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FINANCIADORA DE ESTUDOS E PROJETOS
MINISTÉRIO DA CIÊNCIA E TECNOLOGIA
Agência Brasileira de Inovação

Ministério da
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UM PAÍS DE TODOS
GOVERNO FEDERAL

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The Brazilian Innovation Agency

Incentives to support innovation in the private sector: the Brazilian experience

Odilon Antônio Marcuzzo do Canto

President

IADB - Washington, 16-17 April 2007

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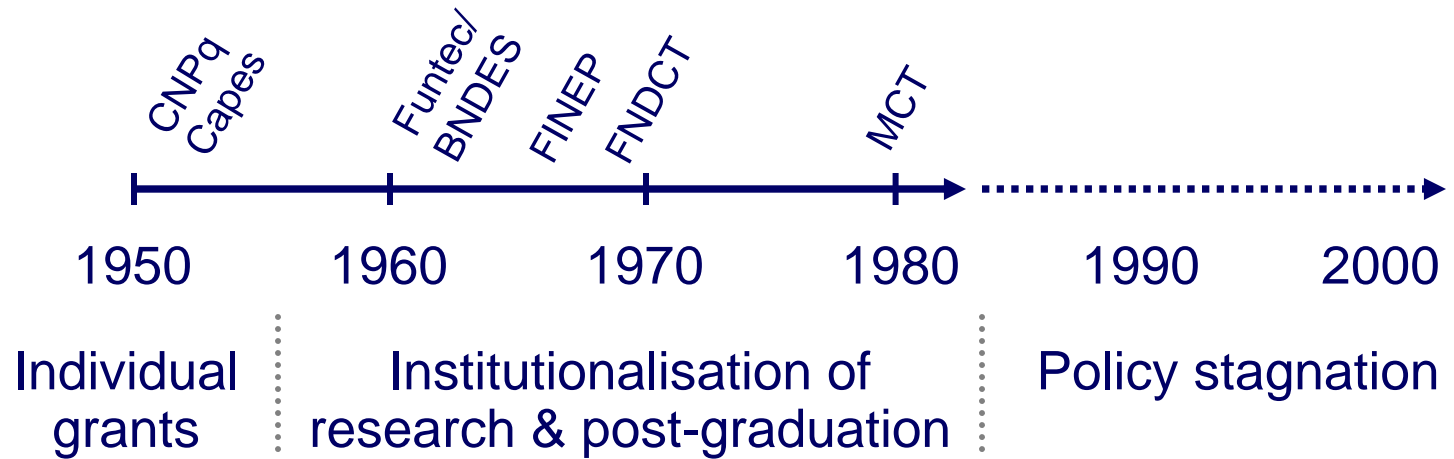


Evolution of the Brazilian Industrial Policy

Industrial Policy



S&T Policy



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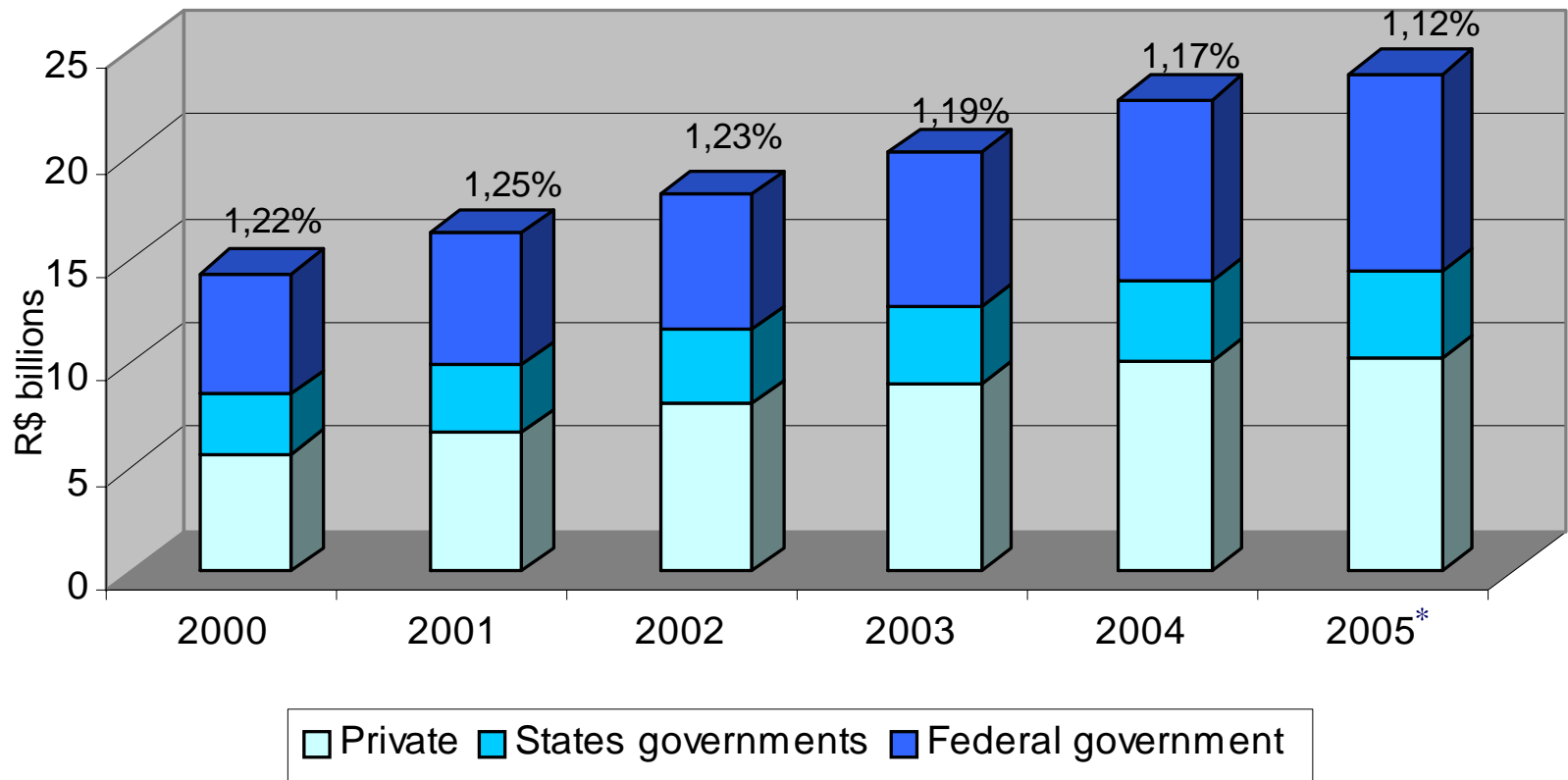
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Brazilian investment in S&T and percentage of GDP



Source: MCT
* Estimated

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Global framework

- Total of **public** HEI: 207 (83 federal, 65 state and 59 locals)
- Total of private or community HEI: 1,650
- Graduation courses: 16,000
- Master courses: 1,833
- Doctorate courses: 986
- Research institutions: 335
- Researchers: 77,600 (48,000 Ph.D.)
- Research teams: 19,500
- Qualified HR:
 - 65% within universities
 - 30,9% within industry

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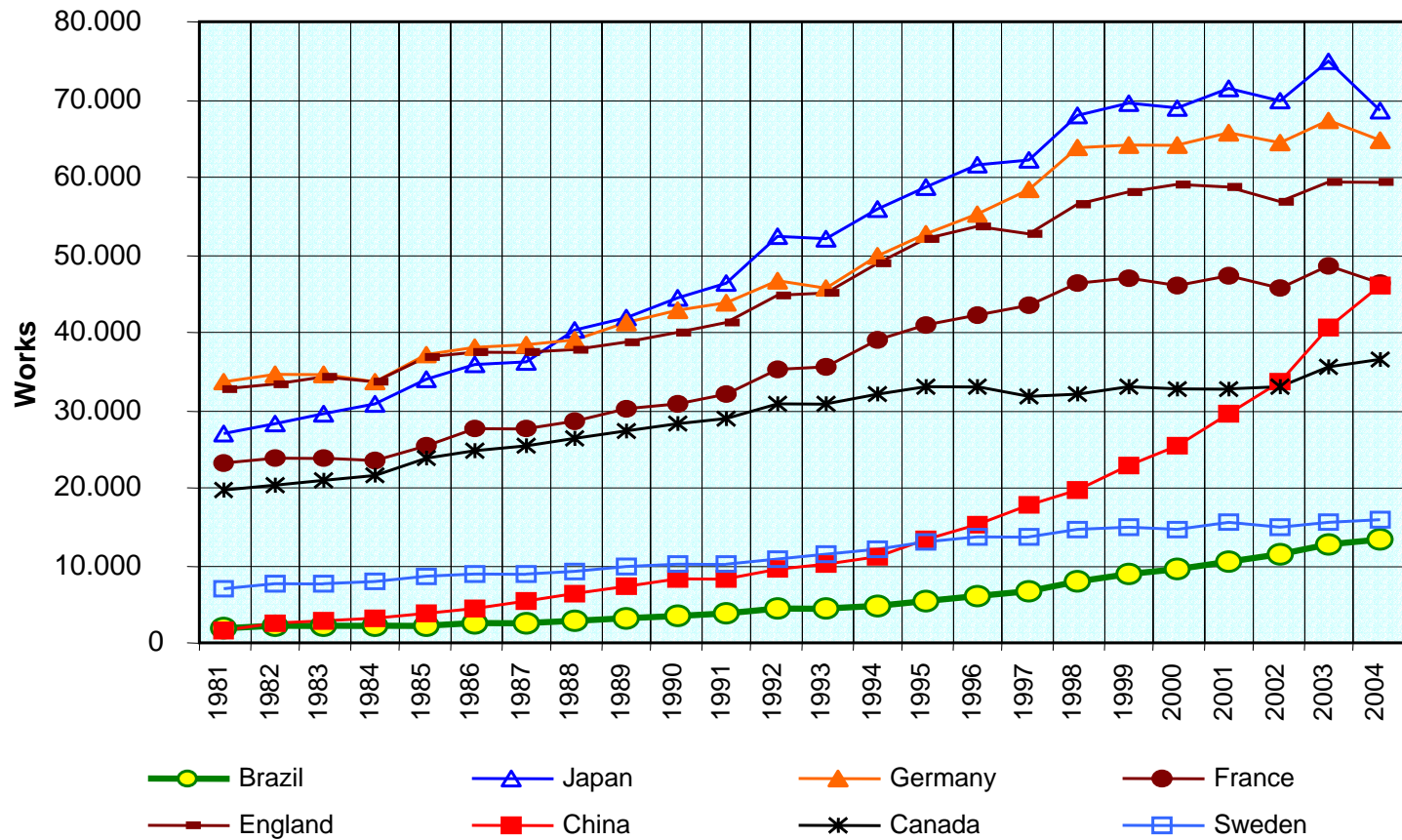


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Published works (source: Science Indicators-ISI): Brazil X More productive countries (except USA), 1981-2004



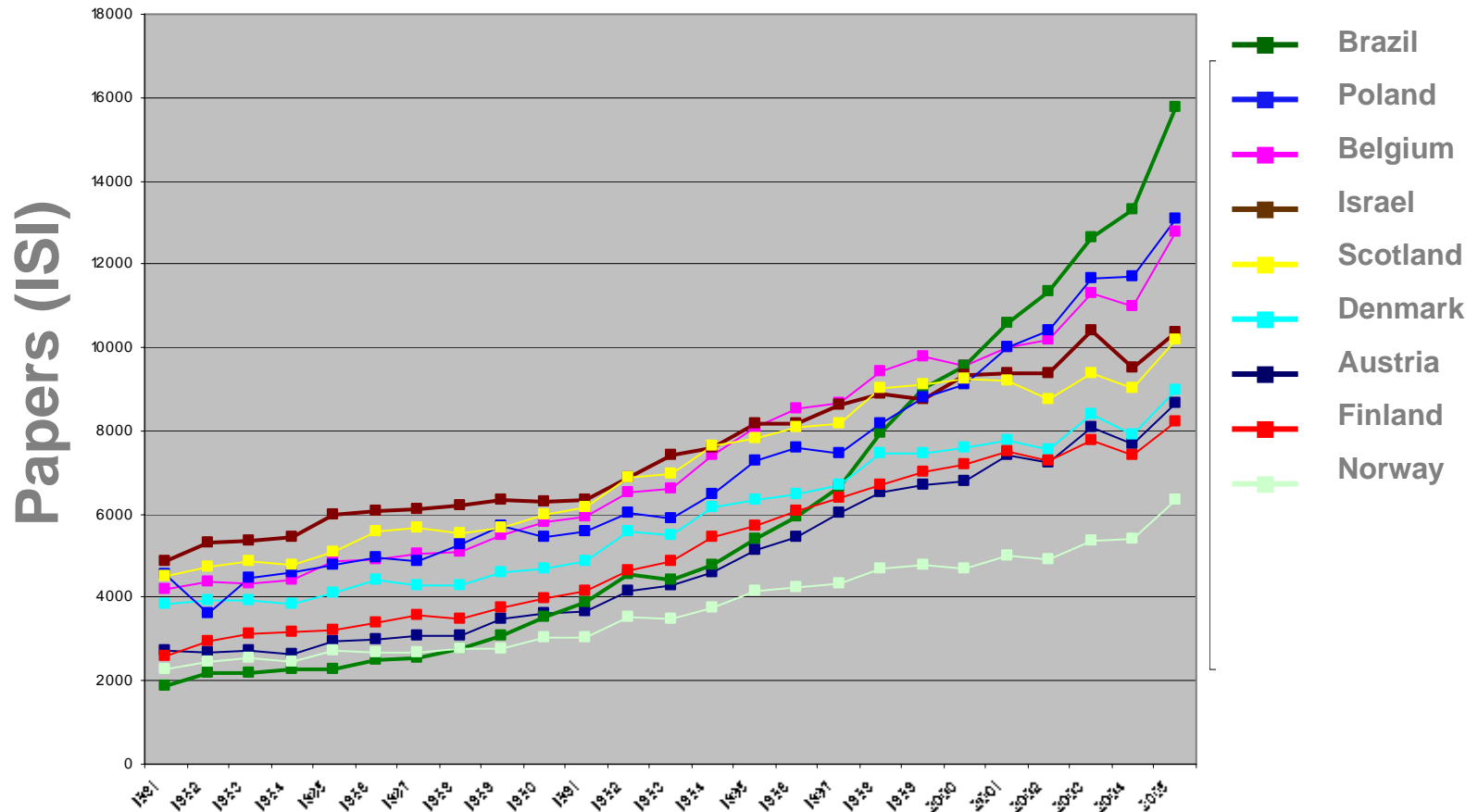
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Scientific Production: Brazil vs Selected Countries



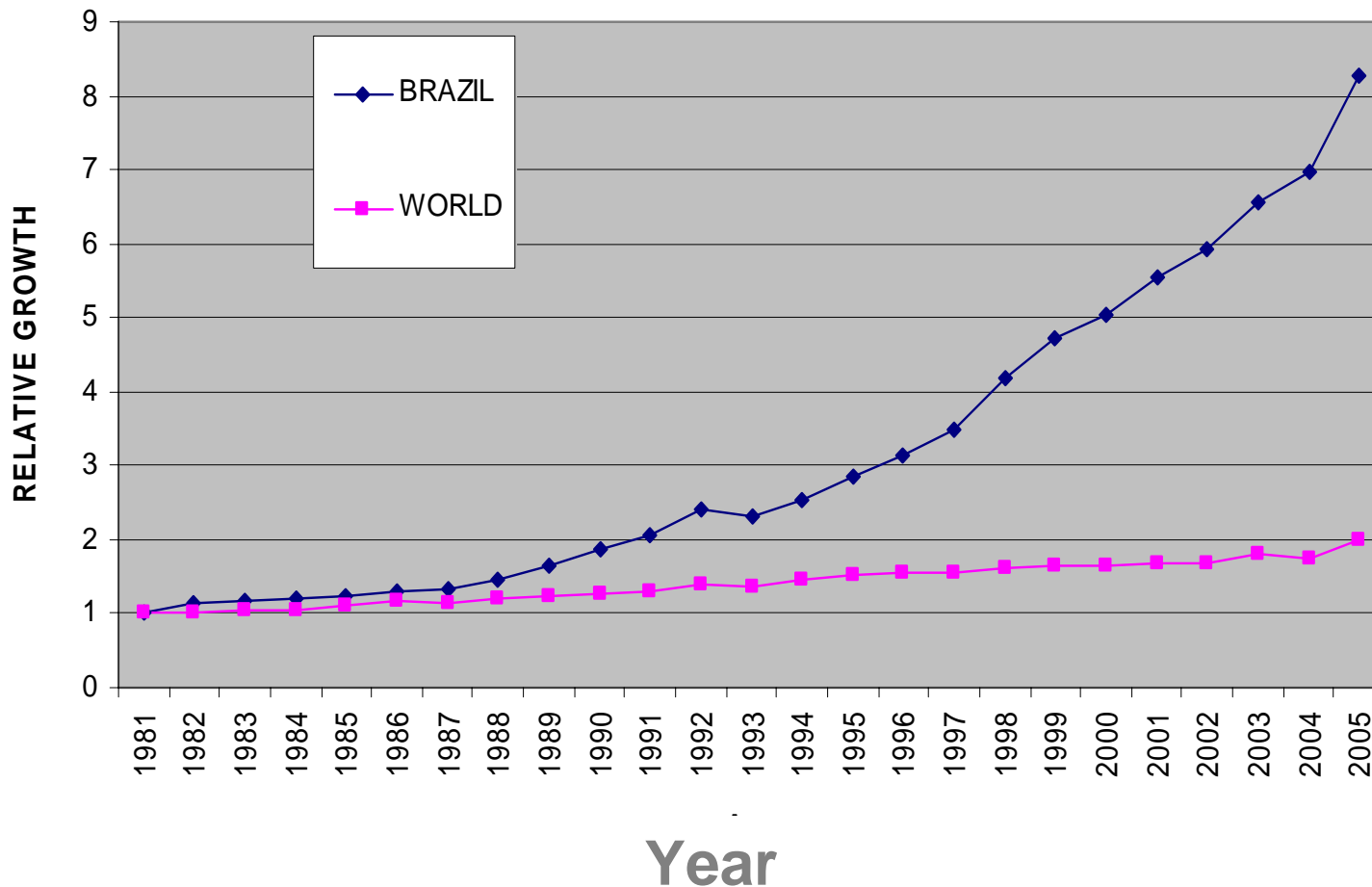
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Relative Growth in Scientific Production: Brazil vs World, 1981 – 2005



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Brazilian industrial firms innovation

- **Brazilian Technological Innovation Survey***
(PINTEC/IBGE, 2002 & 2005)
 - 2003 Survey: 84.300 firms (10 or more employees)
 - Increasing the firms innovation rate from 2000 (31.5%) to 2003 (33.3%)
 - Decreasing of internal R&D activities as percentage of the revenue: 0,64% (2000) to 0,53% (2003)
 - Low innovation rate compared to other countries

* Methodology based on EUROSTAT – *Community Innovation Survey* (CIS III) 1998 - 2000

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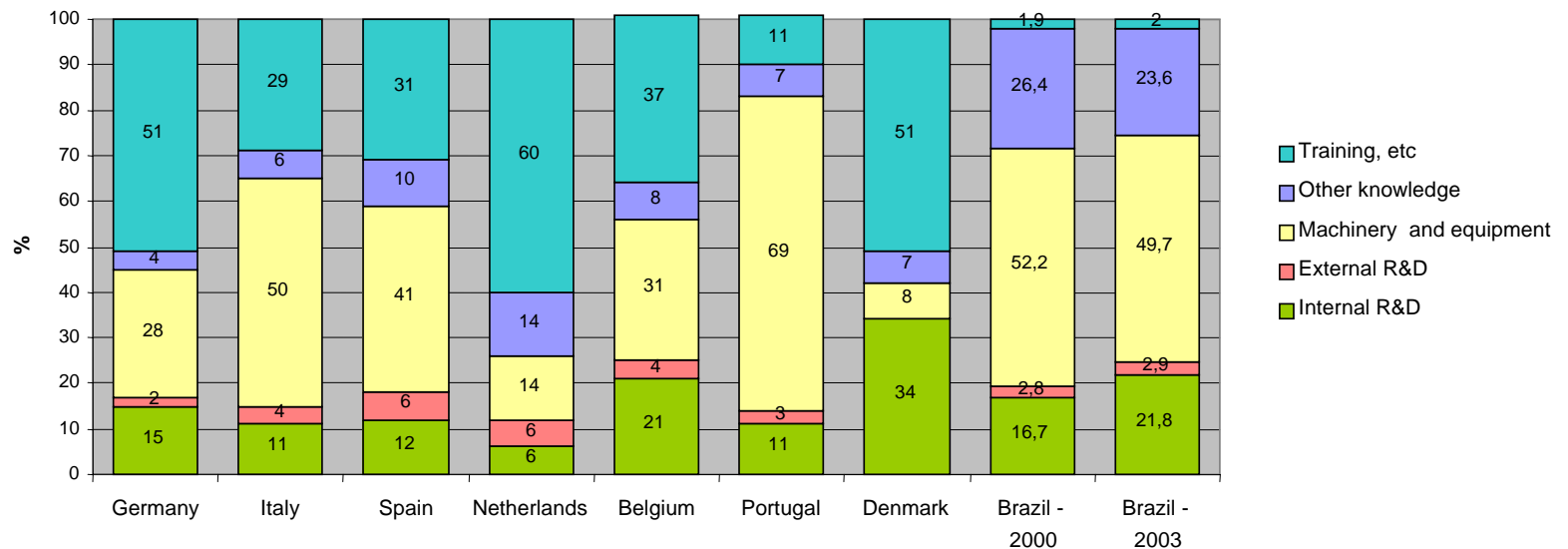


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Expenses in innovative activities by selected countries - 2000

- The innovative pattern of the Brazilian industry differs from most of the developed countries: there is a high concentration in machinery and equipment acquisition



Source: Applied Economics Research Institute, 2005 (IPEA) and Brazilian Technological Innovation Research (PINTEC/IBGE)

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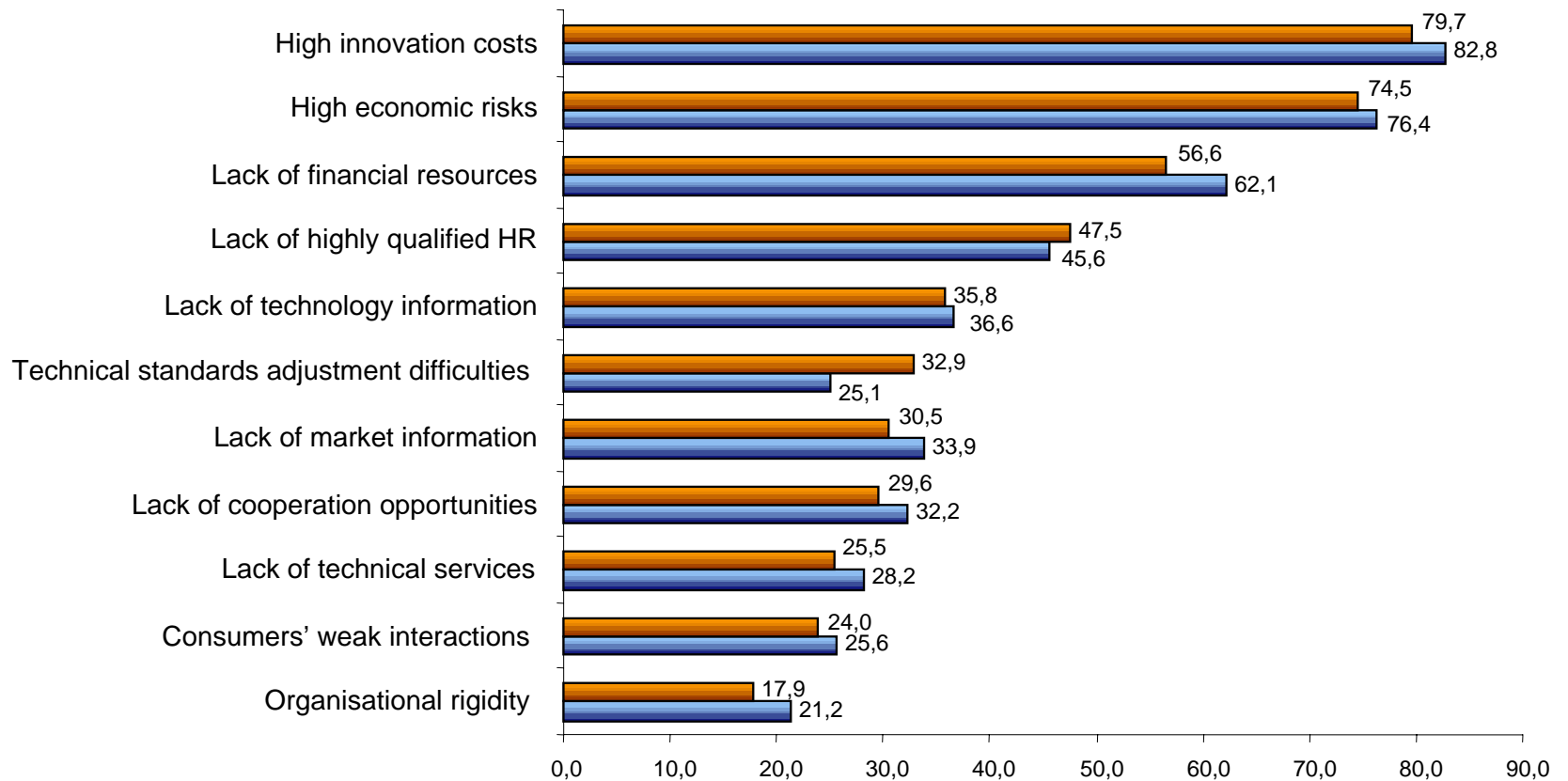
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Brazilian firms innovation activities: main constraints



Source: IBGE (www.ibge.gov.br) 3ª CNCTI

■ 1998-2000 ■ 2001-2003

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Recent Brazilian ST&I System achievements

- **Innovation became a government policy priority**
- **Sectoral Funds (since 1999):** innovative economic engineering to complement, expand and secure the financial sources for ST&I
- **Industrial, Technological, Foreign Trade Policy (2004)** – re-insertion of these issues within the Governmental Policy Agenda and a pioneering convergence of industrial and technological policies
- **New regulatory and legal environment (2005):** Innovation, Informatics and Bio-security Laws; grants for R&D HR in companies; regulation of FNDCT; and MSEs Law
- **Decentralisation** of federal governmental ST&I policies and their Integration to the state and local levels
- Emphasis on **regional development** and **social inclusion**

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Sectoral Funds for Supporting Scientific and Technological Development

- Creation: from 1999 onwards
- Financial sources: financially fed from selected productive sectors through the contributions of companies' invoicing and/or from the earnings arising from the exploitation of natural resources belonging to the Federal Government
- **Aeronautics; Agro-business; Amazon Region; Biotechnology; Energy; Informatics; Infra-structure; Mineral; Oil & Gas; Transportation; Health; Space Activities; Telecom; University-Industry Cooperation; Water Resources; and Water Transportation and Ship Building.**

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New regulatory and legal environment

- Strengthening the interaction between university and industry.
- Promote the shared use of S&T infrastructure by firms and S&T institutions (emphasis on MSMEs).
- Stimulate the creation of new technology based firms by researchers.
- Create new financial mechanisms for grants to HR, R&D and innovation in firms.
- Invest minimum of 20% in MSEs.

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FINEP Programs

Reimbursable & non-reimbursable resources

- I. Supporting firms' innovation activities (credit, venture capital, economic subvention, RH, incubators, technological parks)
- II. Supporting scientific and technological institutions (modernisation of scientific and technological infrastructure, research)
- III. Supporting cooperation between firms and scientific and technological institutions (R&D and technical assistance)
- IV. Supporting S&T for social development (health, sanitation, housing technologies, popular cooperatives, family agriculture, etc.)

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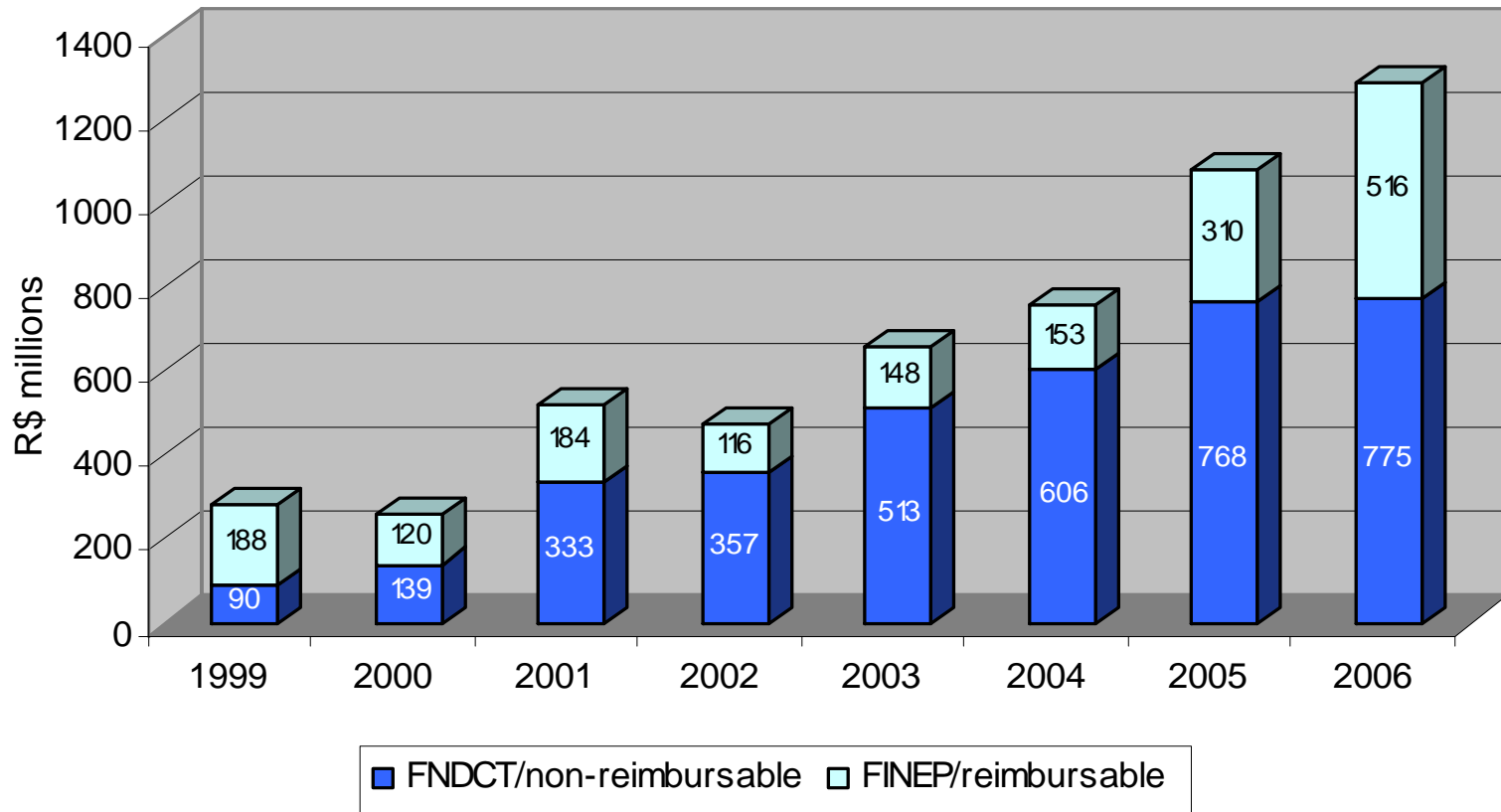
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FINEP total disbursements (reimbursable & non-reimbursable resources)

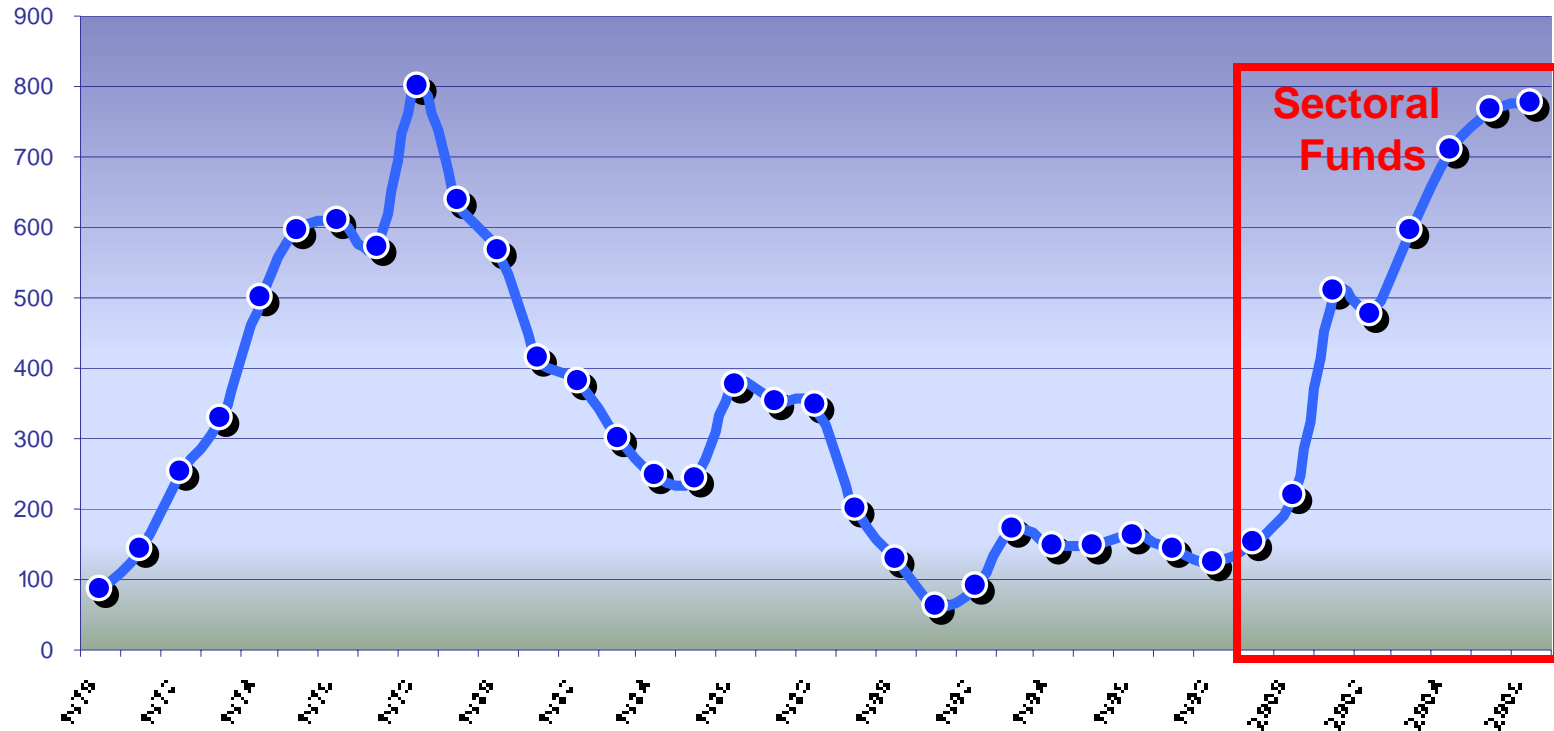


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FNDCT - Disbursements in 1970 - 2006

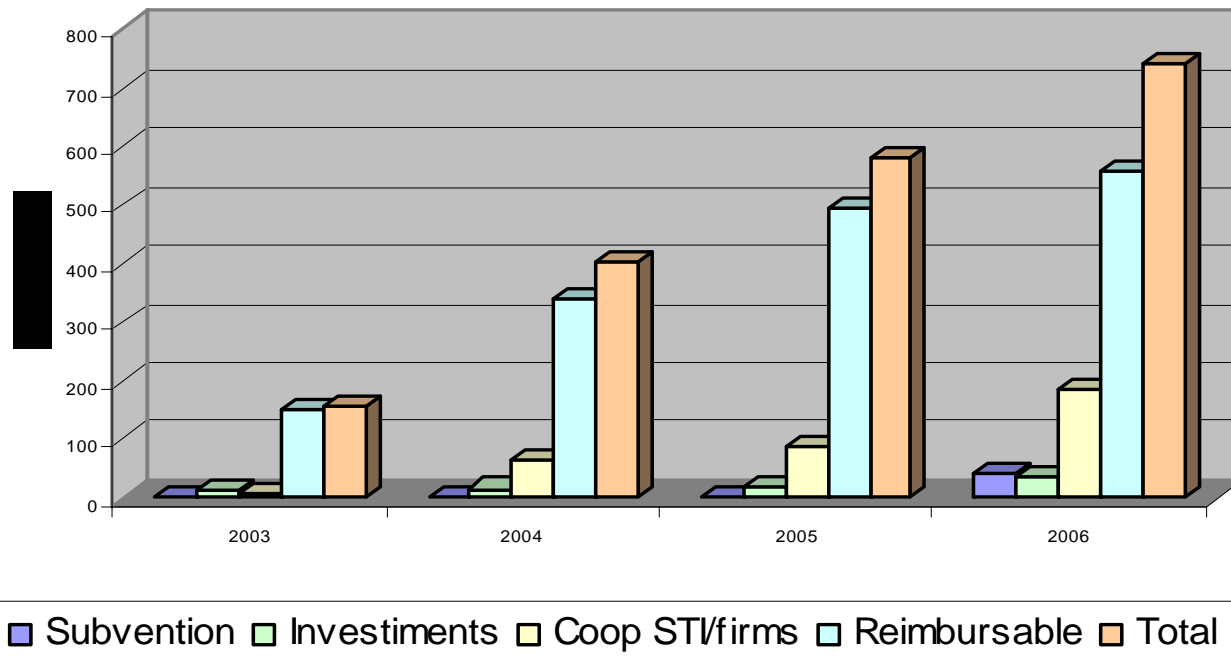


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FINEP investments in firms' innovative activities (2003-2006)



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FINEPs' Programs

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PROINOVAÇÃO

Loans for projects focusing on product, process and service innovation, aiming at contributing to the improvement of entrepreneurial competitiveness.

- Standard financing: TJLP (6.5%/year) + *spread* (2 - 5% /year)
 - Reduced rates financing: up to (TJPL – 5%) /year
- *TJLP=Long term interest rate

Reduced rates application:

- Priorities and PITCE's strategic options
Capital goods; pharmaceuticals & medicines; software & semiconductors; biotechnology; biomass; nanotechnology
- Broadening the research team
Recruitment of Master and Doctor level (at least 10% of the R&D team)

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PAPPE - Aug 2005



- Units of federation with PAPPE
- Units of federation without PAPPE

volta

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PAPPE: quantitative results

- 20 out of 27 units of the federation.
- 606 R&D projects developed .
- 11% in biotechnology, 12% in health, 13% in energy, 18% in agro-business (related to Sectoral Funds).
- 46% in other sectors supported by the University-Industry Interaction Fund.
- 549 MSMEs all over the country, being:
 - 62% micro, 21% small, 14% medium and 3% of large firms.
 - 37% incubates and 63% not incubates.

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Economic Subvention - R&D activities and HR

Innovative firms (any size)

- Strategic sectors (pharmaceutical, ICTs)
- Calls for proposals in 2006 (US\$ 150 million): 1.100 firms' proposals

Micro and small firms

- Decentralizing the operation and application of resources in partnership with state foundations, regional development banks, Sebrae, etc.
- Calls for proposals in 2006 (US\$ 75 million) for selection of states partners.

HR absorption

- Subvention of part of the salaries of doctors and masters employees in firms' innovative activities

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Juro Zero (Zero Interest)

Credit granted to MSEs for their innovative activities

no interest rates

no collateral

no bureaucracy

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Coopera: S&T institutions / large/medium size firms

Non-reimbursable funds for R&D projects focusing on PITCE priorities (pharmaceuticals & medicines, capital goods, semiconductors, software) and broad-based enabling tech. (biotechnology, nano-technology and biomass).

Total 2003-2006

- 600 R&D cooperative projects
- US\$ 300 millions (FINEP) + US\$ 100 millions (firms)

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Coopera: S&T institutions and MSE

(partnership FINEP/Sebrae)

Non-reimbursable funds for R&D projects focusing on innovation or technological diffusion of interest of MSEs (APLs, PITCE's sectors and strategic options)

Calls for proposals (2005 - 2006)

- Value of the call: US\$ 38 millions (Finep + Sebrae) for supporting projects between US\$ 100 and 250 thousands, with firms' counterpart of 5 to 30% (according to size and region)
- Approved: 167 projects, involving more than 700 MSEs

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PROGEX

- Partnership MCT and Ministry of Development, Industry and Trade
- Technological assistance, consultancy and services provided by technological institutes for supporting MSMEs exporting activities
- More than US\$ 16.5 millions driven to more than 650 firms for the improvement of more than 1,000 products
- Evaluation: increasing of 153% exporting performance from a sample of 270 firms
- Increasing of 36.5% yearly revenue compared to 18.5% from those not supported firms.

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A. INOVAR Program: current lines of action

- **Incubator of Funds:** Since 2001, 24 Funds implemented in Brazil, 12 invested by FINEP/IDB-MIF
- **Seed money – Inovar Semente**
- **Portal Venture Capital Brazil –** First website of venture capital in Brazil (2000) - 2.372 entrepreneurs registered and 635.941 consultations.
- **Venture Capital –** training of 100 professionals for the market
- **INOVAR Network for business prospecting and development** (FINEP, SEBRAE, CNPq, IEL, ANPROTEC e SOFTEX)

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Programa INOVAR Semente



Characteristics

- R\$300M
- 24 seed-funds
- 40% FINEP
- 40% other investors
- 20% private
- Private management
- Incentives to private investor
- Local

volta

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FOCUS AND FORM EVOLUTION OVER TIME

- **70`s: Focus on building up the S&T system.**
- **80`s and 90`s: hard times but still building.**
- **2000 and on: Picking up strength.**
- **2004: New regulatory environment.**

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IMPACT ON ST&I CAPACITY

- **Brazil 1970:** -230 research teams
-300 doctor`s degree/yr
-<0.3% world`s knowledge
- Brazil 2005:** -19,470 research teams
-10,000 d`s degree/yr
-1.8% world`s knowledge

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IMPACT ON ECONOMIC PERFORMANCE

- **Ex-post evaluation survey (IPEA, 2005)**
 - **The benefited firms of FINEP's financial support present better performance, on average, related to R&D activities (50 to 100% more).**
 - **Brazilian firms invest 80,8% more in R&D, than MNC's subsidiaries in Brazil (% of revenue).**
 - **Revenue, exporting value, salaries, job quality and productivity have been above average.**

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IMPACT ON ECONOMIC PERFORMANCE

- **Electronic ballot box (100 million voters-23h result)**
- **Oil industry:deep water drill (1,886 m); self-sufficiency(2006)**
- **Aircraft industry: Embraer**
- **Agribusiness: Embrapa**
Ethanol, soya, sugar, coffee, orange juice, poultry, beef.

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LESSONS LEARNED

- 2003 IBGE`s SURVEY: 83,000 firms.
 - only 21.2% got support from gov. programs;
 - 65% were large firms(>500 employees).

THEREFORE WE NEED:

- Simplify procedures
- Programs tailored to SME`s (no collaterals)
- Education: more and better
- Adequate financing
- Adequate evaluation policies

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Thanks for your attention

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