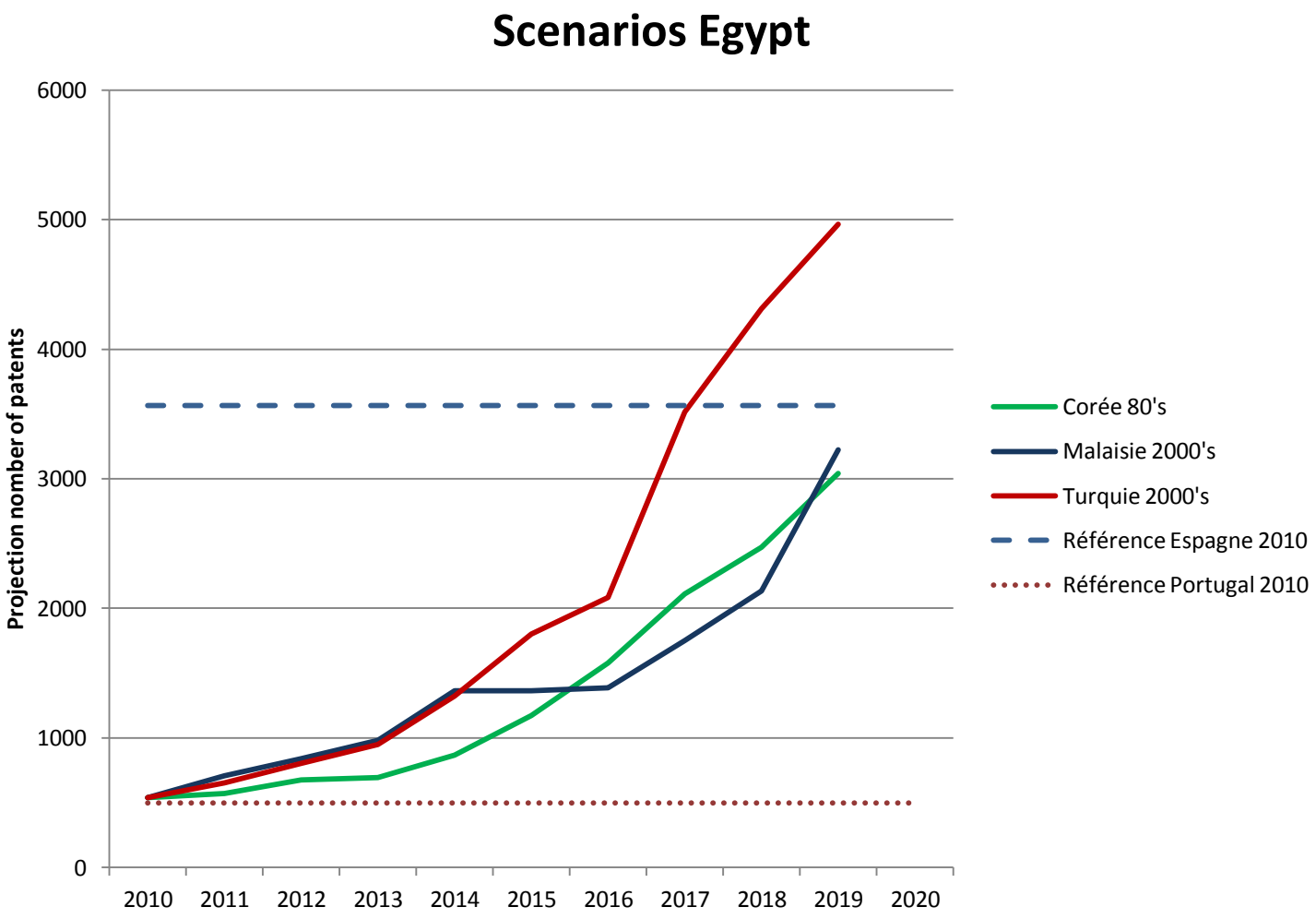
- The development of patent filings more or less mirrors the growth of the share of R&D in the country's GDP
- Several lessons can be drawn from this observation:
  - *The importance of utility models in the development of innovation and the accumulation of technology*
  - *The importance of a dynamic approach to innovation*
  - *The importance of considering the protection system as an integral part of the national innovation system*

7-Scenarios

Egypt

- The application of the benchmark scenarios to Egypt leads to estimates of 3000 to 5000 patents in 2020. These levels are comparable or higher than those of Spain currently.

7-Scenarios


Scenarios Egypt
Projection nomber of patents
6000
5000
4000
3000
2000
1000
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Corée 80's
Malaisie 2000's
Turquie 2000's
Référence Espagne 2010
Référence Portugal 2010

Potential market in number of patents

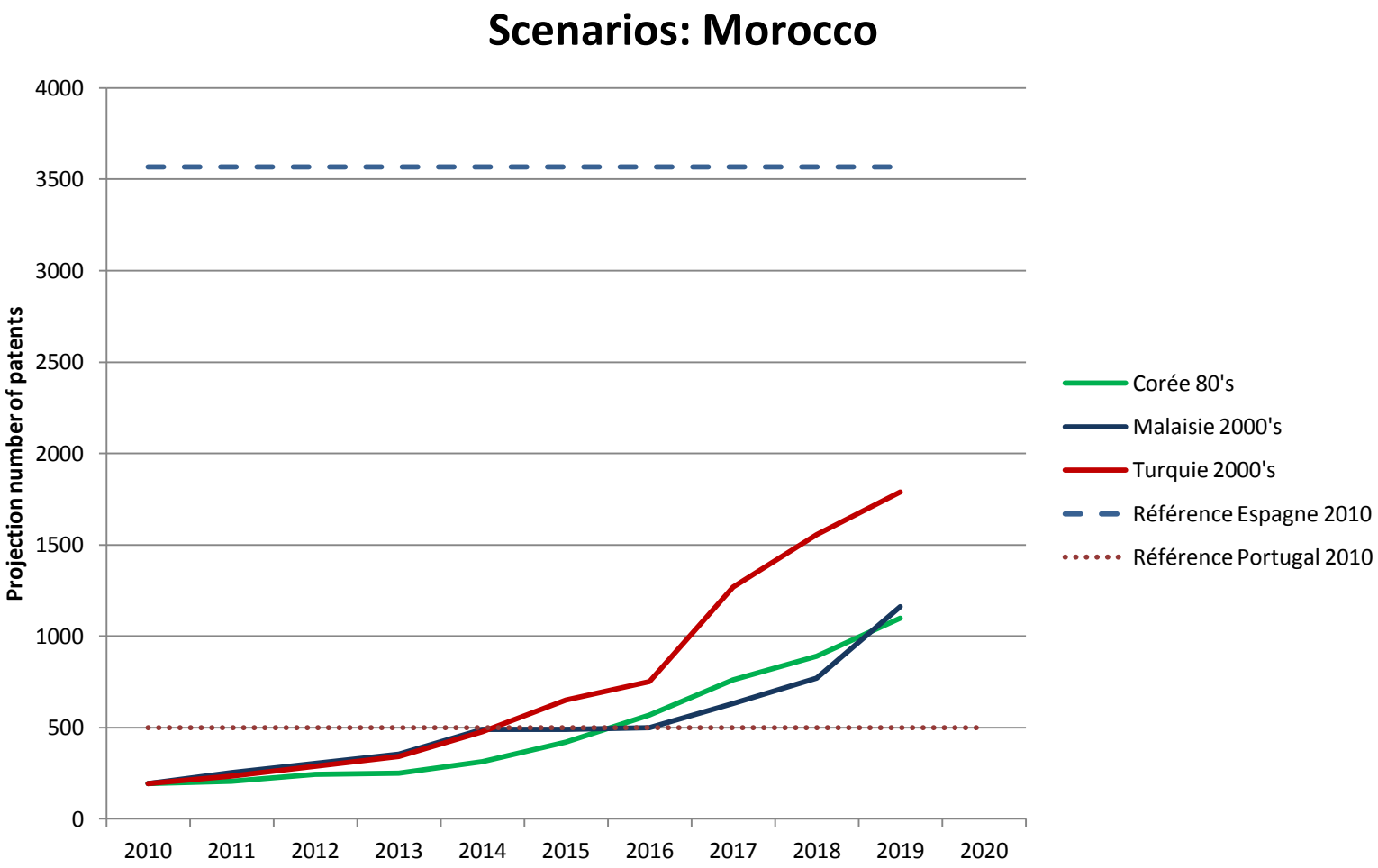
- The Turkish scenario appears to be the most favorable : roughly 5,500 home-based patents by 2020 compared to slightly less than one thousand currently
- ***The patent filing market would thus stand at about 5000 patents (****Residents****) for the three countries.***

7-Scenarios

Morocco

- It is anticipated that the replication of the takeoff scenarios of Turkey, South Korea and Malaysia in Morocco would yield roughly 1000 to 2000 home-based patents by 2020, or two to three times more than in Portugal in 2010, but less than Spain (roughly 3500 in 2010).

7-Scenarios

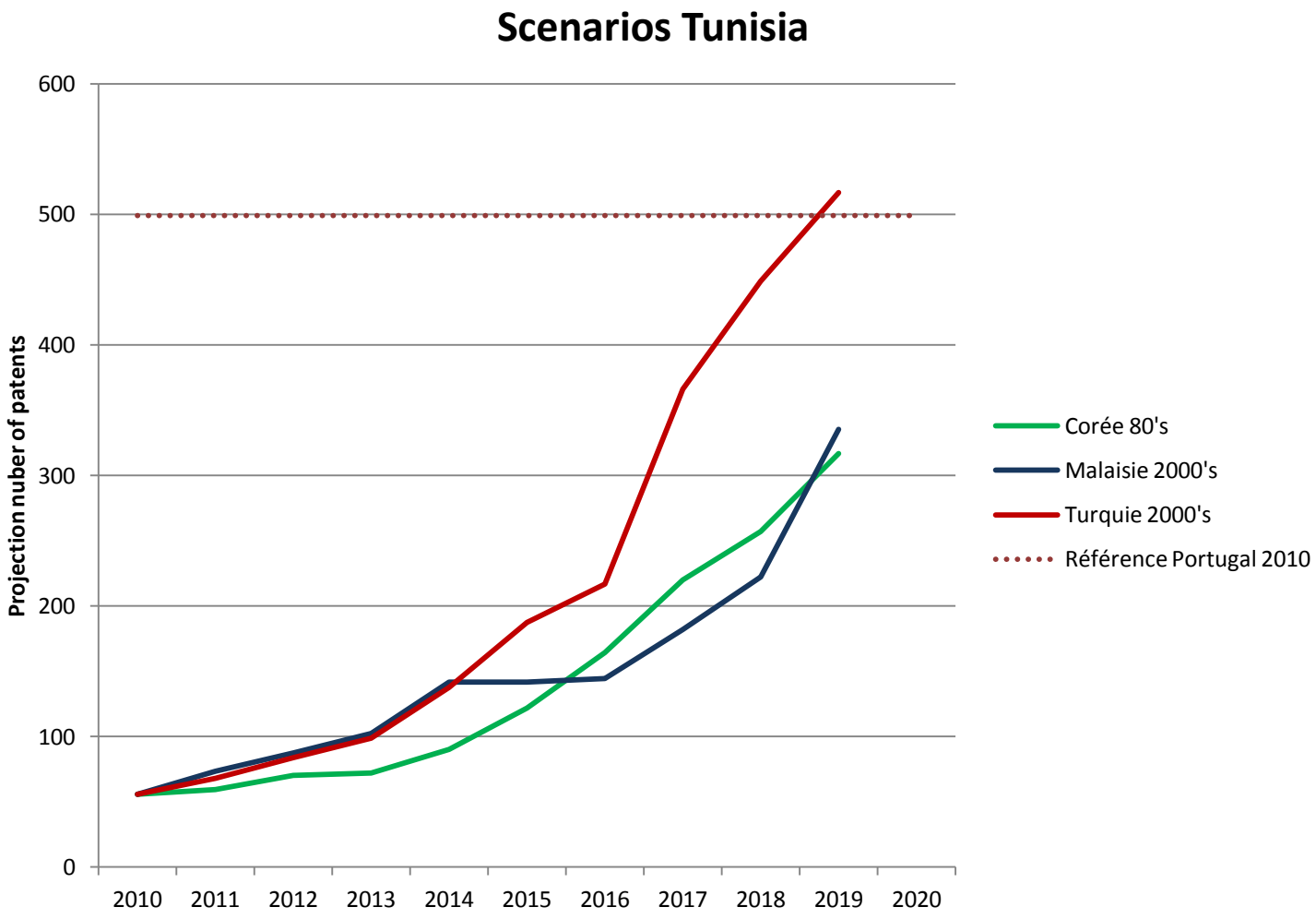

Scenarios: Morocco
Projection number of patents
4000
3500
3000
2500
2000
1500
1000
500
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Corée 80's
Malaisie 2000's
Turquie 2000's
Référence Espagne 2010
Référence Portugal 2010

7-Scenarios

Tunisia

- The most positive scenario is that of Turkey after 2000 which would lead in 2020, to a home-based patent filing rate equivalent to that of Portugal today (about 500).
- The Korean and Malaysian scenarios allow the number of patents filed in 2020 to be estimated at 300
- In all, **it can be reasonably expected that the potential for development of home-based patents would be 300 to 500 per year by 2020**

7-Scenarios


Scenarios Tunisia
Projection nuber of patents
600
500
400
300
200
100
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Corée 80's
Malaisie 2000's
Turquie 2000's
Référence Portugal 2010

8- OPTIONS

Two complementary strategies :

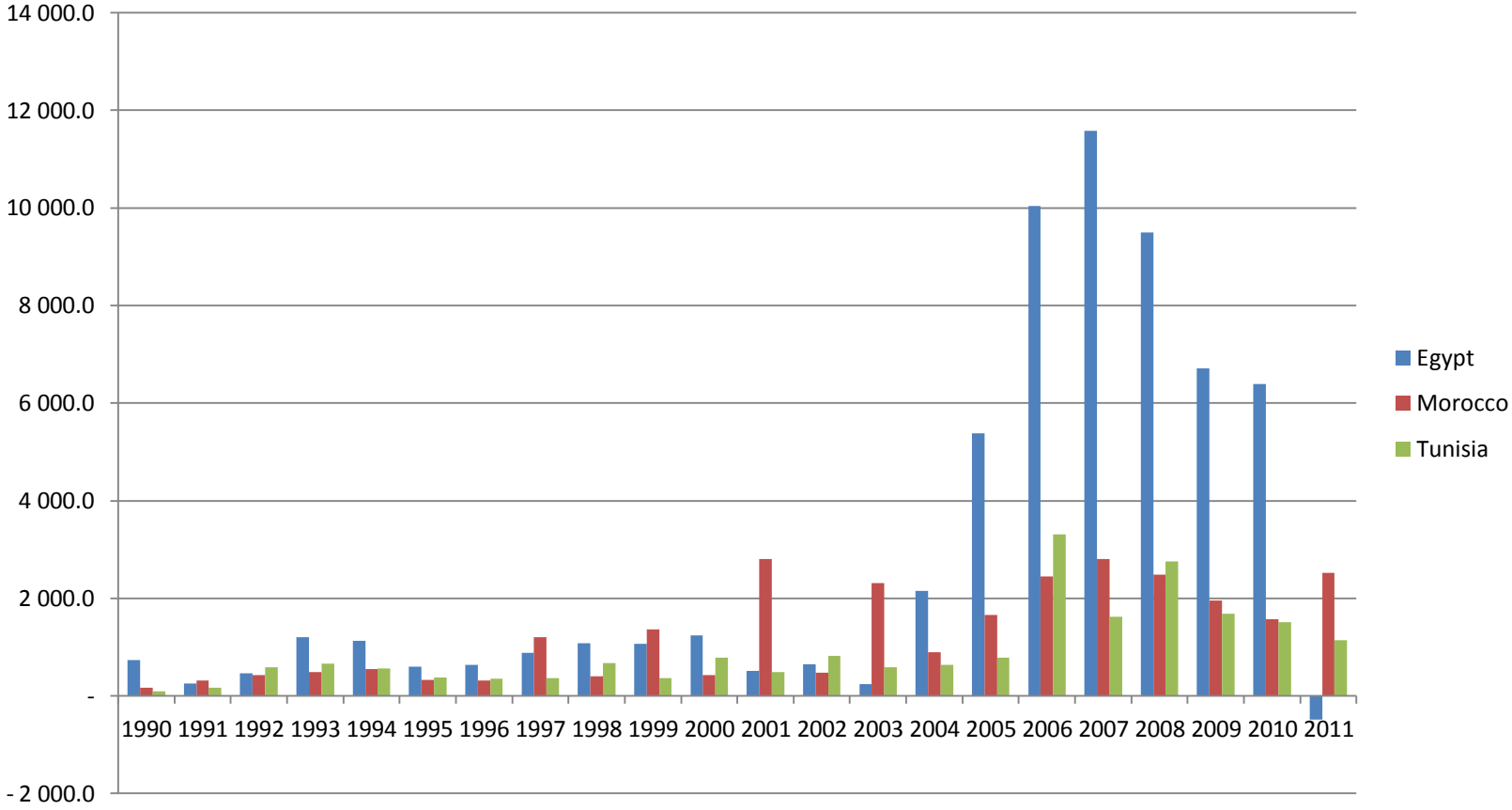
1. ***The development of innovation hubs positioned in global industries***: automobile, aeronautics, mechanics, materials, chemicals, software, bio/nanotechnologies etc.

2. ***Low cost technology/product innovation streams*** (a ***Logan strategy*** for patents).

8-Options

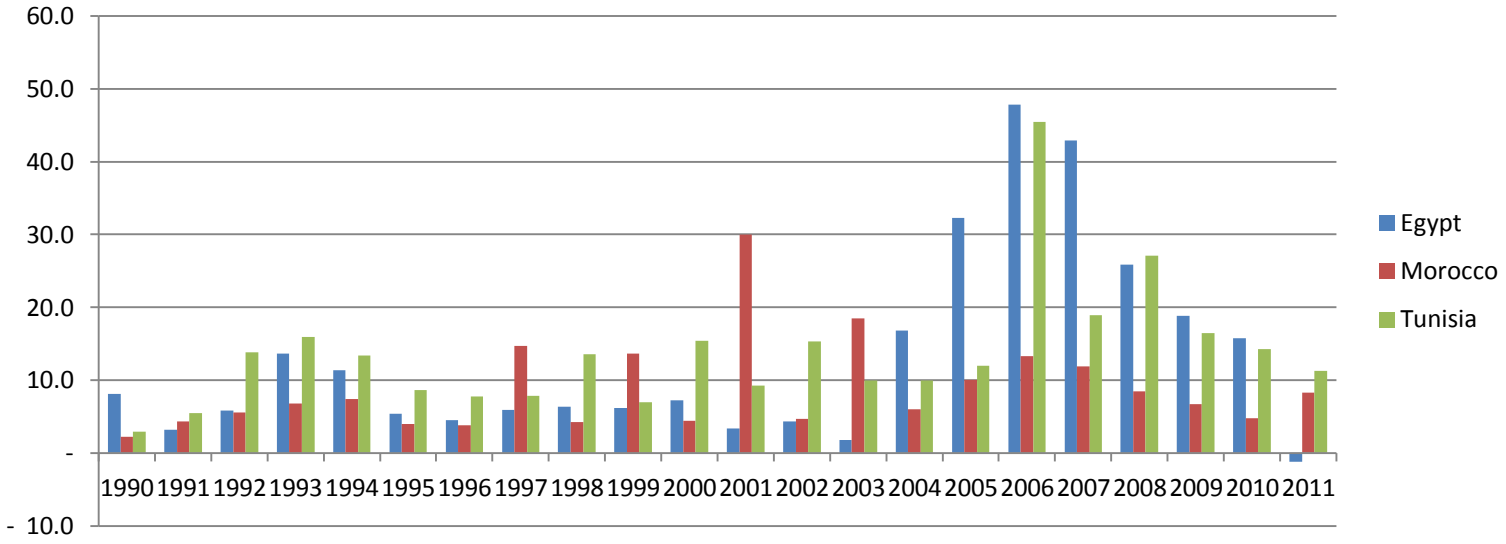
1-The development of innovation hubs positioned in global industries : World-scale Platforms

FDI Inflow for the three countries, Millions US $ (1990-2011)

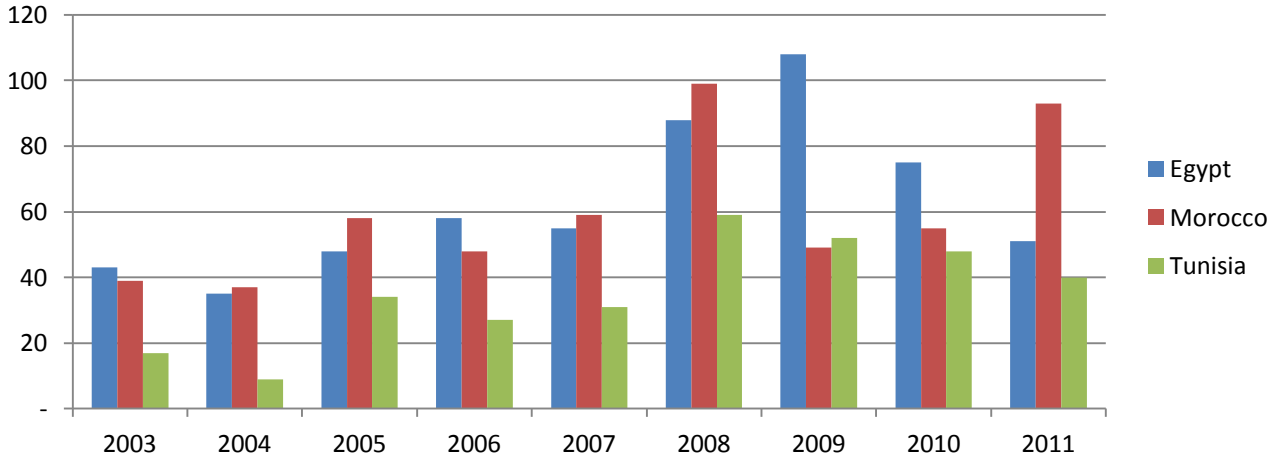


8-Options

FDI inflow as percentage of GFCF for the three countries



Number of greenfields FDI projects, 2003-2011



8-Options

2-The Development of Innovative Capability Intended for Local and Regional Needs : The "Logan Strategy"
(in particular in Africa)

- The development of quick, low-cost innovations centered on the fundamental needs of the population: the management of water, energy and food.
- **The approach here is one of developing self-sufficient scientific and technical capabilities**

Adopting a utility model type approach for this type of development would be of interest.

8-Options

A policy and technical instrument

The “**Med patents workshops**”

9- Conclusion : Patents and strategic innovation policy

- **« Hard » intangibles *versus* « Soft » intangibles** : *the two facettes of the transformation of national innovation systems*
- **Hard intangibles might be used as catalysts for forstering** innovation : Korea did it, China is doing it ….
- ***The cognition dimension : Hard intangibles are easy to understand*** - they are the most tangible intangibles !

Thank you for your attention