

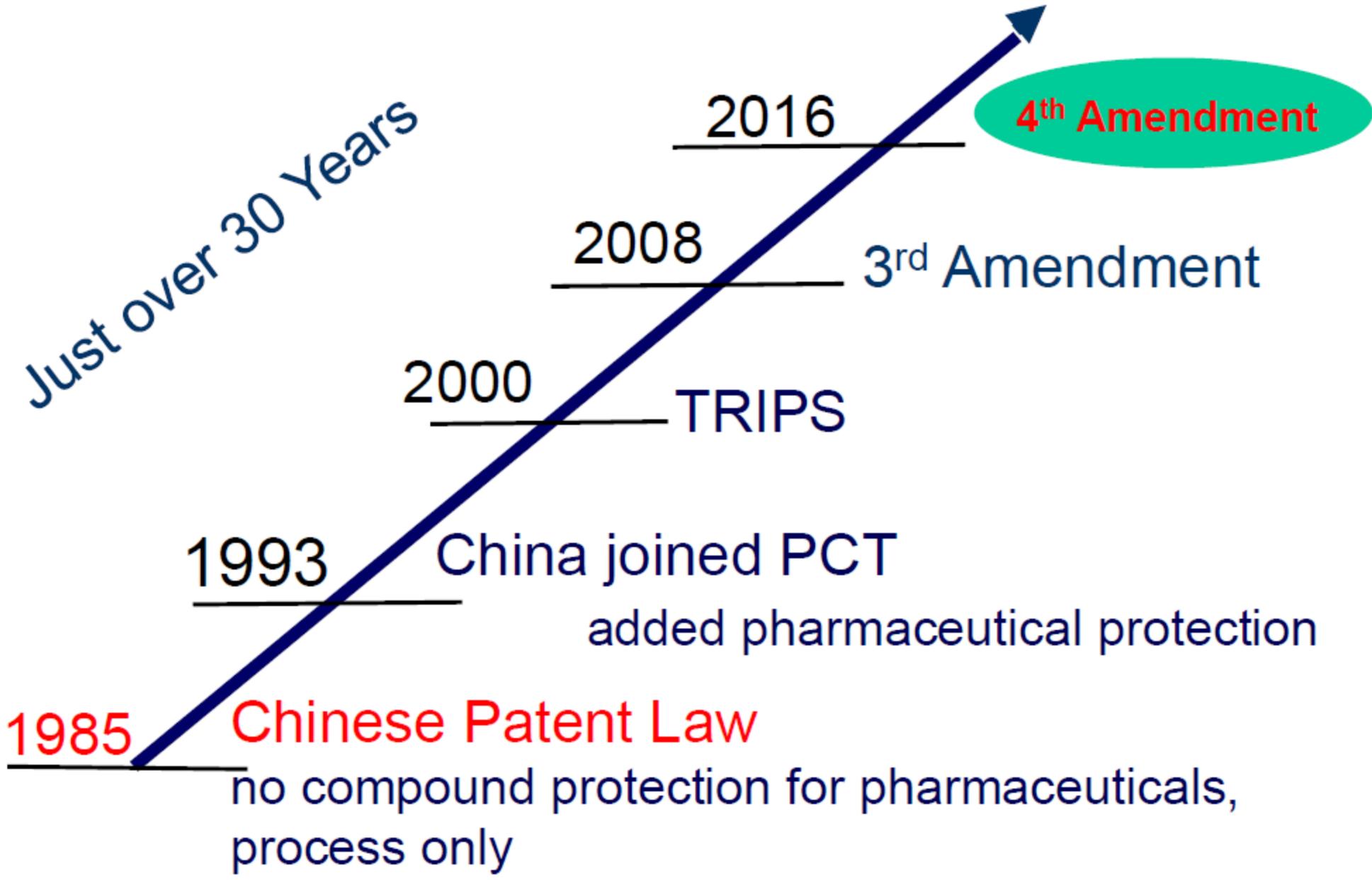
La Chine va-t-elle dominer la
propriété intellectuelle?

Les brevets en Chine

La première loi spécifique au brevet en Chine a été promulguée en 1889 vers la fin de la dynastie Qing.

Toutefois, la législation chinoise sur les brevets a commencé par la publication en 1950 du Règlement provisoire sur la protection des droits d'invention et des droits de brevet, qui accordait des récompenses aux inventeurs mais laissait la propriété intellectuelle entre les mains de l'État.

Le déclenchement de la Révolution culturelle au milieu des années 1960 a cependant mis fin à cette modeste reconnaissance de la propriété intellectuelle.



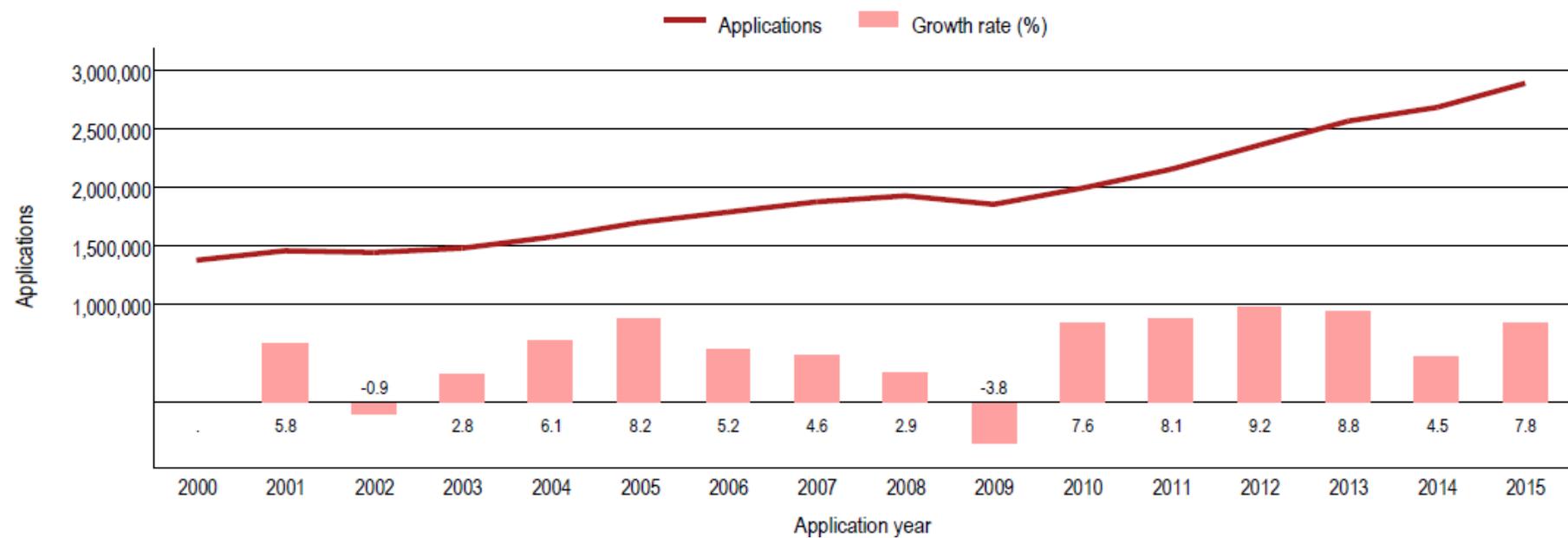
Une domination quantitative

Au début de 2006, la Chine a organisé un sommet national sur la science et la technologie et a adopté le «Plan national à moyen et long terme pour la science 2006-2020». L'innovation est devenu l'un des axes majeurs du développement pour la période 2016-2020

La Chine est devenu le premier déposant mondial de brevets

Elle représente 40% des 2.9 millions de brevets déposés dans le monde en 2015, et l'essentiel de la croissance des dépôts (+8%)

A1 Trend in patent applications worldwide



Source: Wipo, 2016 report)

Le nombre de dépôts de brevets en Chine a explosé passant de 173,327 en 2005 à 1,101,864 en 2015.

The State Intellectual Property Office of the People's Republic of China (SIPO) est devenu en 2015 **le premier office à recevoir plus d'un million de dépôt de brevets en une seule année.**

Comparaison avec les autres offices majeurs:

USPTO 589,410

JPO 318,721

KIPO 213,694

EPO 160,028

Patent filings since 1883

From 1883 to 1963, the USPTO was the leading office for world filings. Application numbers at the JPO and the USPTO were stable until the early 1970s, when the JPO began to see rapid growth, a pattern also observed for the USPTO from the 1980s onwards. Among the top five offices, the JPO surpassed the USPTO in 1968 and maintained the top position until 2005. Since early 2000s, the number of applications filed at the JPO has trended

downward. Both the EPO and KIPO have seen increases each year since the early 1980s, as has SIPO since 1995. SIPO surpassed the EPO and KIPO in 2005, the JPO in 2010 and the USPTO in 2011 – and it now receives the largest number of applications worldwide. There has been a gradual upward trend in the combined share of the top five offices in the world total – from 70.4% in 2000 to 82.5% in 2015.

Trend in patent applications for the top five offices

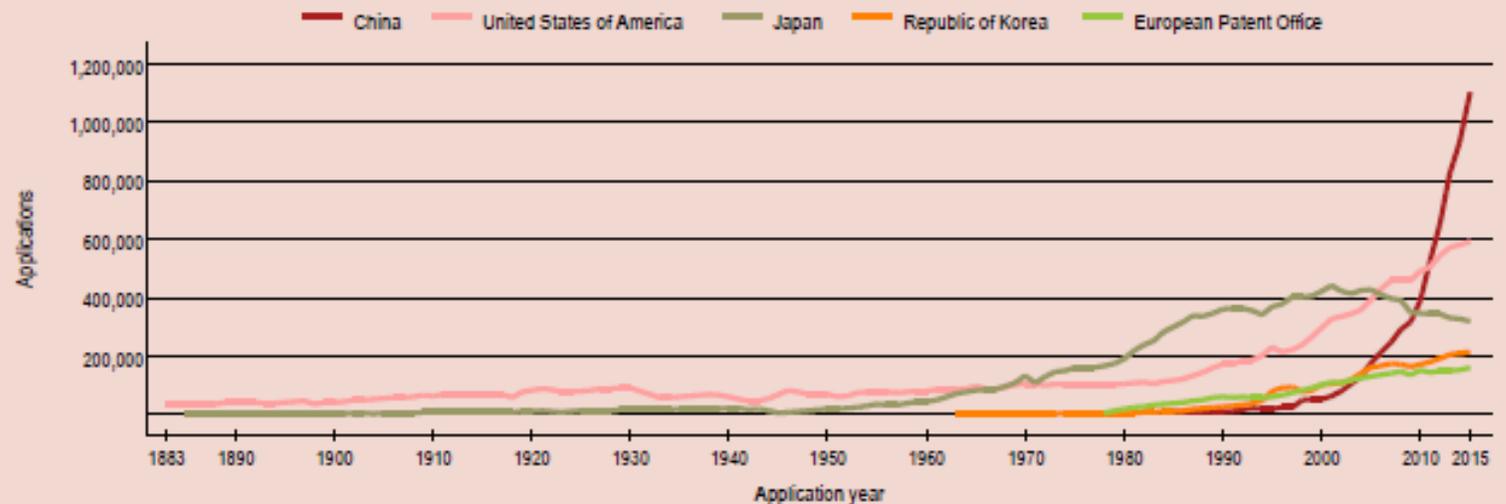
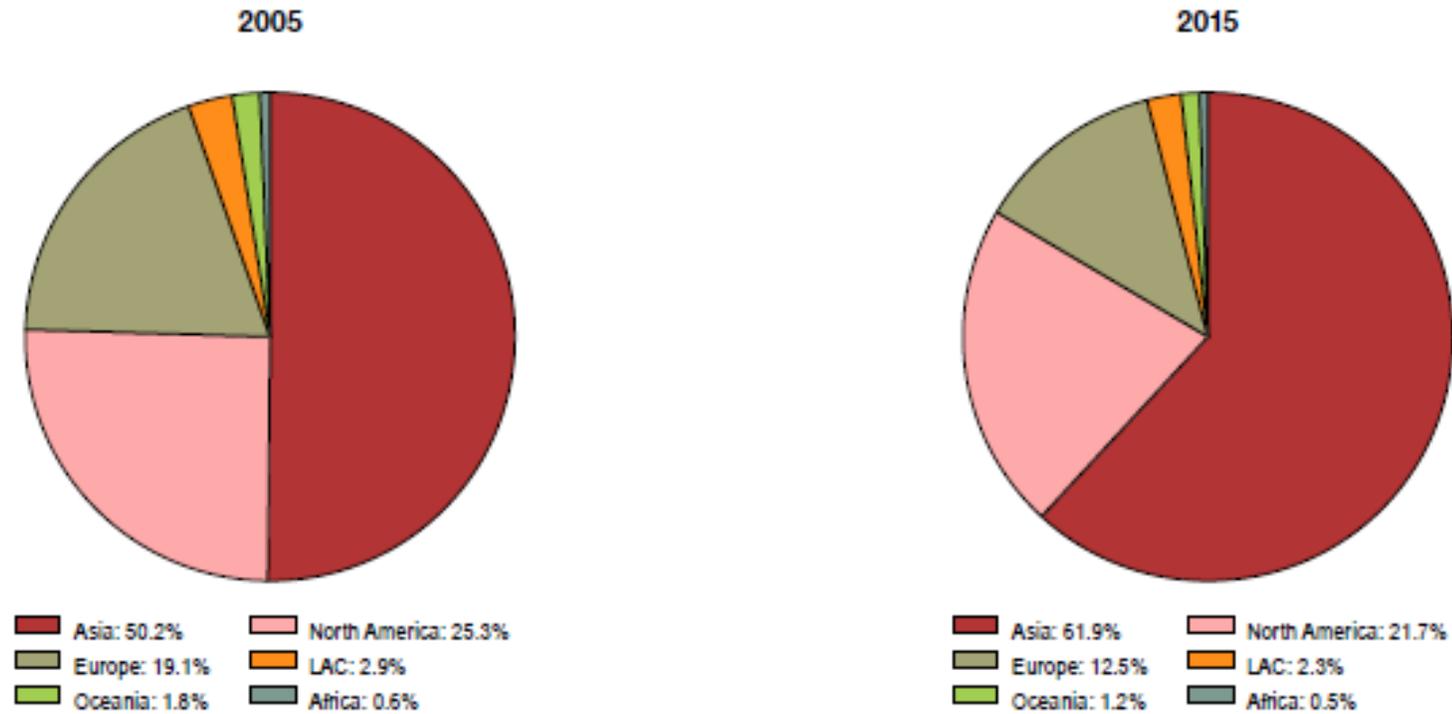


Figure 4. Patent applications by region



L'équilibre mondial de la PI s'en trouve fortement modifié

A14 Trend in patent grants for the top five offices

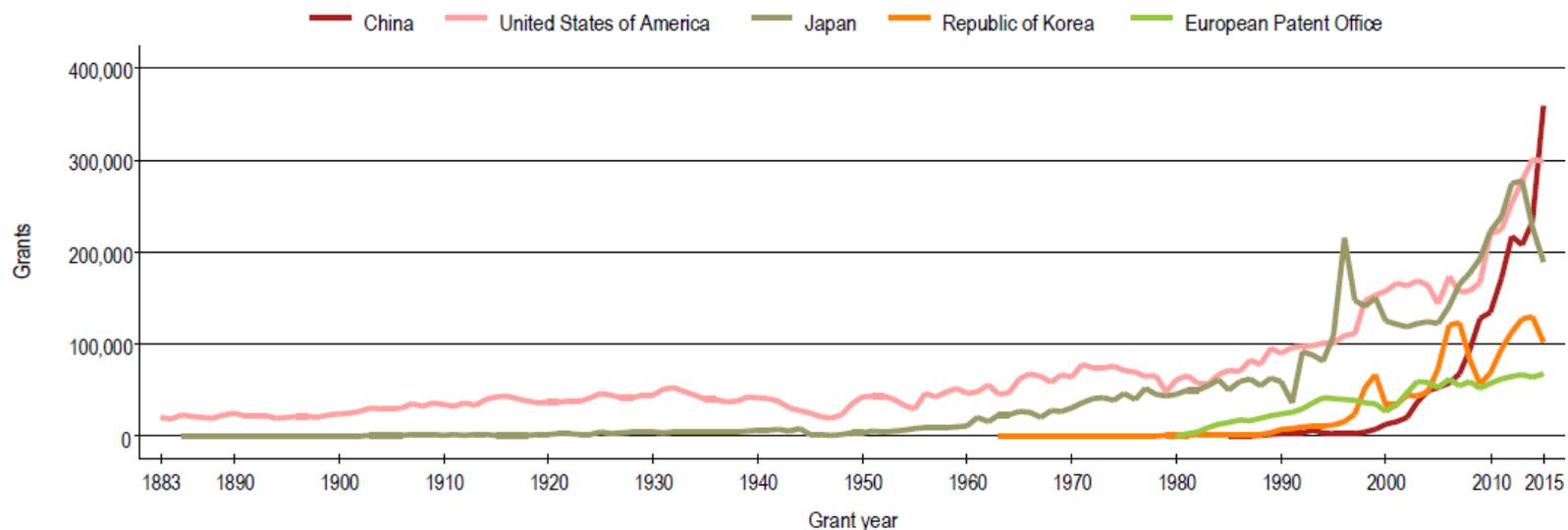
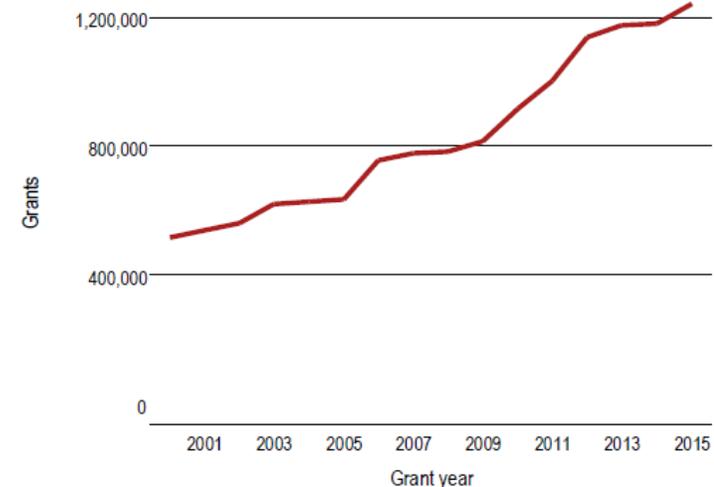


Figure 7. Patent grants worldwide



Une progression accélérée des brevets accordés

En 2015, 1.24 million de brevets ont été délivrés (+5.2% par rapport à 2014)

SIPO 359,316 (+54% par rapport à 2014, soit + 126 000)

USPTO 298,407

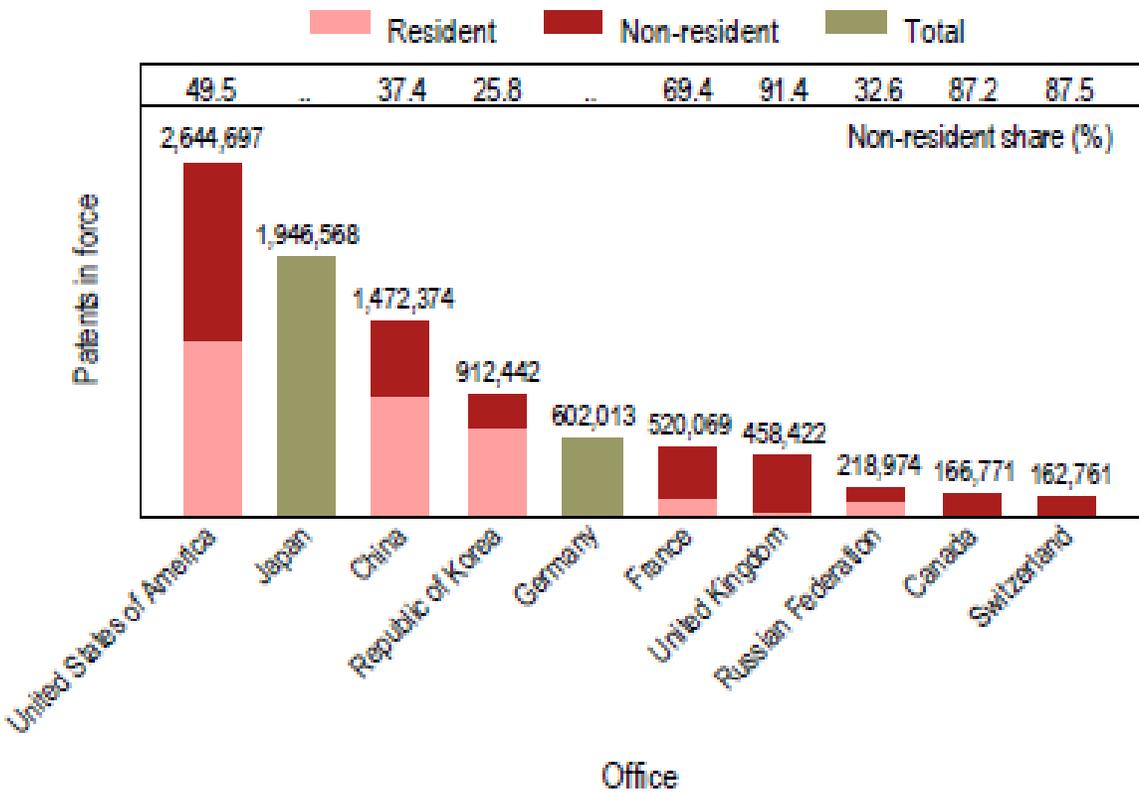
JPO : 189,358 (- 16%)

KIPO: 101,873 (- 21%)

La Chine représente désormais le 3^{ème} patrimoine mondial d'inventions

Le nombre de brevets actifs dans le monde a augmenté de 7.2 millions en 2008 à **10.6 millions** en 2015.

A41 Patents in force at the top 20 offices, 2015



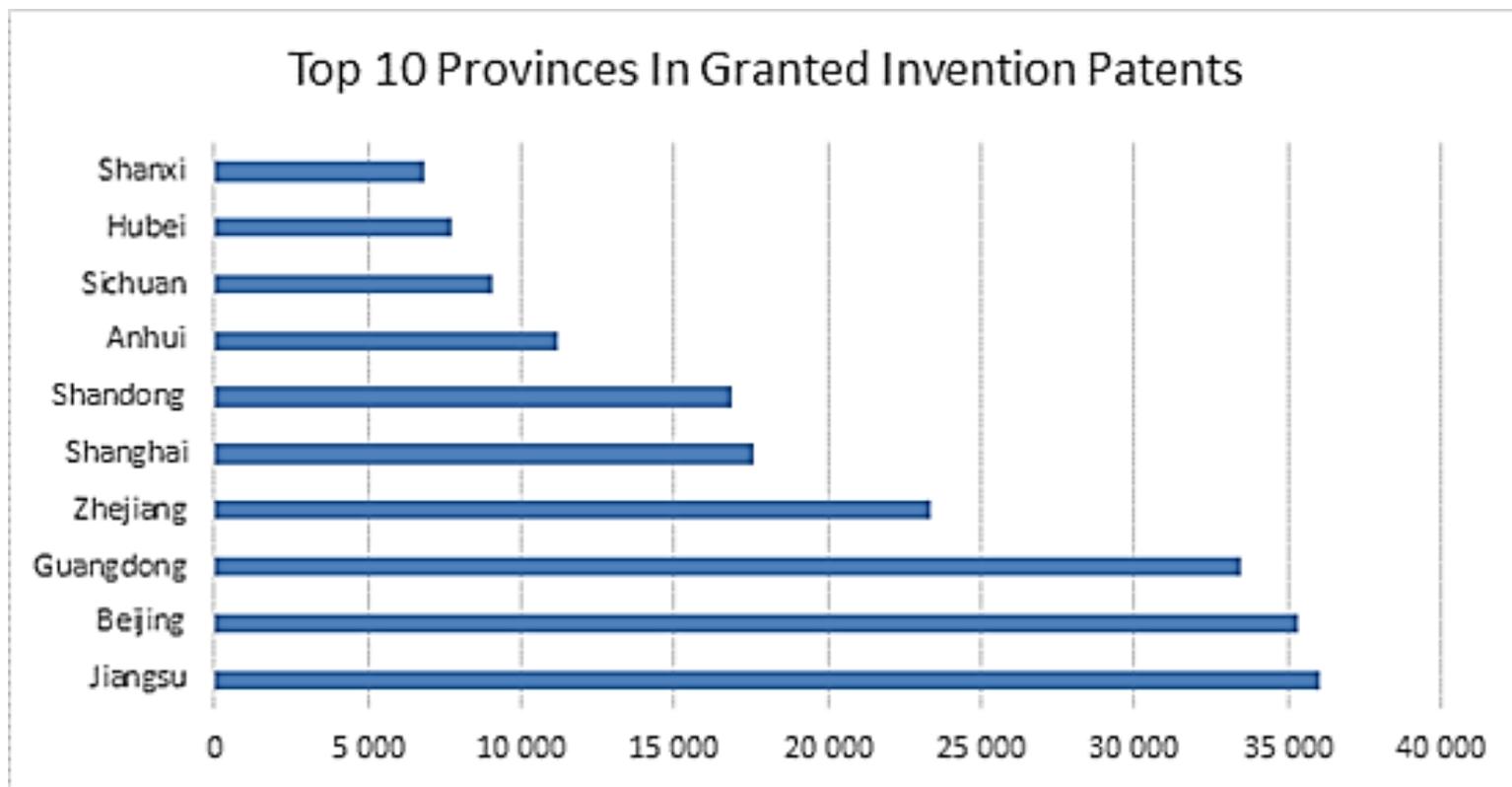
“The USPTO recorded the most, with 2.64 million patents (24.9 % of the world total),

followed by the JPO with 1.95 million (18.3%).

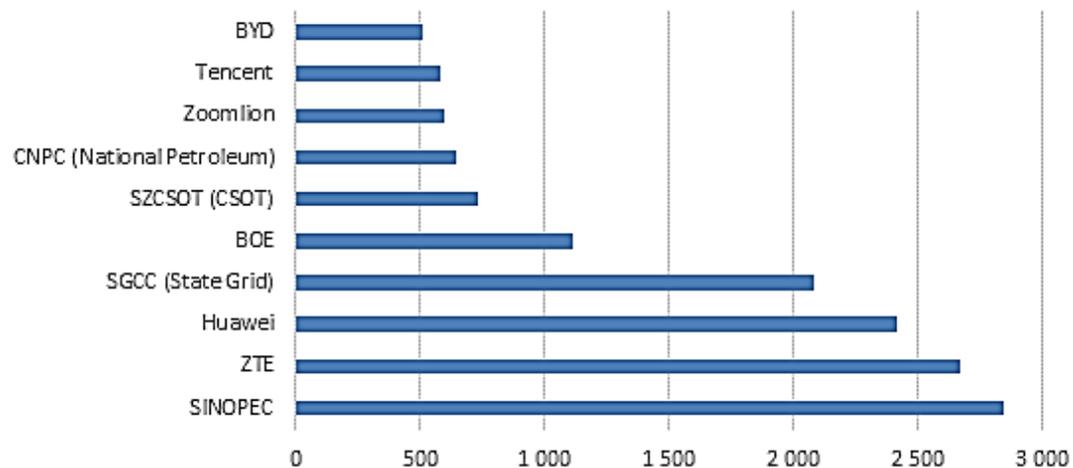
Patents in force at SIPO increased from 0.34 million in 2008 to 1.47 million in 2015” (Wipo)

D'où viennent les inventions/brevets?

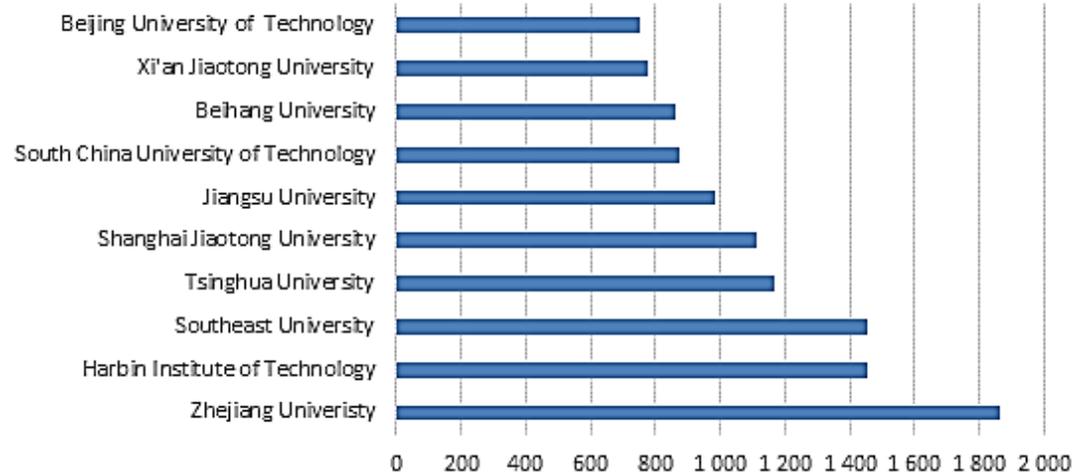
Les dépôts sont concentrés dans 3 provinces: Jiangsu (36,015), Beijing (35,308) and Guangdong (33,477).



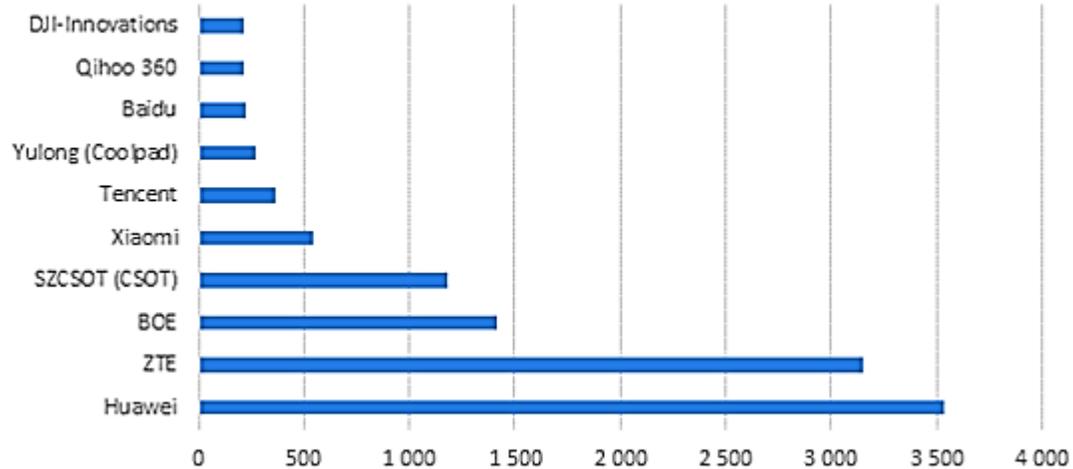
Top 10 Companies in Granted Invention Patents



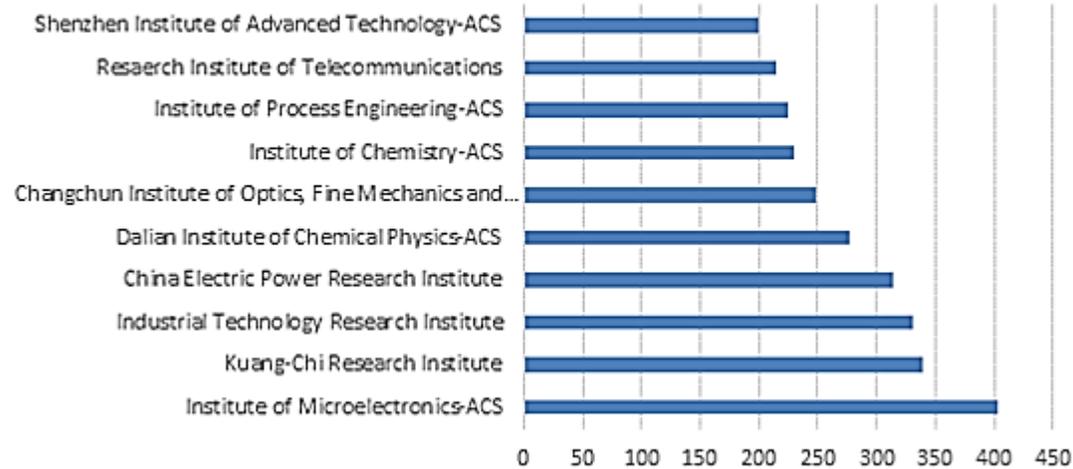
Top 10 Universities in Granted Invention Patents



Top 10 Companies in PCT Filings



Top 10 Institutes in Granted Invention Patents



(SIPO statistics)

Les sociétés chinoises parmi les premiers déposants mondiaux

A26 Top 100 patent applicants worldwide, based on total number of patent families

Applicant	Origin	2010	2011	2012	2013	Total number of patent families, 2010-13
Panasonic Corporation	Japan	10,780	10,284	8,295	4,993	34,352
Canon Inc	Japan	6,686	7,132	7,507	7,711	29,036
Toyota Jidosha KK	Japan	7,040	7,962	6,317	5,525	26,844
Samsung Electronics Co Ltd	Republic of Korea	5,873	5,865	6,666	8,243	26,647
Toshiba KK	Japan	6,087	6,055	6,030	5,422	23,594
Mitsubishi Electric Corporation	Japan	5,389	5,415	5,893	5,435	22,132
Honghai Precision Industry Co Ltd	Taiwan, Province of China	6,783	4,842	4,254	4,539	20,418
International Business Machines Corporation	United States of America	4,463	4,419	5,108	5,298	19,288
Ocean's King Lighting Science & Technology Co Ltd	China	1,755	2,310	5,028	9,914	19,007
Sharp Corporation	Japan	4,756	5,013	5,929	3,082	18,780
Seiko Epson Corporation	Japan	5,531	5,374	3,833	3,715	18,453
Ricoh Co Ltd	Japan	4,402	4,397	4,155	4,781	17,735
Robert Bosch GmbH	Germany	3,674	3,814	4,339	4,339	16,166
ZTE Corporation	China	5,065	4,521	3,577	2,219	15,382
Huawei Technologies Co Ltd	China	2,124	3,240	4,644	5,117	15,125
Fujitsu Ltd	Japan	3,488	3,768	3,663	3,562	14,481
Denso Corporation	Japan	3,337	3,435	3,460	3,694	13,926
State Grid Corporation of China	China	361	1,039	3,327	8,005	12,732
China Petroleum & Chemical Corporation	China	2,436	3,092	3,394	3,802	12,724
Honda Motor Co Ltd	Japan	3,533	3,156	3,019	2,992	12,700

L'activité
exceptionnelle
des
universités
chinoises
dans le dépôt
de brevets.

A30 Top 5 university and PRO patent applicants worldwide for selected origins

Applicant	Origin	2010	2011	2012	2013	Total number of patent families, 2010-13
Zhejiang University	China	2,111	2,217	2,380	2,780	9,488
Tsinghua University	China	1,643	1,779	2,125	2,060	7,607
Harbin Institute of Technology	China	1,168	1,146	1,574	2,065	5,953
Shanghai Jiao Tong University	China	1,135	1,338	1,573	1,763	5,809
Southeast University	China	961	1,304	1,433	1,939	5,637
Commissariat Energie Atomique	France	585	634	665	731	2,615
Centre Nat Rech Scient	France	484	485	516	532	2,017
Inst Nat Santé Rech Med	France	58	129	119	172	478
Univ Claude Bernard Lyon	France	39	31	52	49	171
Centre Nat ETD Spatiales	France	34	41	45	38	158
Fraunhofer Ges Forschung	Germany	434	441	491	523	1,889
Deutsches Zentrum für Luft und Raumfahrt	Germany	232	205	222	238	897
Univ Dresden Tech	Germany	75	78	78	26	257
Max Planck Gesellschaft	Germany	82	60	60	53	255
Karlsruher Inst Technologie	Germany	58	59	51	16	184
Nat Inst of Adv Ind & Tech	Japan	801	664	677	628	2,770
Tokyo University	Japan	379	364	327	408	1,478
Tohoku University	Japan	365	337	324	300	1,326
Osaka University	Japan	243	226	272	256	997
Kyoto University	Japan	212	210	224	235	881
Korea Electronics Telecomm	Republic of Korea	1,752	1,996	2,694	2,558	9,000
Korea Advanced Inst Sci & Tech	Republic of Korea	1,015	1,006	1,101	856	3,978
SNU R&DB Foundation	Republic of Korea	621	550	609	599	2,379
Yonsei University	Republic of Korea	535	552	577	611	2,275
Univ Korea Res & Bus Found	Republic of Korea	494	518	509	473	1,994
The USA as represented by the Secretary of the Navy	United States of America	231	204	92	65	592
Northwestern University	United States of America	73	103	91	167	434
The USA as represented by the Secretary of the Army	United States of America	165	126	61	64	416
Massachusetts Institute of Technology	United States of America	88	76	56	33	253
Wisconsin Alumni Res Found	United States of America	40	52	54	98	244

Un système de propriété intellectuelle de plus en plus crédible

La qualité des brevets

L'efficacité de l'Office des brevets

La protection judiciaire

L'interrogation sur la qualité est de moins en moins justifiée

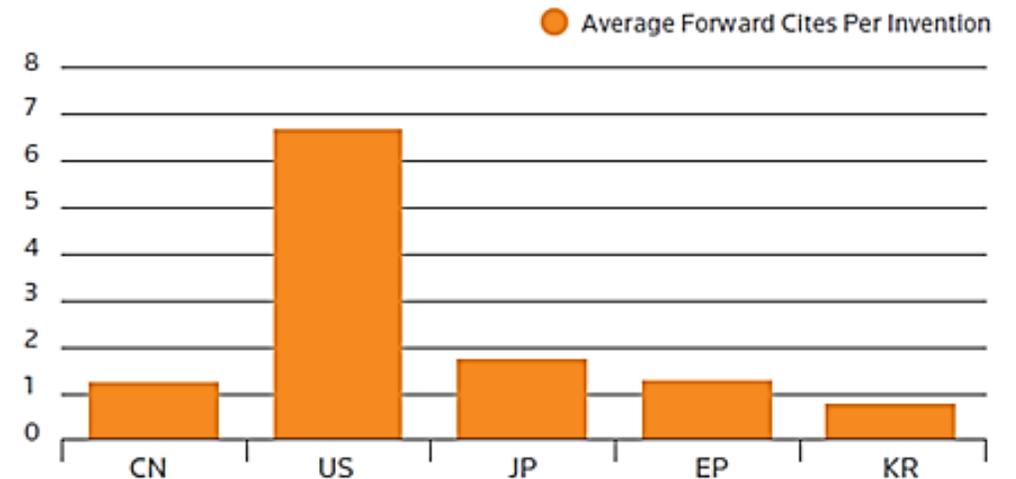
Le système d'incitation et la très forte progression des dépôts a conduit à s'interroger sur la qualité des brevets chinois.

Mais il n'existe aucune démonstration scientifique de cette mise en cause.

Il existe au contraire un certain nombre d'éléments qui conduisent à conclure que les brevets chinois sont désormais de qualité identique:

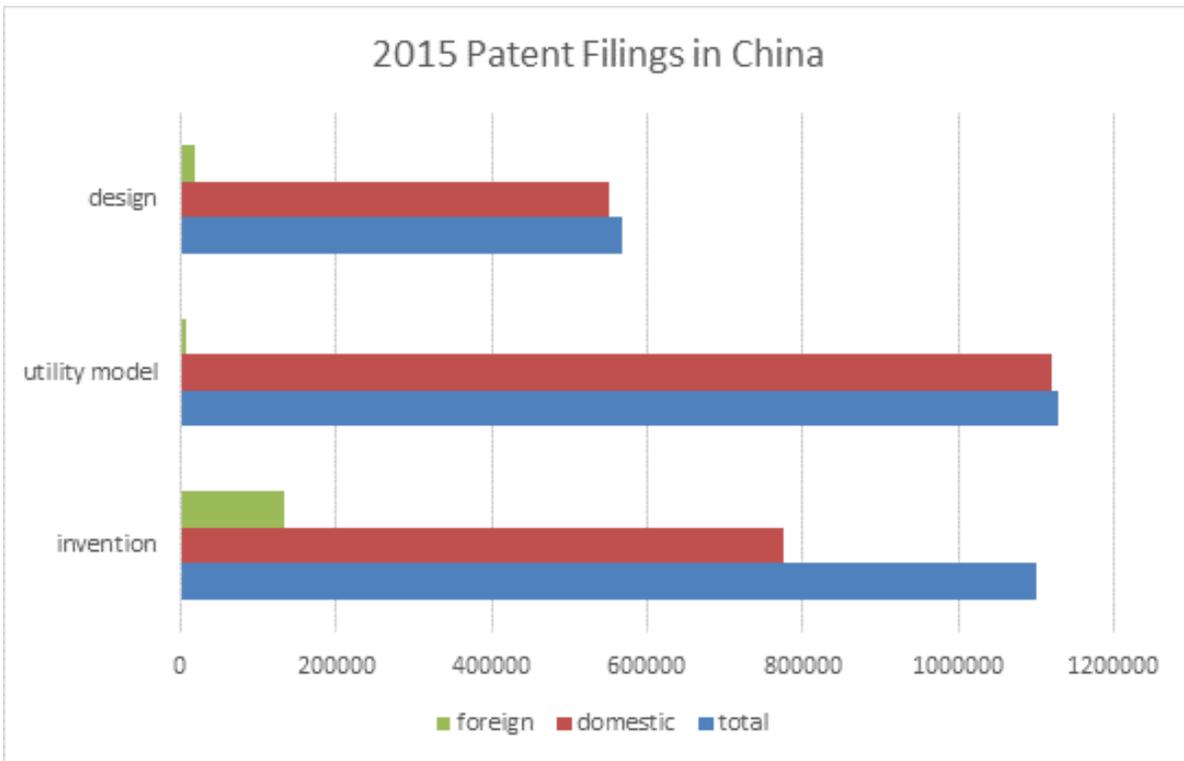
- l'importance des efforts en faveur de la recherche et la croissance du nombre de chercheurs
- Le système des modèles d'utilité qui permet de différencier les inventions
- Le renforcement des moyens de l'office chinois
- L'analyse (Thomson Reuter) des citations des brevets chinois qui montre qu'ils sont désormais autant cités (1,17) que les brevets des autres grands pays Japon (1.82), Europe (1.31) – à l'exception des USA (6,72).

Chart 6:
FORWARD CITATIONS FOR DATA PROCESSING INVENTIONS 2008



Source: Derwent World Patents Index and Thomson Innovation

L'importance des modèles d'utilité dans la progression de la PI



(SIPO statistics)

Comparaison entre le brevet d'invention et le modèle d'utilité

Source : Cabinet Tian Long

	Brevet d'invention	Modèle utilitaire
Durée de protection	20 ans	10 ans
Duré d'obtention (moyen)	25,8 mois	5,8 mois
Coût	Important	Peu important
Examen	Substantiel	Formel et examen préliminaire
Inventivité	Forte	faible

China moves to 17th place in innovation quality this year, narrowing the distance with the high-income economies (Global Innovation Index)

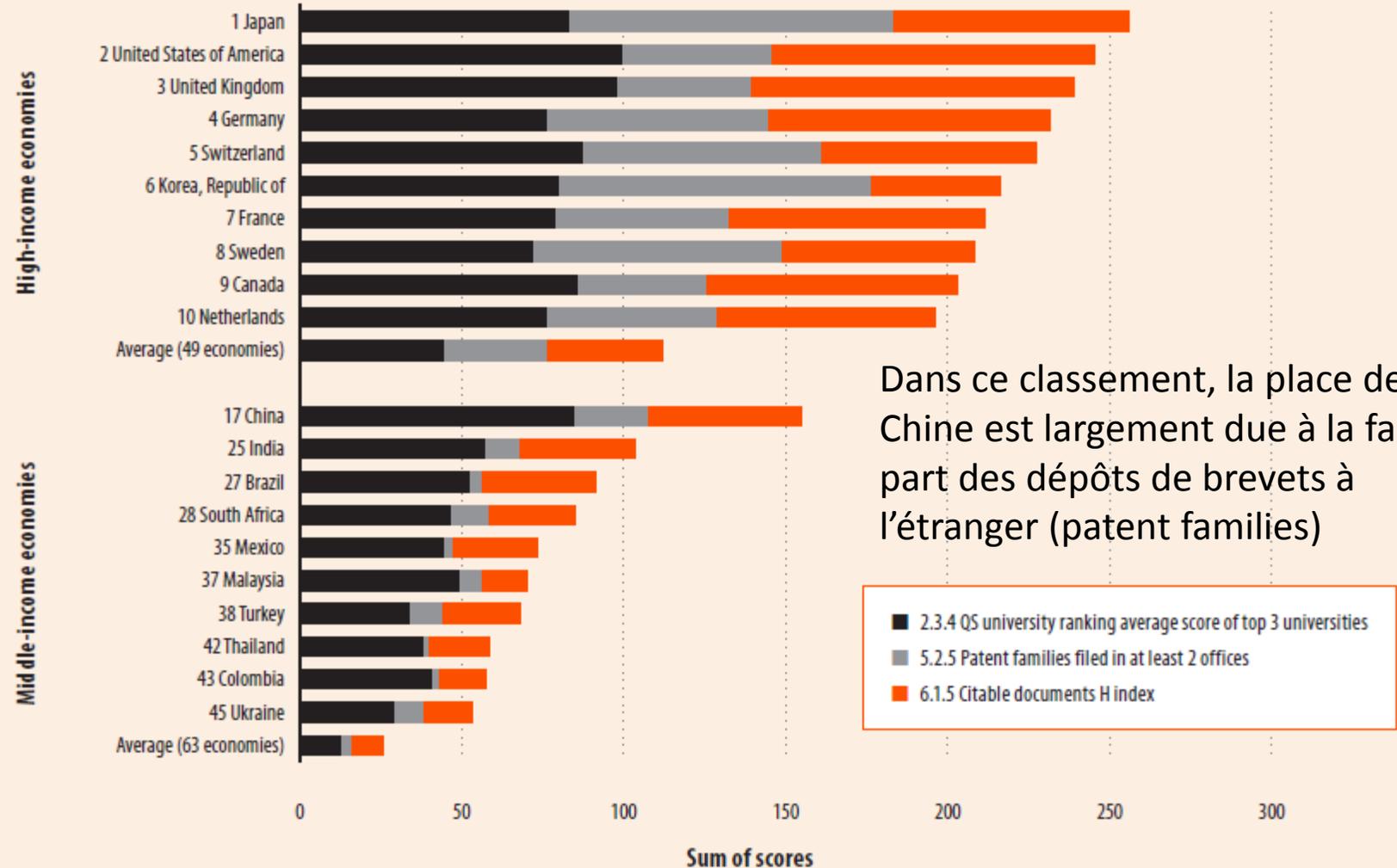
Table 1.1: Gross domestic expenditure on R&D (GERD): Crisis and recovery compared

Countries with no fall in GERD during the crisis that have expanded since

	CRISIS		RECOVERY				
	2008	2009	2010	2011	2012	2013	2014
Egypt*	100	168	177	220	229	293	300
China	100	126	143	163	189	212	231
Argentina	100	115	128	145	165	171	n/a
Poland	100	113	127	138	166	166	185
Turkey	100	111	121	134	147	157	172
Korea, Rep.	100	106	119	133	147	155	166
India*	100	106	113	125	n/a	n/a	n/a
Mexico	100	102	113	110	116 ^P	136 ^P	150 ^P
Hungary	100	108	110	116	121	136	138
Belgium	100	101	107	114	126	129	133
Colombia*	100	101	106	120	125	161	129
Russian Fed.	100	111	104	105	112	114	120
Ireland	100	110	110	107	110	109	114
France	100	104	105	108	110	111	112 ^P
New Zealand†	100	107	n/a	109	n/a	108	n/a
Denmark	100	105	102	104	105	107	108 ^P
Australia	100	n/a	102	102	n/a	107	n/a

Box 4: Innovation quality: Japan, the USA, and the UK at the top (continued)

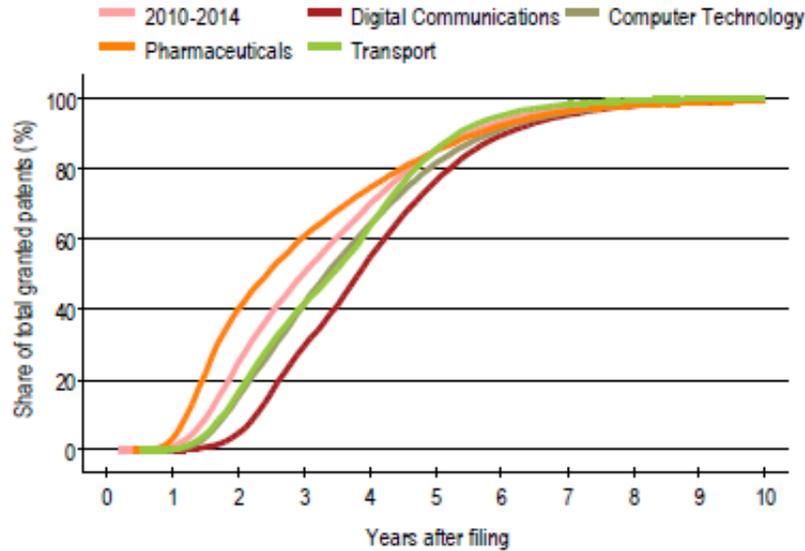
Figure 4.1: Metrics for quality of innovation: Top 10 high- and top 10 middle-income economies



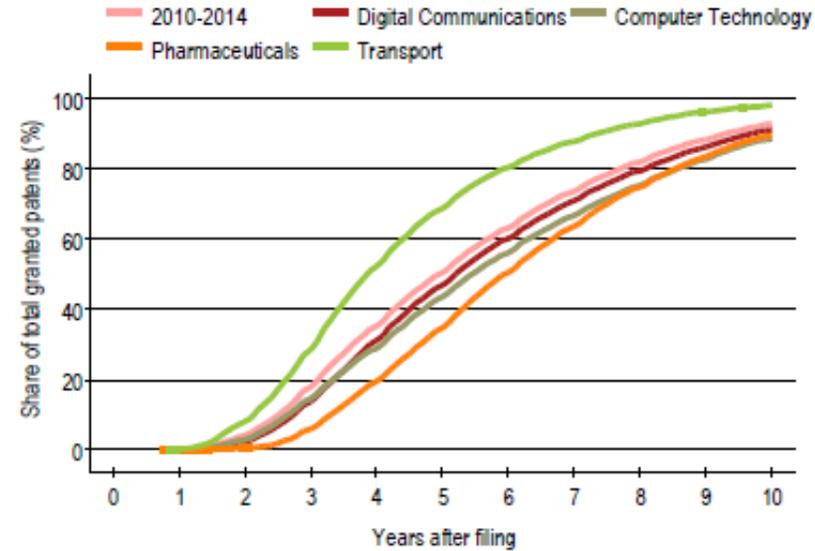
Dans ce classement, la place de la Chine est largement due à la faible part des dépôts de brevets à l'étranger (patent families)

2.3.4 QS university ranking average score of top 3 universities
 5.2.5 Patent families filed in at least 2 offices
 6.1.5 Citable documents H index

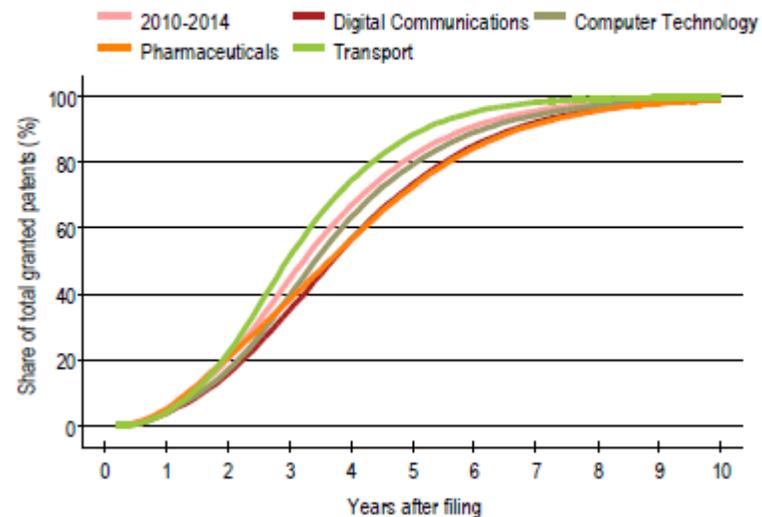
China



European Patent Office



United States of America



L'office chinois est désormais le plus performant des grands offices (60% des brevets accordés au bout de 3,5 ans – contre 4 ans pour USPTO et près de 6 ans pour l'office européen)

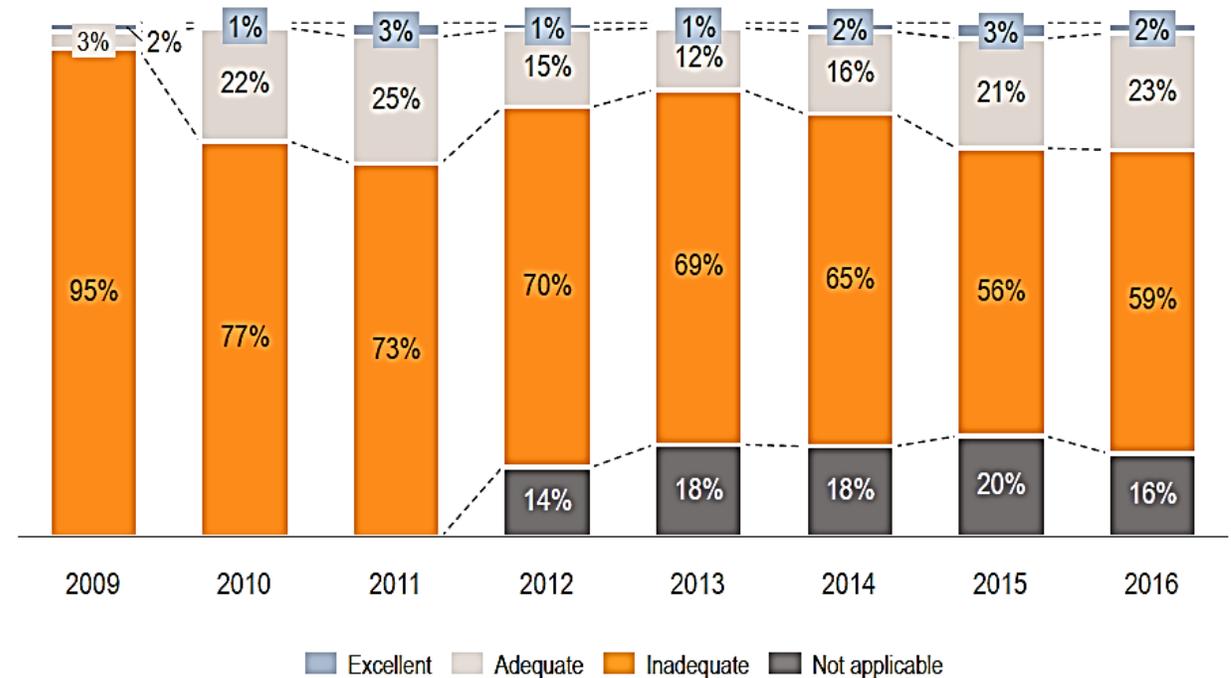
La protection de la PI.

L'opinion commune: des lois de qualité mais une mise en œuvre insuffisante

The majority of respondents report China's IPR laws are adequate; only 25% find that they are properly enforced

“IPR protection: reasonable laws, weak implementation”
AmCham China Report

How do you rate the enforcement of China's written Intellectual Property Rights (IPR) laws and regulations?

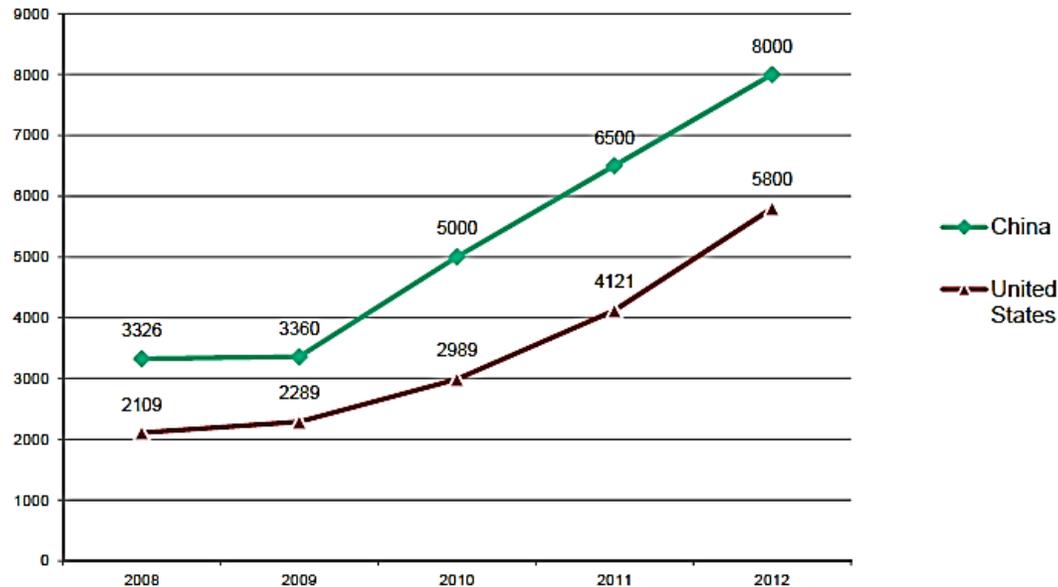


EU Chamber of Commerce in China, Press Conference
Beijing, 7th June, 2016

Pourtant il faut objectivement constater que les brevets font l'objet d'une protection judiciaire accrue

▪ Increasing number of patent suits in China

- China leads Asia and (soon) the rest of the world



China: Includes infringement cases for invention patents, utility models, and design patents. Since 2010, China only discloses the total amount of patent cases, which includes patent infringement disputes, ownership disputes, licensing disputes, and others. As a result, the numbers for 2010-2012 are estimates.

Le cadre juridique et judiciaire a été renforcé

- **Création de Cour spécialisées: Pékin, Shanghai, Guangzhou, en 2014**
- **4^{ème} amendement de 2016:** introduction d'experts, aggravation des sanctions pour contrefaçons volontaires ou répétées...

« Selon les informations parues dans la presse chinoise, la douane chinoise a confisqué 23 000 envois de marchandises et a constitué 5 300 dossiers ; dans les grandes villes comme Pékin Shanghai et Guanzhou, en 2014, les tribunaux civil de la 1^{ère} instance ont reçu 95 500 nouvelles plaintes et ont traité près de 10 000 litiges, soit 2,5 fois de plus qu'en 2013. Les cours criminelles ont traité 3000 cas et ont emprisonné 4 860 personnes incriminées dans la violation du droit de la PI. »

Les sociétés étrangères ne sont pas discriminées, bien au contraire

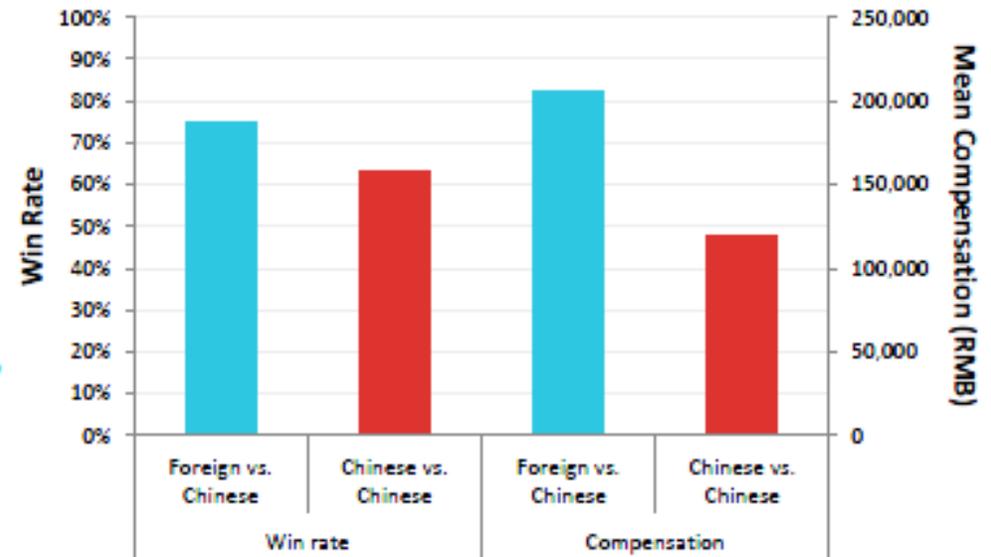
Overall, our findings suggest that Chinese patent litigation is not rife with protectionism. To the contrary, they suggest that foreign companies perform as well, if not better, than Chinese firms in patent suits (Patent Litigation in China: Protecting Rights or the Local Economy? Brian Love, 2016, Santa Clara University School of Law, blove@scu.edu)

China is commonly perceived as an 'unlevel playing field' for foreign litigants. Analysis of patent cases decided on the merits would suggest otherwise.

Foreign plaintiffs in patent litigation win materially more often against domestic defendants than domestic plaintiffs do: a 75% win rate against a 63% win rate since 2006.

The average statutory compensation award for a foreign plaintiff also exceeds that for a domestic plaintiff by 72%.

While a conclusion that Chinese courts actually favour foreign plaintiffs should be cautiously avoided, the data consistently challenges common perceptions.



CIELA, ROUSE, <http://www.ciela.cn/Attach/201511/cf9b8b5eb76fd40a8980855db20667c37.pdf>

Une crédibilité qui s'améliore

AmCham China Report 2016

Brands, IP and Innovation Seen as Greatest Advantages for Foreign Companies

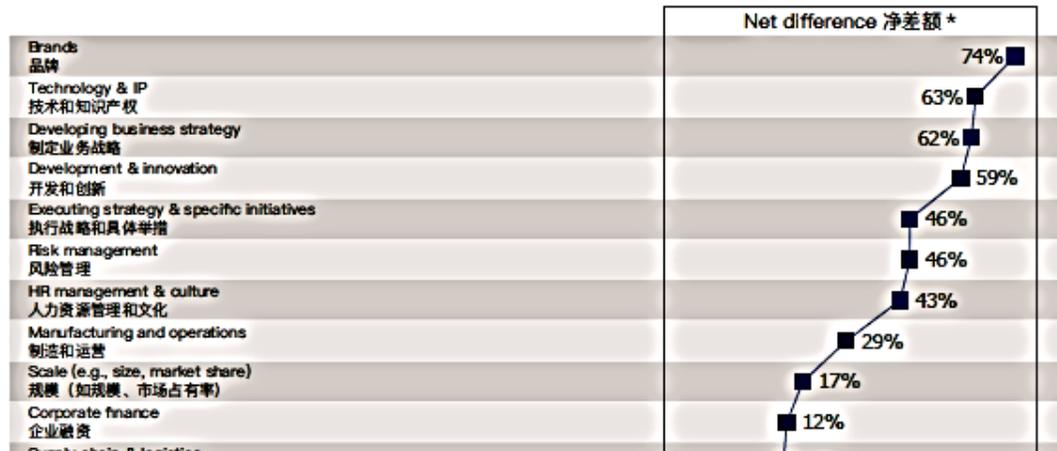
品牌、知识产权和创新被视为外资企业的最大优势

Respondents across industries perceived themselves as having a number of advantages over their domestic competitors; however their strongest perceived advantages reveal the importance of Innovation and strong Intellectual Property Rights protection in China. Three of the top five perceived advantages were linked to the companies' intellectual property, and the ability to develop it: Brands, Technology & IP and Development & Innovation. The other two of the top five advantages were related to the ability to develop and execute strategies. Domestic companies are perceived to be more agile in their operations however, providing stronger competition through their customer network, go-to-market and route-to-market abilities. Domestic companies are also perceived as having an advantage in M&A, JVs and partnering. Domestic companies were most strongly perceived to have a competitive advantage in regulatory management.

来自各个行业的受访者认为与国内竞争对手相比自己具备很多优势，而他们认为最强的优势也凸显了在华创新和加强知识产权保护的重要性。在五大竞争优势中，有三项与企业的知识产权和开发能力有关，即：品牌、技术和知识产权以及开发和创新。其他两项与制定和执行战略的能力有关。本土企业则具有更为灵活的运营能力，通过客户网络、进入市场和市场通路提高竞争能力，并且在并购、合资和合作方面占有优势。本土企业被视为在监管方面最具竞争优势。

How would you compare your company's competitive advantages vs. domestic competitors? Please select the most appropriate rating for each capability.

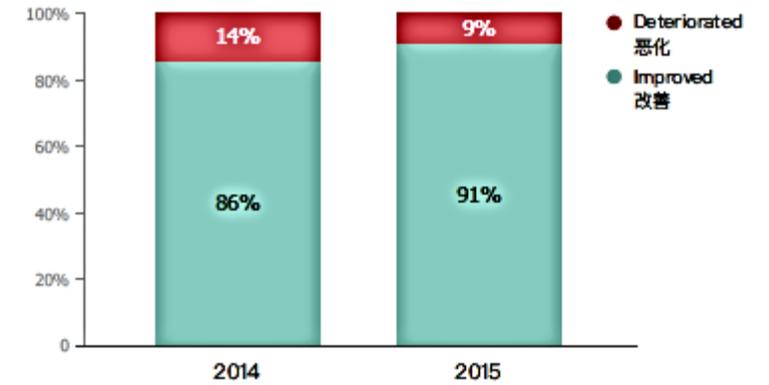
与国内的竞争对手相比，贵公司的竞争优势如何？请为各项能力选择最适当的评价。



Member companies continue to note marked improvements in IPR enforcement, a key factor for their competitiveness in China. This year more than nine in ten report long-term improvement in IPR enforcement.

知识产权法律法规执行关乎到企业在中国的竞争力，会员企业持续关注到中国在这一方面继续取得显著进步。今年，九成企业报告称知识产权执行得到长效改善。

In the last five years, China's enforcement of IPR has:
过去五年间，中国在知识产权法律法规的执行方面：



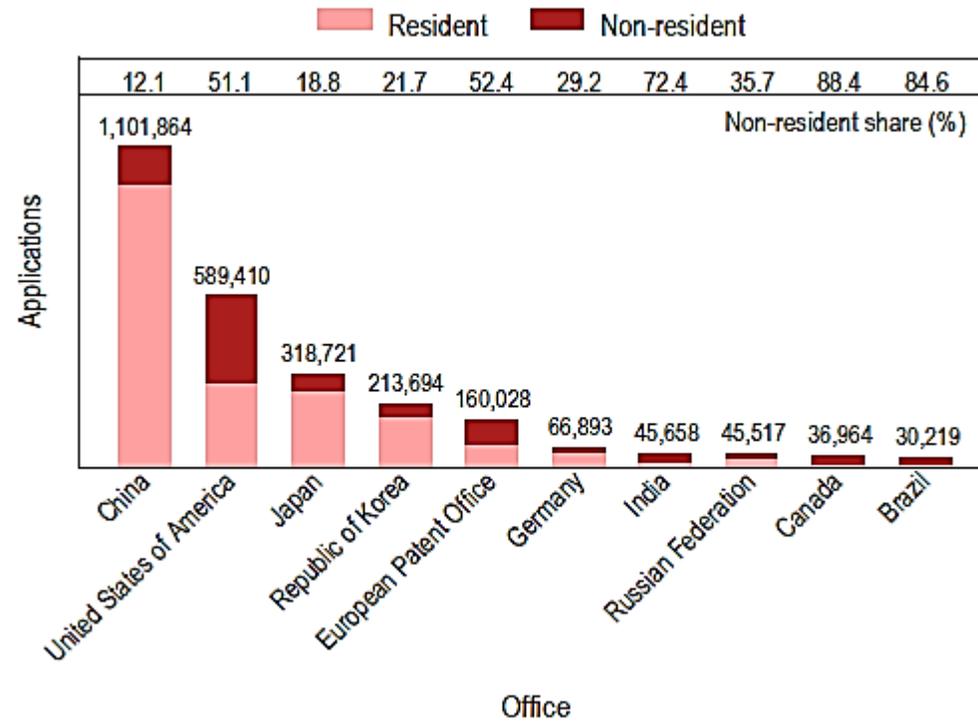
2015 China Business Climate Survey conducted by the American Chamber of Commerce in China, shows that 86 percent of respondents said that China's enforcement of intellectual property regulations had improved in the past five years and the European Chamber of Commerce in China stated that 56% of its respondents say that enforcement is inadequate but against 95% some years ago.

On peut ajouter que les litiges sont moins coûteux et plus rapidement jugés.

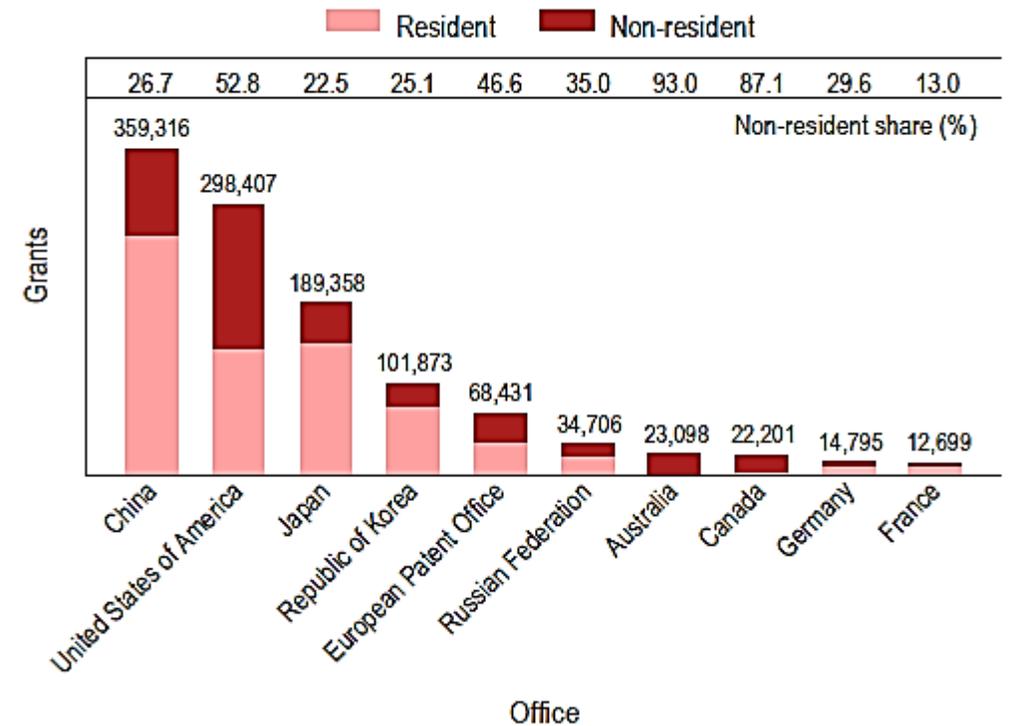
**Mais un développement qui
demeure « provincial »**

(a big IP country but not yet a strong one »

Une part très faible de déposants étrangers



Dépôts: les dépôts des étrangers ne représentent que 12% des dépôts



Accordés: la proportion de brevets des non résidents est plus forte: 26,7% (et supérieure à celle du Japon et de la Corée)

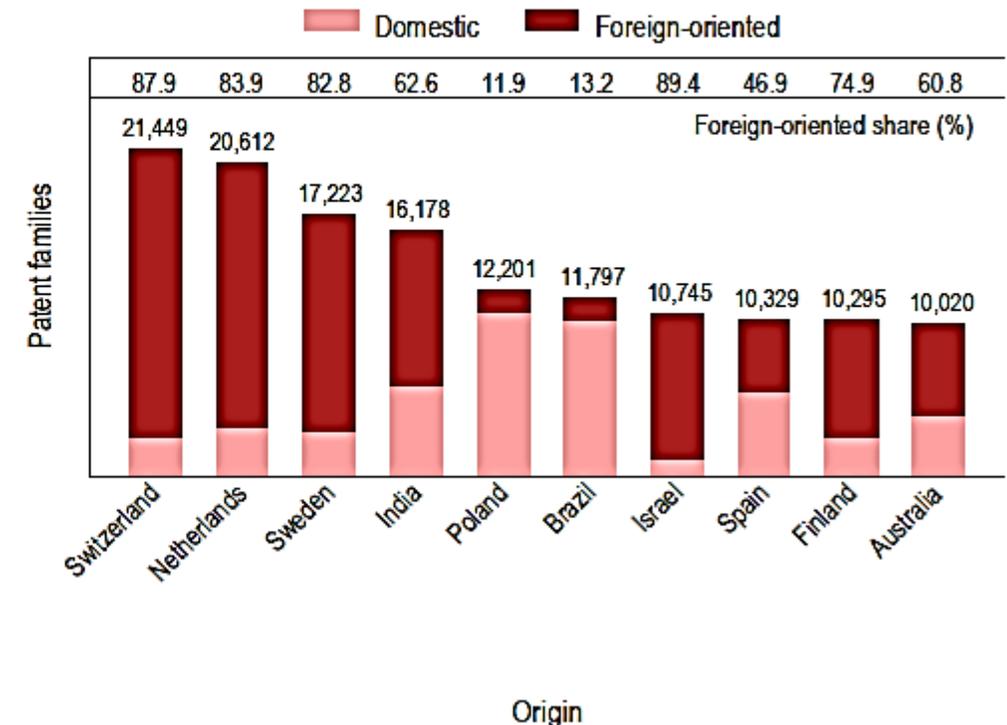
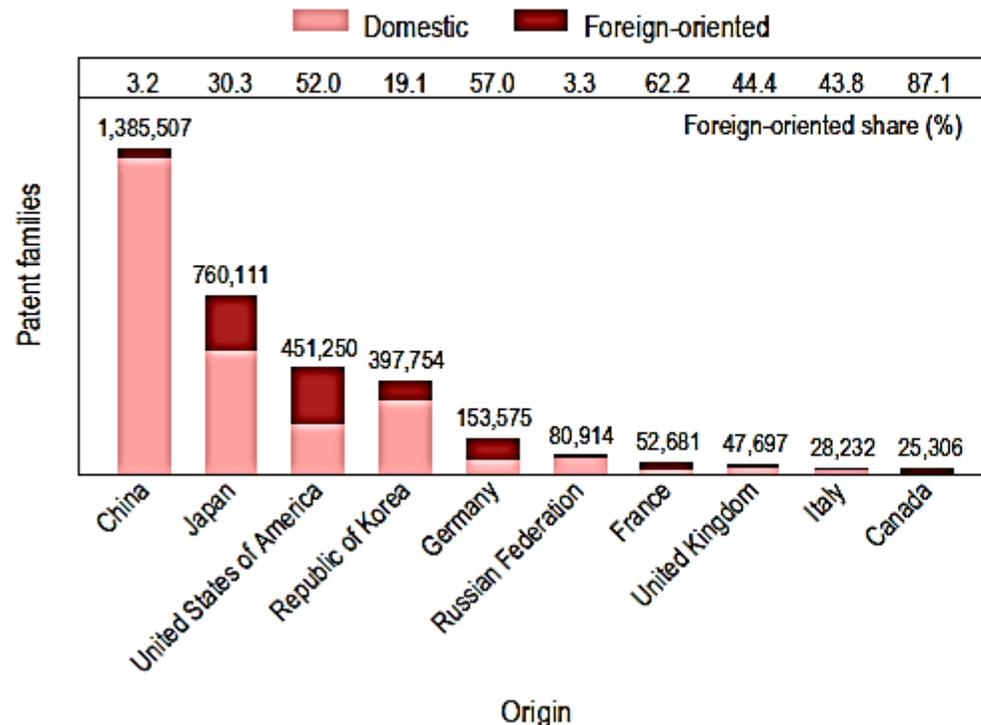
L'absence presque totale de dépôts à l'étranger

96,8% des brevets chinois ne sont déposés qu'en Chine.

Le chiffre de 3,2% de dépôts à l'étranger (42,154 soit à peine plus que la France) doit être comparé à 30% pour le Japon et 52% pour les U.S.A.

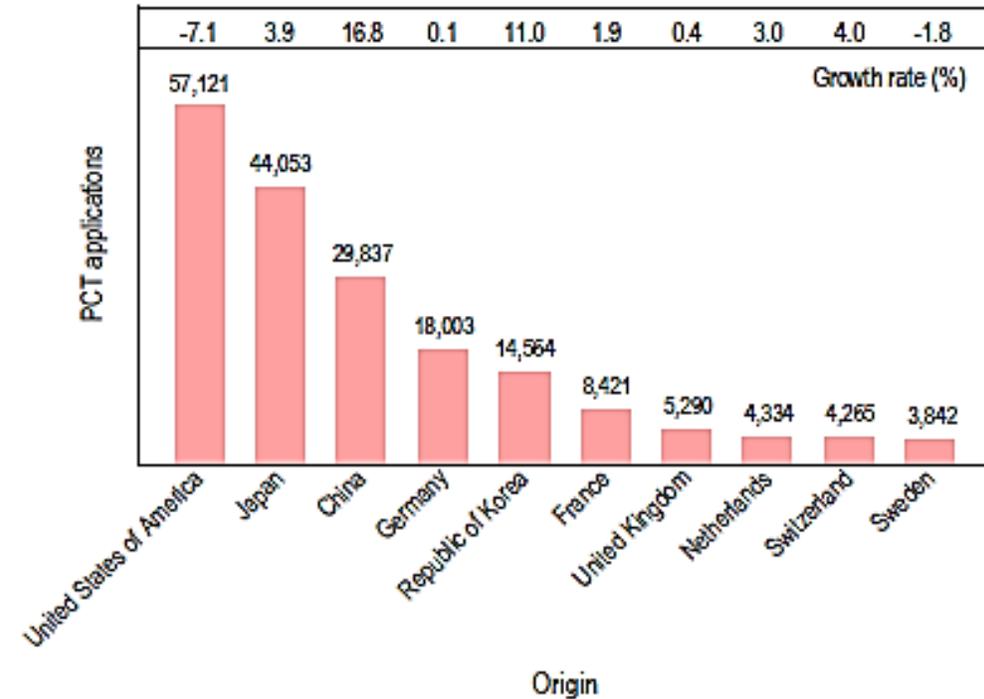
Toutefois les dépôts à l'étranger sont en forte augmentation: 15,300 in 2010 à environ 42,000 in 2015.

A24 Domestic and foreign-oriented patent families for the top origins, 2011-13



Les dépôts PCT sont encore très faibles par rapport à la taille de l'économie mais ils augmentent fortement (+ 17% en 2015)

A50 PCT applications for the top 20 origins, 2015



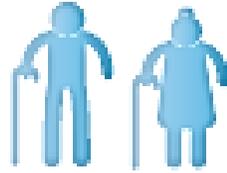
A19 Patent applications for the top 25 offices and origins, 2015

Origin	Office																								
	Australia	Brazil	Canada	China	China, Hong Kong SAR	European Patent Office	France	Germany	India	Indonesia	Israel	Japan	Malaysia	Mexico	New Zealand	Poland	Republic of Korea	Russian Federation	Singapore	South Africa	Turkey	Ukraine	United Kingdom	United States of America	Viet Nam
Australia	2,291	183	420	635	153	819	4	17	270	101	51	448	111	97	540	1	174	69	155	188	1	15	87	3,655	41
Austria	185	231	217	982	68	1,995	21	1,026	295	54	38	449	60	123	32	11	334	195	64	16	2	42	43	2,504	38
Belgium	301	308	302	638	88	2,039	96	37	263	72	74	460	56	125	60		229	141	89	10		41	201	2,376	42
Brazil	55	4,641	47	134	8	187	3	6	57	23	3	75	14	76	11	1	40	17	11	29	1	5	8	855	5
Canada	505	291	4,277	1,025	287	1,640	23	112	346	46	84	648	51	247	112	2	362	142	101	74	1	14	193	13,201	17
China	638	737	646	968,252	844	5,711	77	636	1,681	333	46	2,840	235	475	88	3	1,947	860	310	337	17	24	566	21,386	257
Denmark	236	238	280	845	96	1,926	3	13	313	73	51	389	67	157	61		170	138	65	17		46	70	2,290	31
Finland	180	195	284	1,041	141	2,002	8	67	230	99	17	353	32	75	20	2	273	168	64	81		21	110	3,219	39
France	829	1,709	1,743	4,701	313	10,779	14,306	259	1,293	314	316	3,369	215	676	128	2	1,984	1,060	318	119	5	111	174	12,327	117
Germany	1,339	2,500	2,237	13,851	830	24,833	442	47,384	2,901	444	423	6,430	490	1,265	285	29	4,087	1,954	539	652	34	304	468	30,016	212
India	177	147	168	235	30	577	1	23	12,579	80	38	235	78	107	71		139	67	83	149	2	20	37	7,976	34
Israel	352	193	374	700	138	1,098	3	44	333	22	1,285	516	17	128	39		271	148	132	82	3	31	107	7,882	14
Italy	352	695	550	1,430	182	3,988	63	142	584	110	125	765	79	285	87	7	469	470	100	121	4	69	48	4,839	67
Japan	1,733	2,143	1,873	40,078	1,347	21,418	169	6,425	4,857	2,548	201	258,839	1,420	1,031	212	3	15,283	1,525	1,674	239	77	72	578	86,359	1,341
Netherlands	481	1,259	532	3,032	146	7,092	48	165	1,466	311	101	2,208	159	475	126	1	824	1,006	151	55	1	43	243	5,113	125
Poland	35	27	43	81	9	574	4	27	42	4	11	62	8	19	8	4,676	30	50	10	18	4	34	11	507	3
Republic of Korea	657	432	349	12,907	139	6,410	50	1,423	1,664	432	35	5,222	247	354	40	2	167,275	551	187	151	40	20	64	38,205	527
Russian Federation	36	39	64	148	15	231	5	34	88	21	14	72	11	15	3	2	49	29,269	13	22		61	16	991	16
Singapore	98	41	69	714	65	393	2	171	113	57	17	490	87	59	13		156	37	1,469	8	1	4	92	1,833	25
Spain	146	234	226	342	72	1,522	108	27	200	39	56	243	26	215	48	3	146	100	44	106	2	27	51	1,671	
Sweden	473	641	453	1,948	150	3,836	77	527	882	143	73	990	139	227	95	4	659	433	100	193	6	40	192	5,159	54
Switzerland	1,087	1,368	1,342	3,432	909	7,096	244	887	1,422	410	396	2,551	341	904	342	14	1,365	920	487	481	8	235	337	5,118	189
Turkey	27	30	16	82	4	447		12	24	20	12	30	5	11	1	1	32	10	3	11	5,352	19	12	320	1
United Kingdom	1,155	730	1,182	2,221	471	5,037	56	242	1,116	242	188	1,715	245	380	269	6	922	456	310	454	4	103	14,867	13,296	41
United States of America	13,781	10,268	17,966	37,216	4,591	42,677	261	6,148	11,369	1,740	2,854	26,501	1,940	8,704	2,352	39	14,655	4,957	3,817	2,609	232	687	2,585	288,335	961
Others/Unknown	1,456	939	1,304	5,194	1,116	5,701	226	1,039	1,270	1,415	399	2,821	1,594	1,841	1,458	6	1,819	774	518	1,275	44	2,409	1,641	29,977	836
Total	28,605	30,219	36,964	1,101,864	12,212	160,028	16,300	66,893	45,658	9,153	6,908	318,721	7,727	18,071	6,501	4,815	213,694	45,517	10,814	7,497	5,841	4,497	22,801	589,410	5,033

Scénario pour le futur

China faces an innovation imperative

Two traditional sources of growth are fading...



The labor force is no longer growing

Aging is expected to reduce the working-age population by **16%** by 2050



Return on fixed asset investment is declining

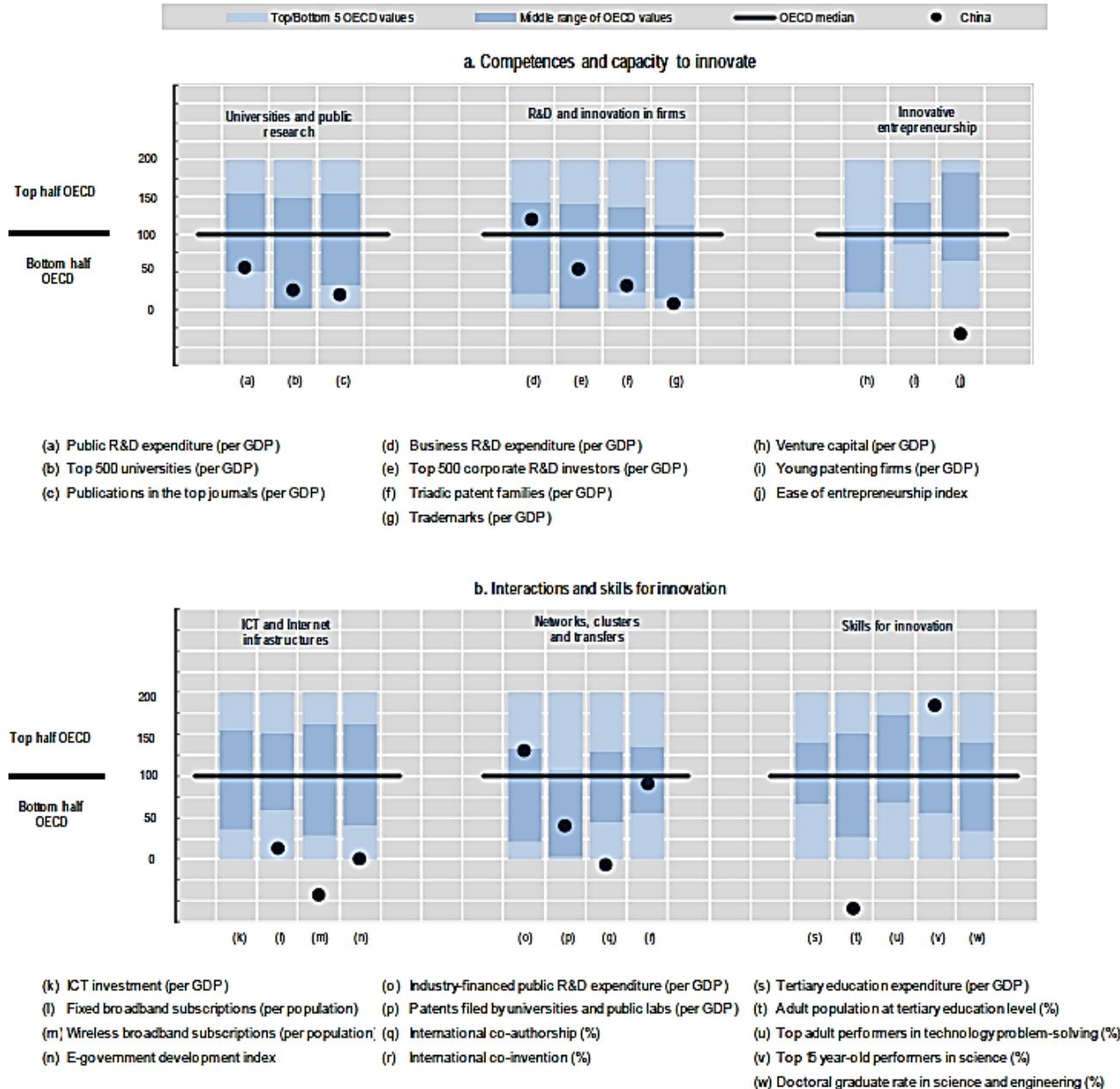
It takes **60% more capital** to generate a unit of GDP than it did from 1990 to 2010

“Like the United States, Japan, and the mature economies of Europe, China must now rely increasingly on rising productivity to drive GDP growth”

(Mac Kinsey, China effect on global innovation, 2015)

Figure 24. Science and Innovation in China

Comparative performance of national science and innovation systems, 2016



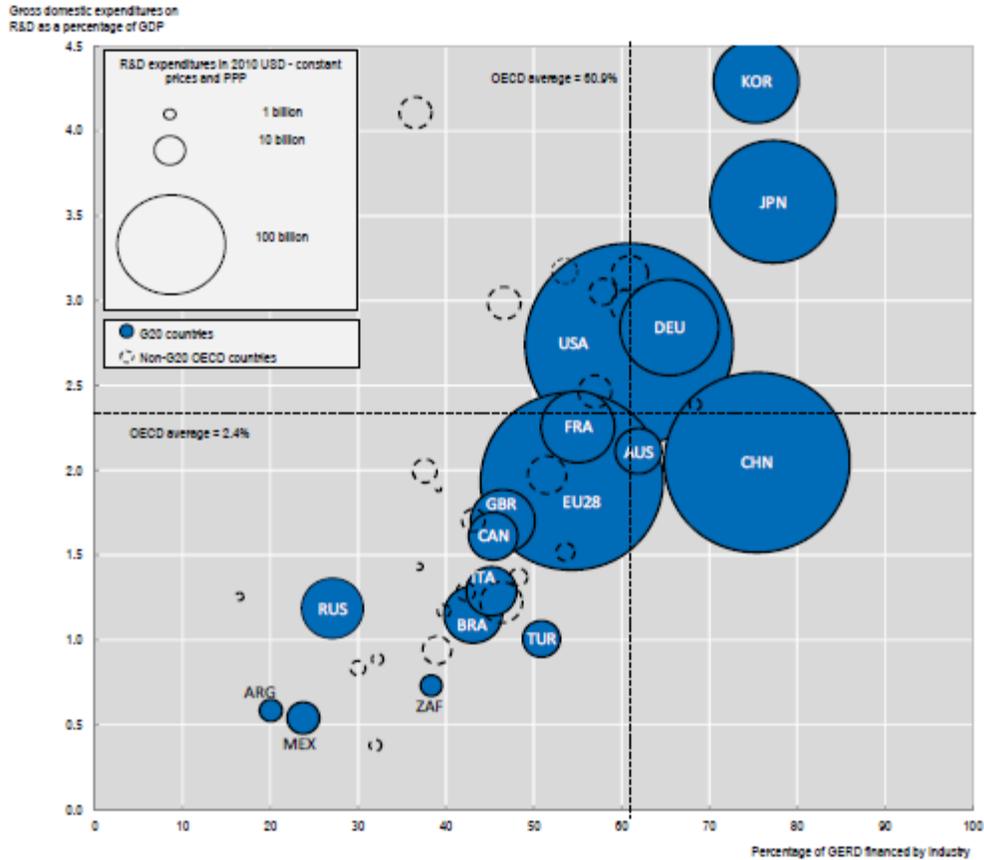
Les marges de progression sont considérables dans tous les domaines de la production de l'innovation

(G20 innovation report, 2016)

**Les conditions pour devenir un/le leader
mondial de la production d'inventions
sont réunies**

Une forte augmentation des investissements dans la recherche

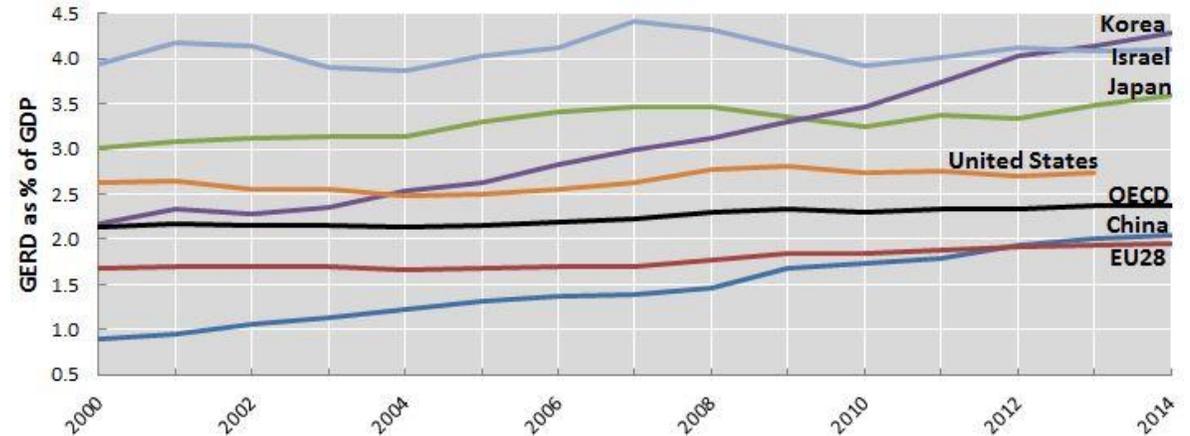
Figure 1. R&D in selected G20 economies, 2013



Oecd *Main Science and Technology Indicators* database, January 2016, cited in G20 innovation report 2016

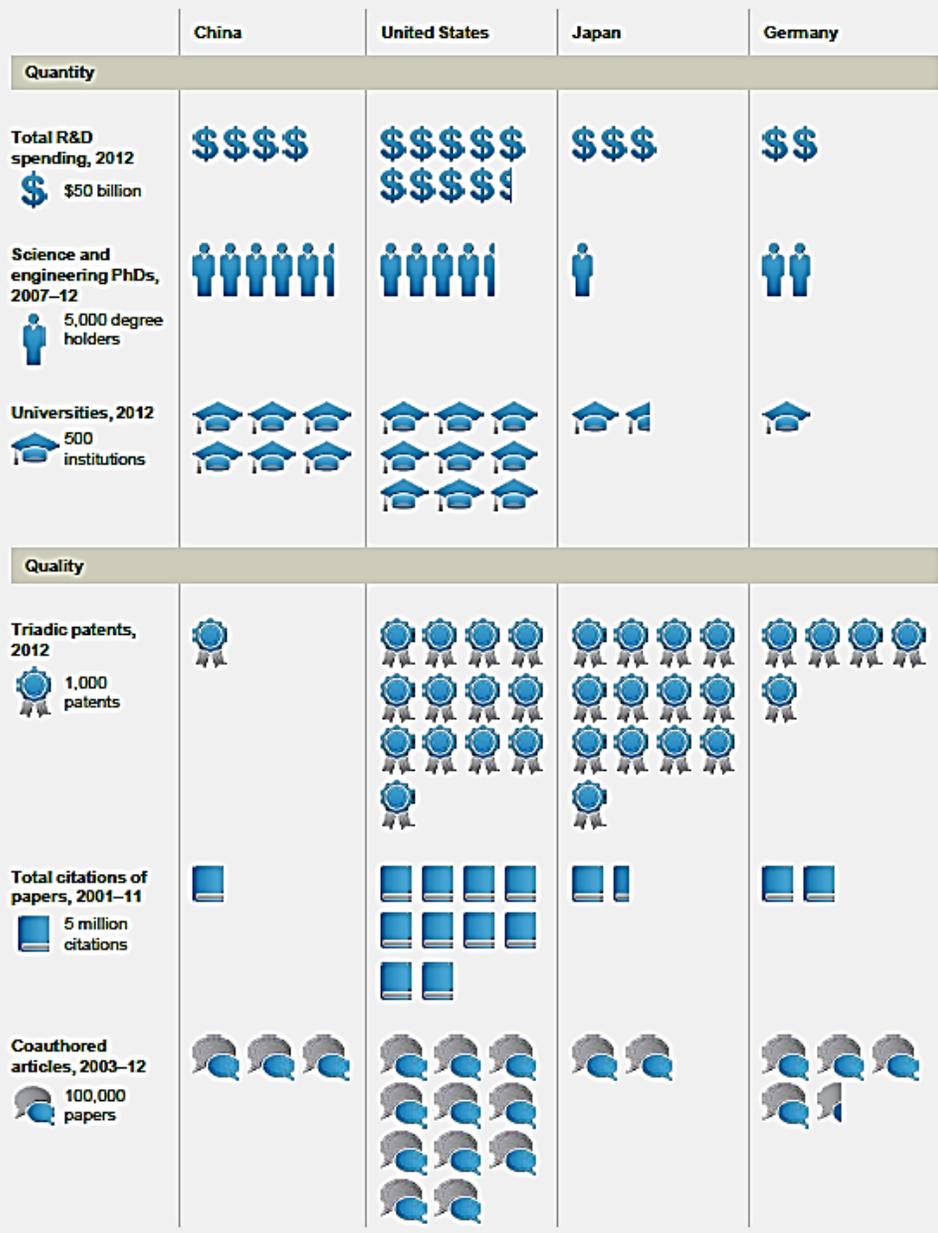
The 13th Five-Year Plan, launched in March 2016, and the 13th Five-Year Plan on Scientific and Technological Innovation, released in August 2016, established a set of targets and policies for S&T development for 2016-20. Public budgets are forecast to increase in the coming years, but at a slower pace than in previous years.

R&D intensity: Gross Domestic Expenditure on R&D as a percentage of GDP, 2000-2014



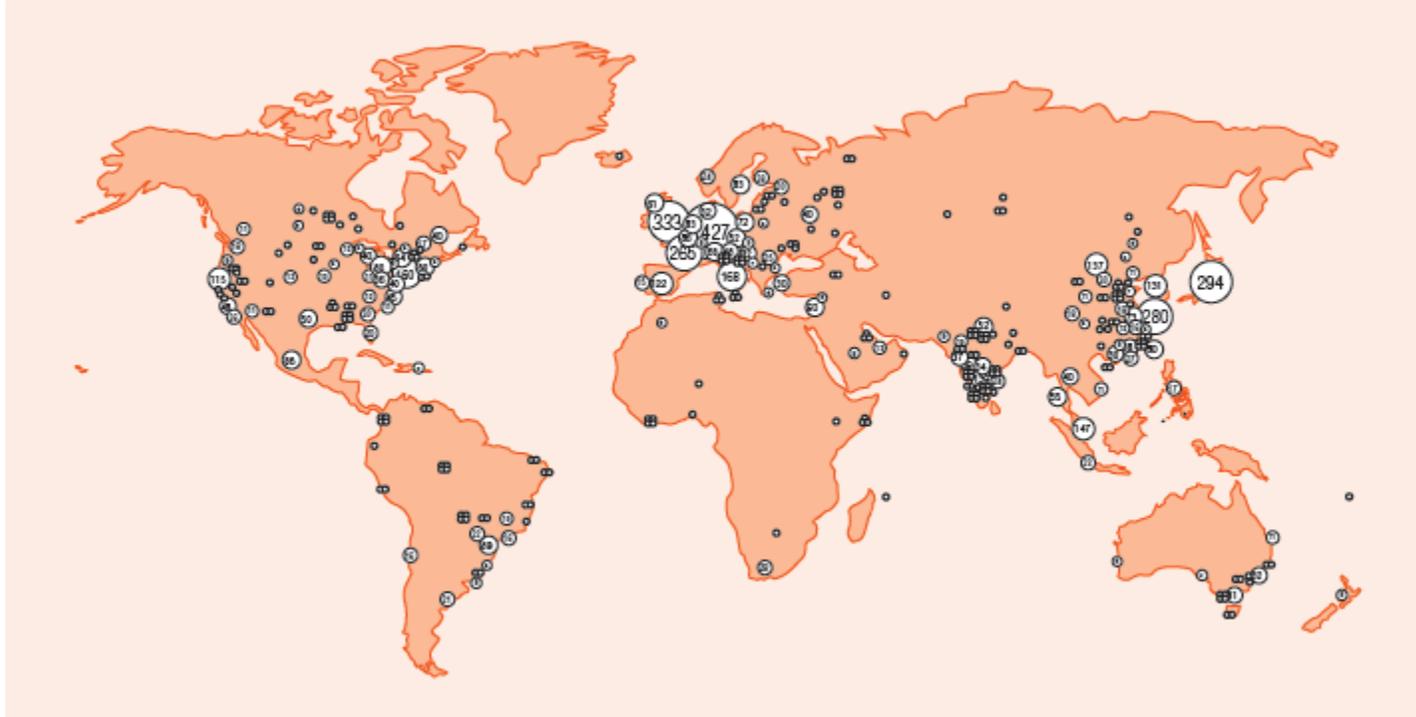
Oecd *Main Science and Technology Indicators*

China has invested heavily in science-based innovation but has not yet seen commensurate results



“China has already become a global innovation leader. Each year it spends more than \$200 billion on research (second only to the United States) and turns out close to 30,000 PhDs in science and engineering”

Figure 1: Global map of cross-border R&D centres

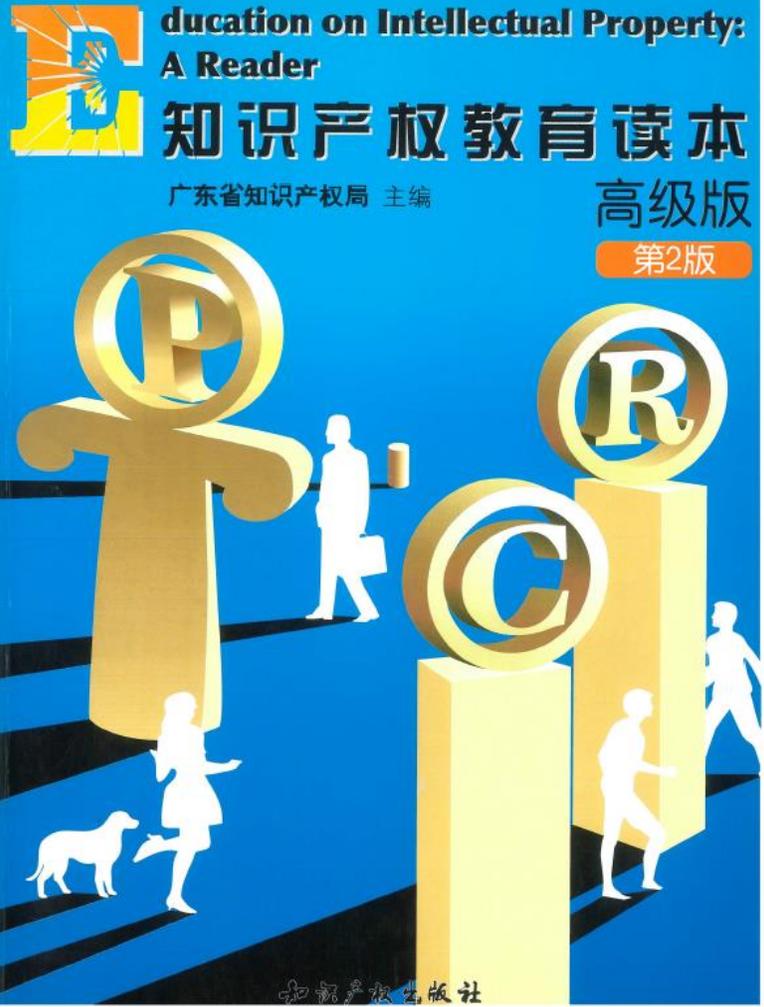


Source: R&D Locations database, accessed 5 March 2016; see <http://www.glorad.org> and von Zedtwitz and Gassmann, 2002.
Note: The figure shows a total of 5,877 cross-border R&D centres.

**Le nombre de
laboratoires d'excellence
et de clusters de
recherche augmente**

Source: Global Innovation Index

Une culture « populaire » unique de la PI...



From an imitation economy to an invention economy

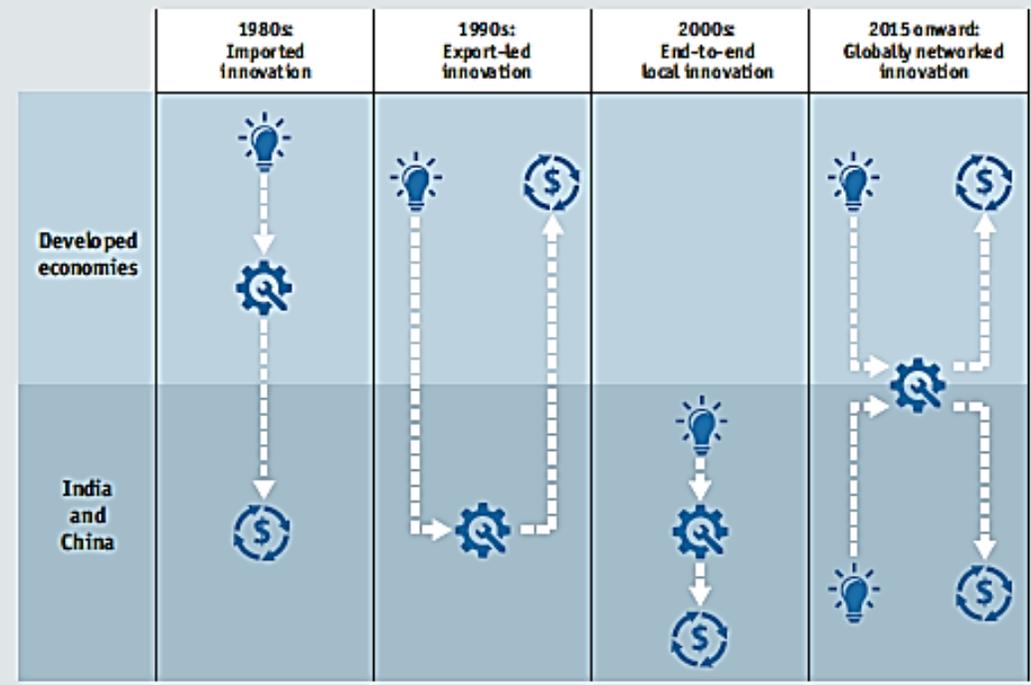
China Xiaolan Fu (2015) *China's Path to Innovation*
Cambridge University Press.

New trajectories of global innovation

The figure below depicts the evolution of frugal innovation in a global, historical context and from the perspective of India and China. In the 1980s, little R&D was done in India and China, which had to import expensive products originally designed for affluent customers in advanced economies. The 1990s gave birth to outsourcing and offshoring, with Western MNCs leveraging low-cost Indian software talent and Chinese tech hardware expertise to develop innovative solutions but mainly for use in developed markets. In the 2000s, as Asia-

Pacific emerged as the global economic engine, Western MNCs began expanding their R&D presence in India and China where, inspired by local low-cost rivals, they started to develop frugal solutions to serve the unique needs of the 2.5bn Indian and Chinese consumers. The next phase of global innovation, which Western as well as Indian and Chinese multinationals are just embarking upon, will consist of networking ideas, know-how and talent across regions to co-create frugal solutions for cost-conscious customers worldwide.

 Inspired by
  Developed in
  Commercialised in



Source: Radjou, N. (2014), *Frugal innovation: A pioneering strategy from the South*.

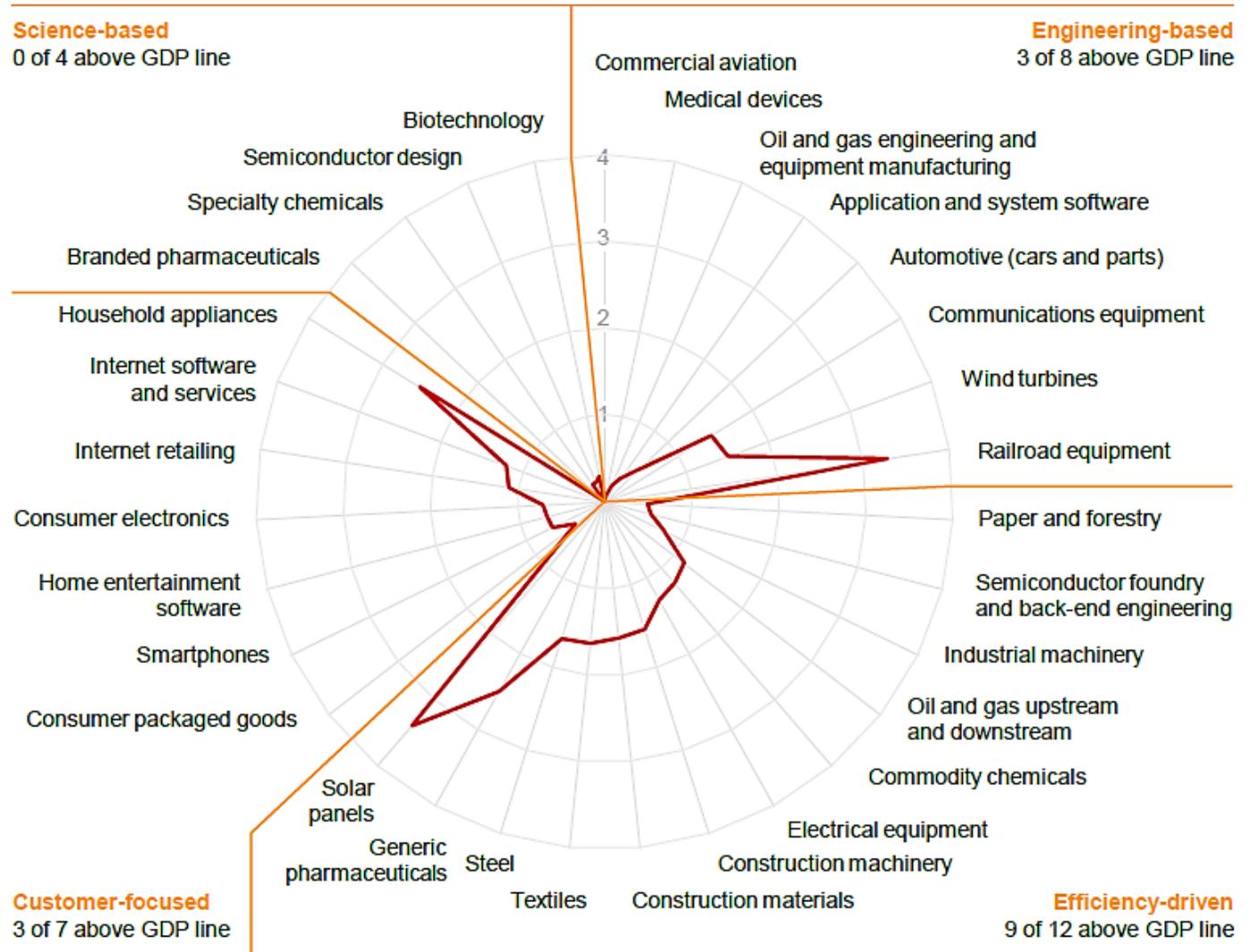
“China has established strength in efficiency-driven and customer-focused innovation, but lags in science- and engineering-based innovation”

Mac Kinsey

To address these challenges and to seize the opportunity of the “next production revolution”, China launched “Made in China 2025” in 2015, as part of a 30-year strategy to strengthen China as a manufacturing country.

Key sectors were targeted for support, including ICT, robotics, agriculture, aerospace, marine, railway equipment, clean energy, new materials, biological medicine and medical devices. In parallel, the “Internet Plus” initiative was launched in 2015.

Revenue fair share of Chinese companies, 2013¹
Index: 1 = GDP share





Mac Kinsey global institute THE CHINA EFFECT ON GLOBAL INNOVATION, 2015

Our conclusion is that China has the potential to build on its strengths in innovation and become a global leader—creating a “China effect” on innovation around the world.

China has some unique strengths in innovation, including the largest base of consumers of any country, which enables rapid commercialization of new ideas. It also has the world’s most extensive manufacturing ecosystem, enabling continuous innovations in production processes that reduce costs and improve quality. And, thanks to investments over the past three decades, China has created capacity for research with a growing number of universities and research institutions, as well as an expanding pool of talent.

The Chinese model of rapid, low-cost innovation can be applied around the world, potentially disrupting a range of industries

Le monde de la PI demain: de la domination US à la domination chinoise?

Ce qui peut se produire:

La moitié des inventions dans le monde seront chinoises

Les flux de diffusion des inventions s'inverseront (« *western world will become china dependant* »)

Les brevets chinois deviendront une référence comme les décisions des tribunaux chinois



It seems increasingly clear that we have entered an era of unprecedented change in the global patent market, which will likely take many years to play out. The United States may remain at its centre, but its dominance appears to be coming to an end. A new world patent order is emerging.

China was regarded as “a joke” as recently as 2010; but the last five years have seen a sea change in the government’s approach, as Beijing has started to advocate robust patent protection as the best way to promote home-grown innovation. “

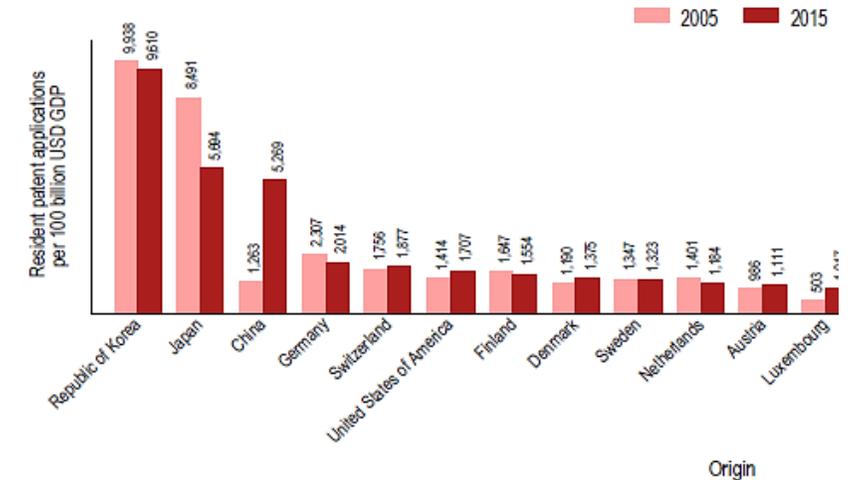
Le « raz de marée » quantitatif est inévitable

In December 2015, China's State Council published an opinion on the acceleration of the development of an IPR system by 2020.

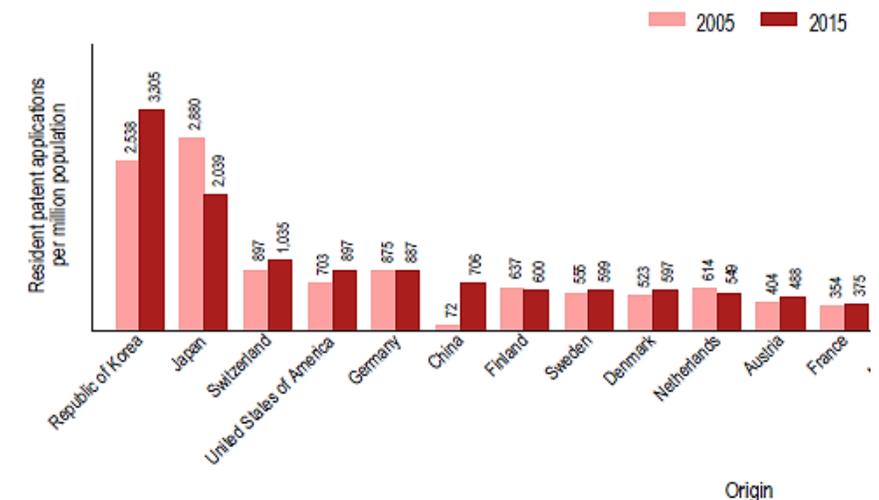
L'objectif officiel est de 14 brevets/10 000 habitants pour 2020 (Californie: 11,4/10 000). On doit donc s'attendre à:

- **La poursuite de la croissance des dépôts des résidents: 1,5 million**
- **Une forte croissance des dépôts des non résidents à hauteur d'environ 40% des brevets déposés soit 600 000 brevets**
- **Un « rattrapage » de l'internationalisation des brevets chinois qui pourrait atteindre 50% pour les dépôts à l'étranger (score US ou Europe) et une forte augmentation des dépôts PCT (90 000)**

A38 Resident patent applications per 100 billion USD GDP for the



A39 Resident patent applications per million population for the top 15



L'accent est mis désormais sur les accélérateurs d'innovation, sur l'ouverture et l'internationalisation

- La “commercialisation” de la recherche universitaire devient une priorité:

« Under the Law on the Promotion and Transformation of Scientific and Technological Achievements (revised in 2015), the government encourages R&D institutions and higher education institutions to transfer S&T achievements to enterprises or other organisations by assignment, license, investment as a trade-in, and other means”

- La collaboration avec les autres pays et l'open innovation se développent.

“According to the Battelle/R&D Magazine Global Researcher Survey, about a third of China’s advanced R&D is pursued in collaboration with U.S. research organizations, and about a quarter in collaboration with European research organizations”.

- Les marchés de brevets et de technologies se multiplient: *At the state level: NAST (National Achievements of Science and Technology; www.nast.org.cn), CTEX (China Technology Exchange; www.ctex.cn), CATTTC (China-ASEAN Technology Transfer Center; www.catttc.org.cn), NTTAC (the National Technology Transfer of Chinese Academy of Sciences; www.ntt.ac.cn), SJTUNTTTC (National Technology Transfer Center, Shanghai JiaoTong University; www.sjtunttc.com); At the province level: NTEM (Northern Technology Exchange Market; www.ntem.com.cn), STEE (Shanghai Technology Transfer & Exchange; www.stte.sh.cn) and private initiative: TIPEI (Tianjing Binhai Intellectual Property Exchange International; www.tipei.net), Ruichuan IPR funds*

**Mais la transition s'accompagne d'une
montée des incertitudes...**

Key takeaways from the Business Confidence Survey 2016

China's economic slowdown continues to pose a serious challenge to both Chinese and European companies



EU
Chamber of
commerce

(same
conclusions
with
AmCham)

1. Economic headwinds combined with market access constraints pose increasingly serious problems for European business
2. The disconnect between reform commitments and actions taken is both pronounced and highly concerning
3. A failure to implement reforms has led European business to conclude that the worst effects of the economic slowdown are yet to come
4. The stalled reform agenda has contributed towards decisions to cut costs and reduce R&D spending; these decisions have also been influenced by pollution and slow and restricted Internet
5. An EU-China Comprehensive Agreement on Investment that will provide European companies with the assurances they need to expand their investments is now required

EUROPEAN BUSINESS IS AFFECTED BY DETERIORATING FUNDAMENTALS



OPTIMISM IS WANING...



EUROPEAN BUSINESS CONTINUES TO RECEIVE UNEQUAL TREATMENT...



... AND AS A RESULT, EUROPEAN COMPANIES FEEL LESS WELCOME IN CHINA

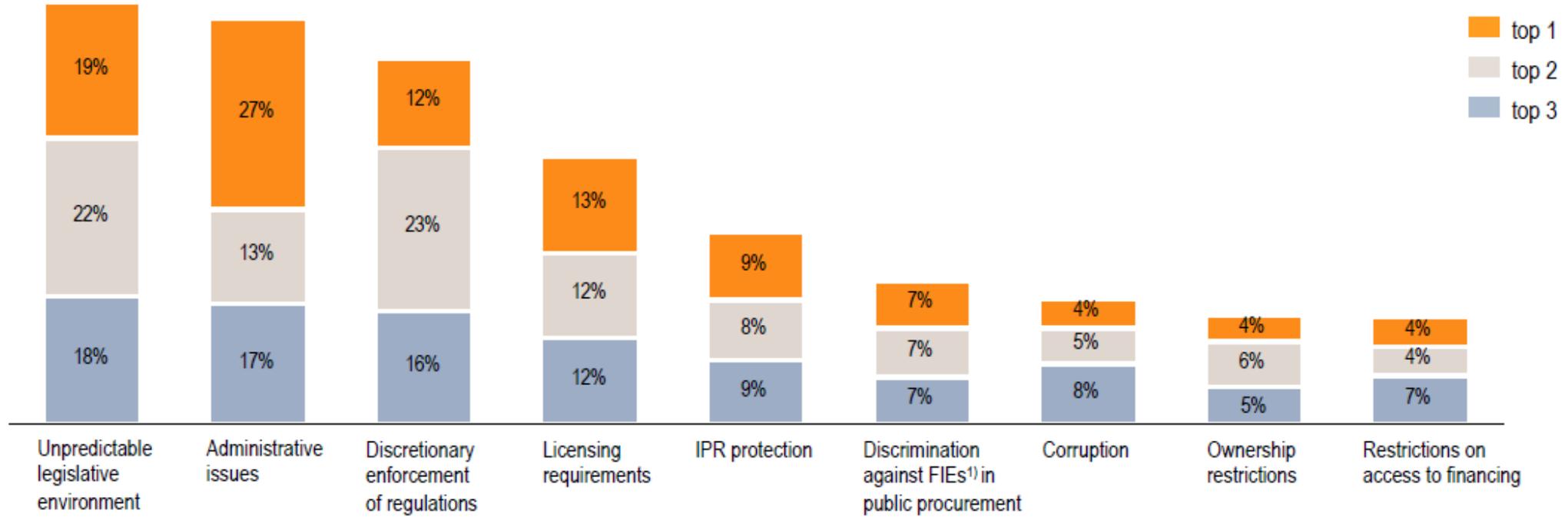


Les signes d'inquiétude se multiplient

EU Chamber of Commerce in China, Press Conference
Beijing, 7th June, 2016

Une remontée des inquiétudes sur le protection de la PI

What are the most significant regulatory obstacles for your company when doing business in Mainland China?

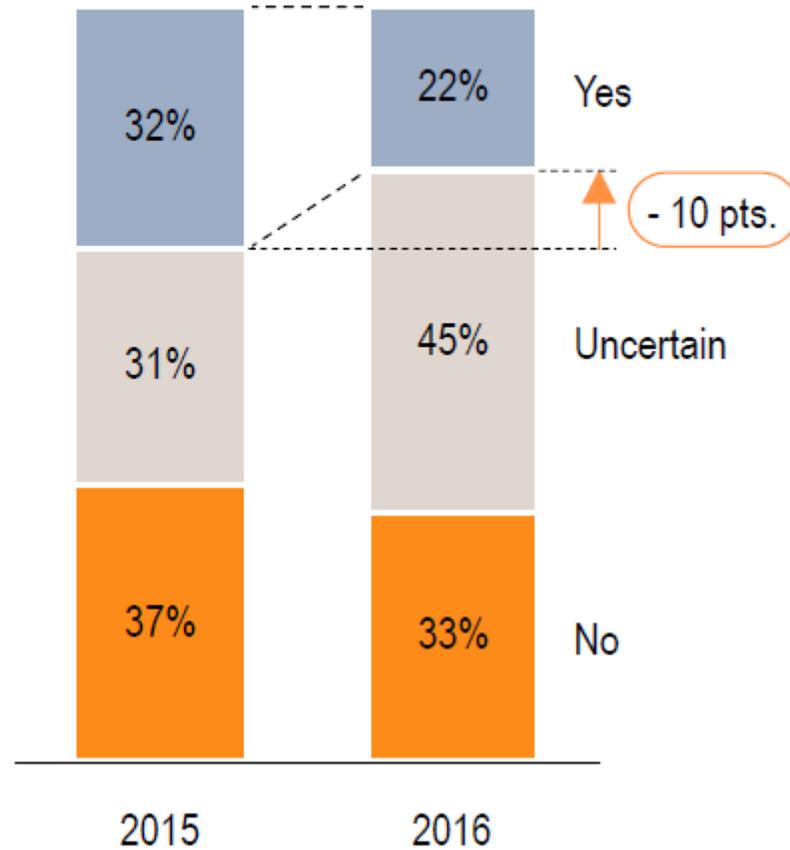


2015 Rank #	1	2	3	4	7	6	5	8	9
%	19%	27%	12%	13%	9%	7%	4%	4%	4%

2014 Rank #	1	3	2	4	7	6	5	8	9
%	18%	13%	23%	12%	8%	7%	5%	6%	4%

¹⁾ FIEs: foreign invested enterprises

Has the reform agenda of the 3rd Plenum over the past three years helped to create an even playing field for foreign investors in China?



EU Chamber of Commerce in China, Press Conference
Beijing, 7th June, 2016