

Development of Israel High-Tech Sector 1995-1999: Labour Force And Wages



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Main Goal of this Paper

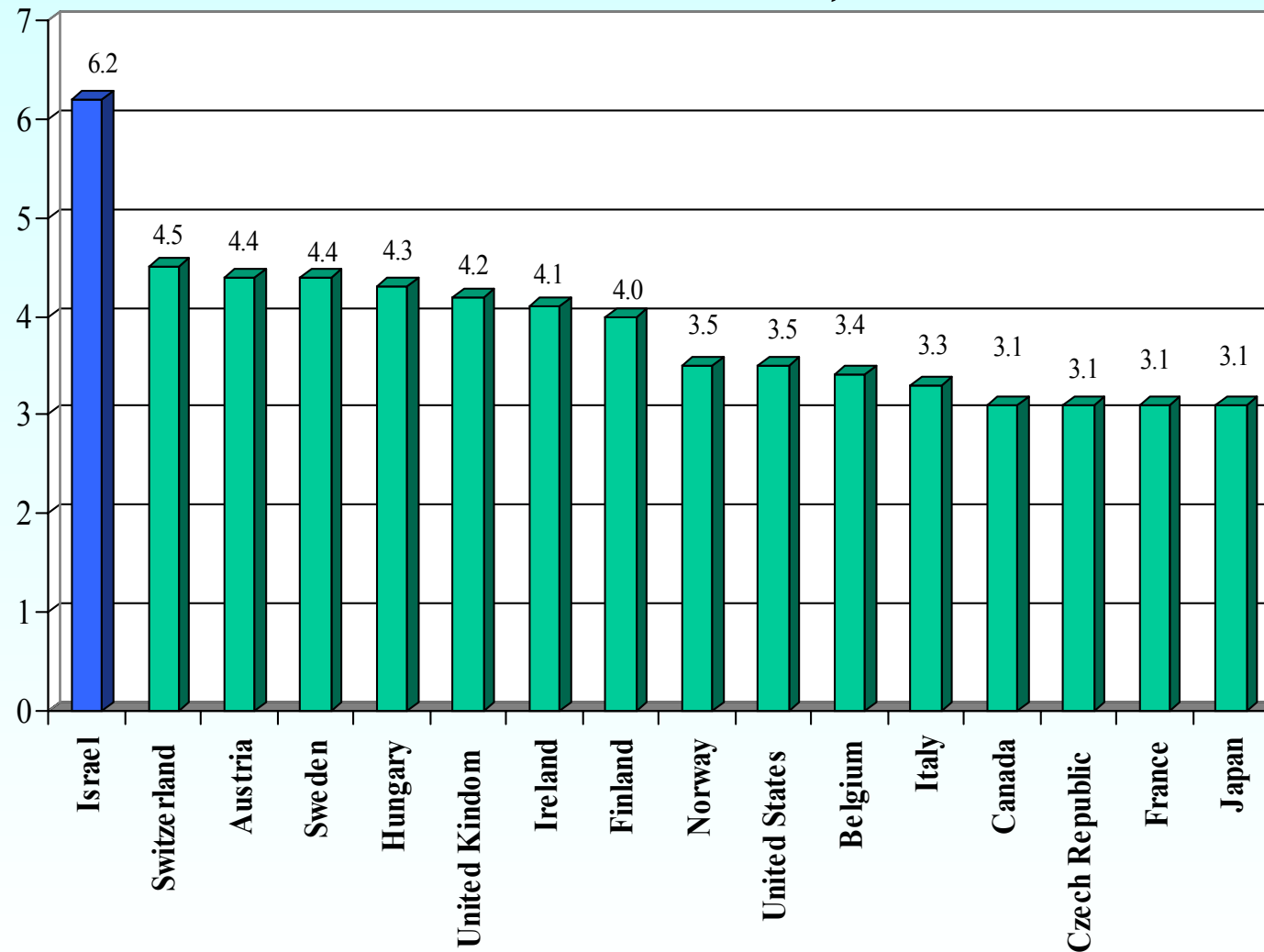
- To review the development of the Labour Force and Wage levels in the High-Tech Sector in Israel between 1995-1999



Background: International Context

- High-Tech Sector has been developing all around the world
- Israel is one of the leading countries in the world in this sector
- The next graph demonstrates Israel's position in the world concerning employed persons in High-Tech Sector

Percent of employed persons in High-Tech Activities from total employed persons by selected countries, 1997



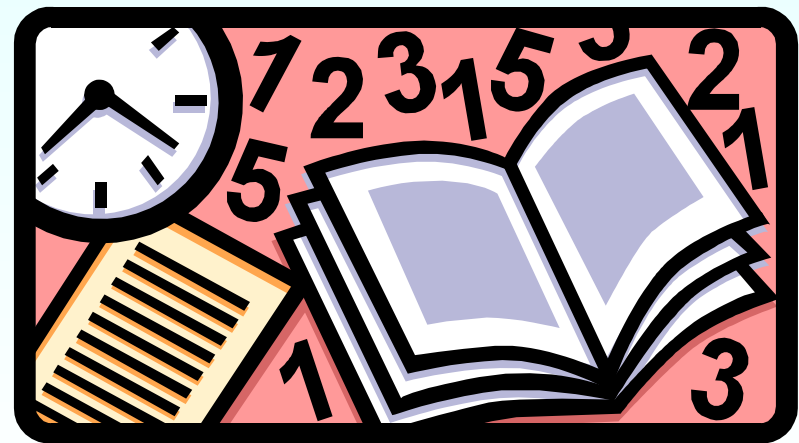
Definition of High-Tech Sector used in this project

- No uniform international definition
- Different definitions in different organizations
 - OECD
 - American Electronic Association (AEA)
 - BLS
 - Statistics Canada



Definition of High-Tech Sector used in this project (continued)

- In this Paper we apply to the Israeli situation the principles of the AEA definition of High-Tech Sector (based on existing SIC codes)



Definition of High-Tech Sector used in this project (continued)

- The Israeli Definition is based on the following 3 principles:
 1. The definition must be practical, i.e. useful for measurement purposes.
 2. The definition must be comparable to acceptable international definitions.
 3. Definition should be dynamic and flexible.

Definition of High-Tech Activities (based on Israeli SIC, 1993)

- **Manufacturing** in High-Tech Sector ***includes:*** manufacture of office machinery and computers; electronical components and semiconductors; telecommunication, data-communication and domestic electronic equipment; industrial equipment for control and supervision, medical and scientific equipment; aircraft.



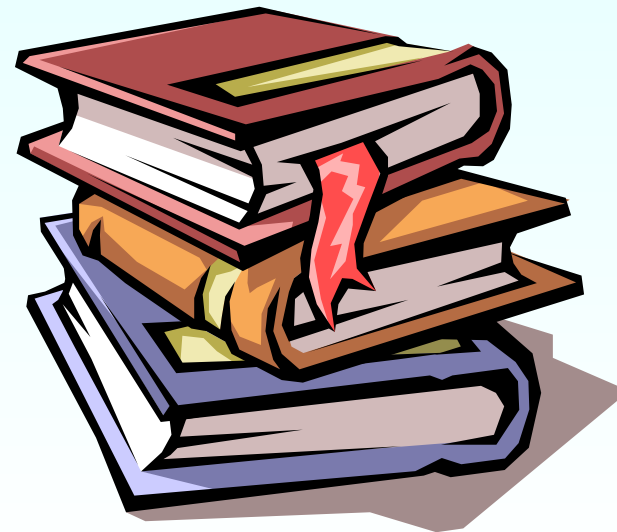
Definition of High-Tech

Activities (based on Israeli SIC, 1993)

- **Telecommunications** in High-Tech Sector ***includes:*** National and other telecommunication services.
- **Computer and related services** in High-Tech Sector ***include:*** computer consultancy; programming and system analysis services; data processing; data base and data storage activities; maintenance and repair of computing, office and accounting machinery; computer related services n.s.

Definition of High-Tech Activities (based on Israeli SIC, 1993)

- **R&D** in High-Tech Sector ***includes:***
research and development in natural and social sciences and humanities.



Definition of High-Tech Occupations (based on Israeli SCO, 1994)

- **Academic professionals** in High-Tech Occupations *include*: biologists and related professionals; pharmacologists; chemists; physicists and astronomers; geologists and geophysicists; mathematicians and actuaries; system analysts and related computer professionals; electrical and electronics engineers; mechanical engineers; computer engineers.

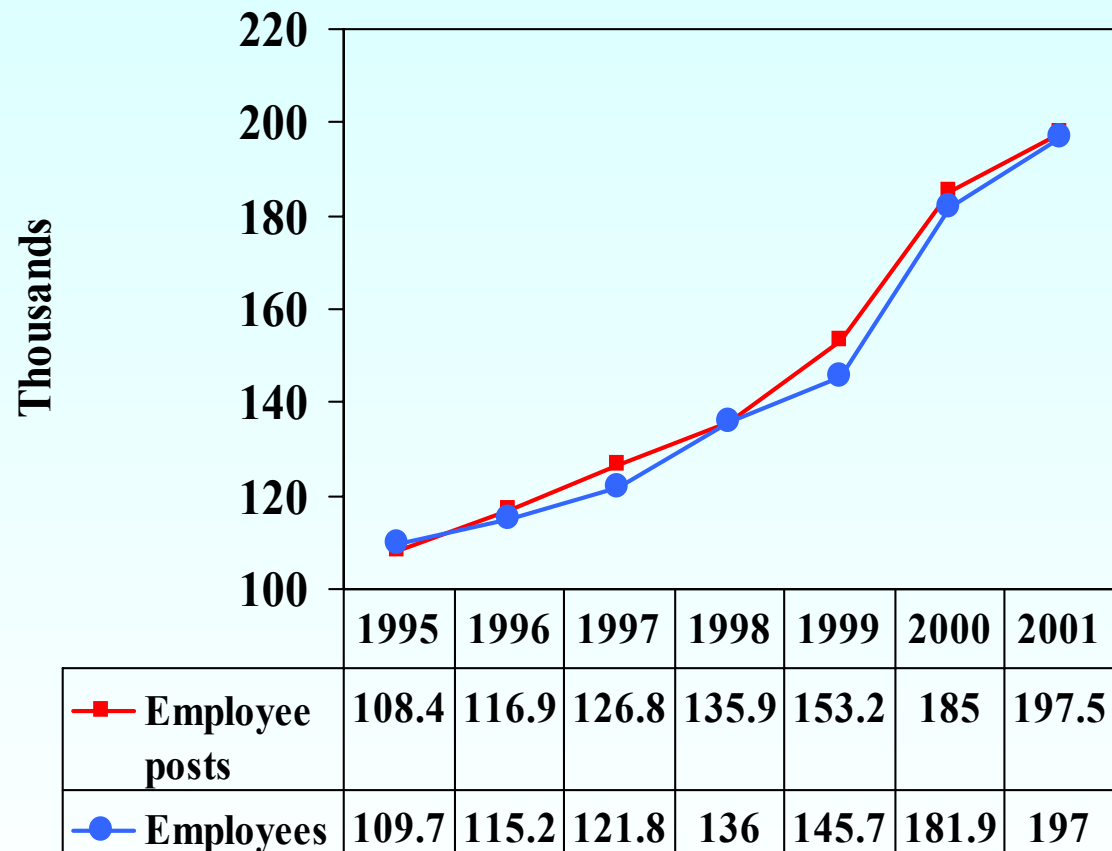
Definition of High-Tech Occupations (based on Israeli SCO, 1994)

- **Associate professionals and technicians** in High-Tech Occupations ***include:*** physical engineering technicians; electronic engineering technicians; mechanical engineering technicians; computer technicians and programmers.
- **Managers** in High-Tech Occupations ***include:*** computer services managers.

Data Sources used in this Paper

- Two data sources were used: Israel Labour Force Survey and Series on Israeli Employment and Wages (based on reports to the National Insurance Institute).
- No significant difference between the two data sources regarding the number of employees in Hi-Tech Sector.

Employees in Hi-Tech Activities



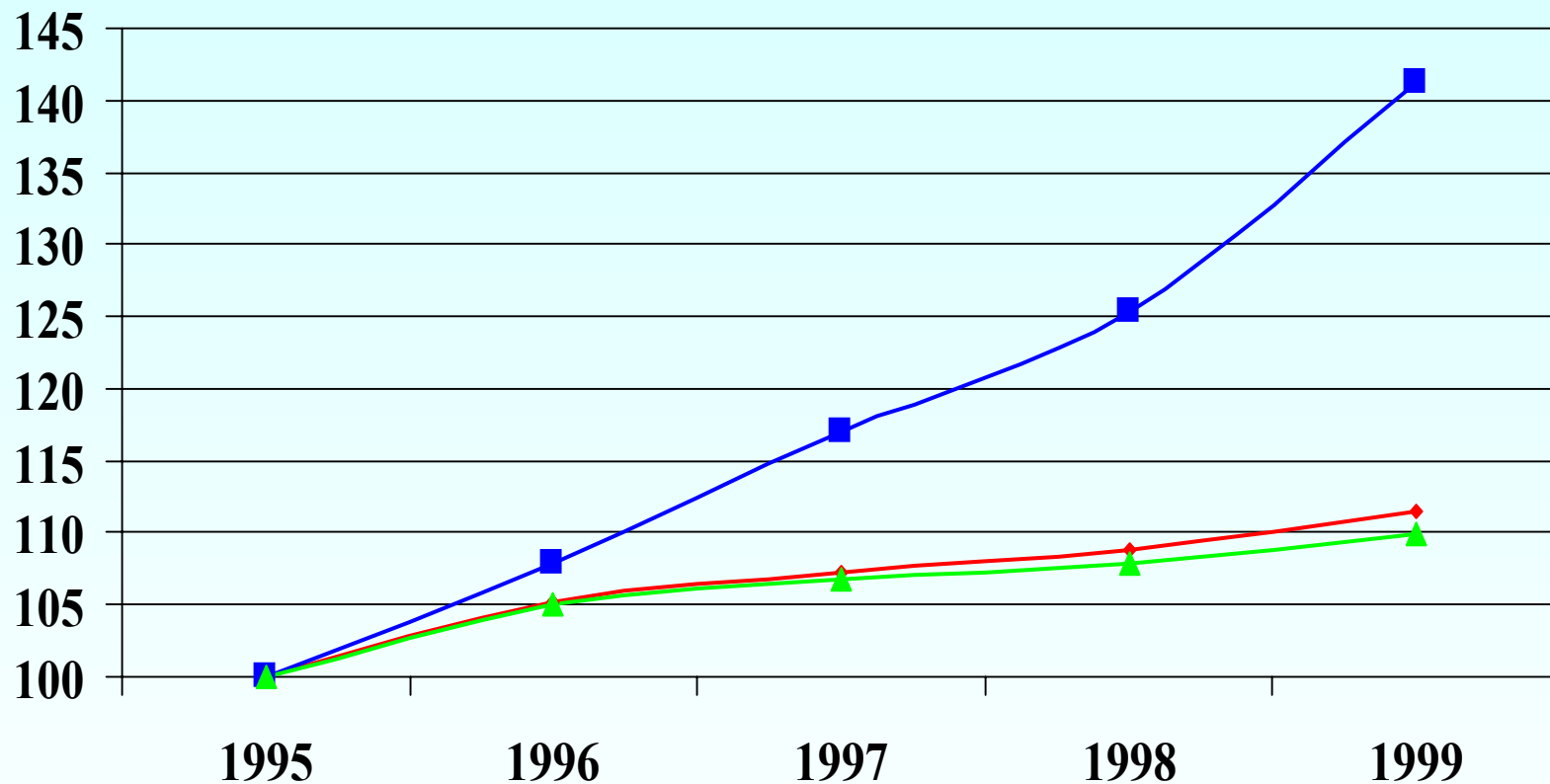
Selected Findings

- Increase in the number of employee posts in the High-Tech Sector between 1995-1999.
- Increase of average monthly wages per employee post in High-Tech Sector between 1995-1999.
- Selected characteristics of employees in the High-Tech Sector: Age, Gender, Education Level, High-Tech Occupations.

Increase in the number of employee posts in High-Tech Sector between 1995-1999

- The High-Tech Sector contribution to the growth of the total number of employed persons was approximately 20% between 1995-1999.
- The next graph shows that growth in the index of employee posts in High-Tech Sector was much faster than in the non-High-Tech Sector or in all economic activities combined.

Employee Posts Index between 1995-1999; based on 1995=100

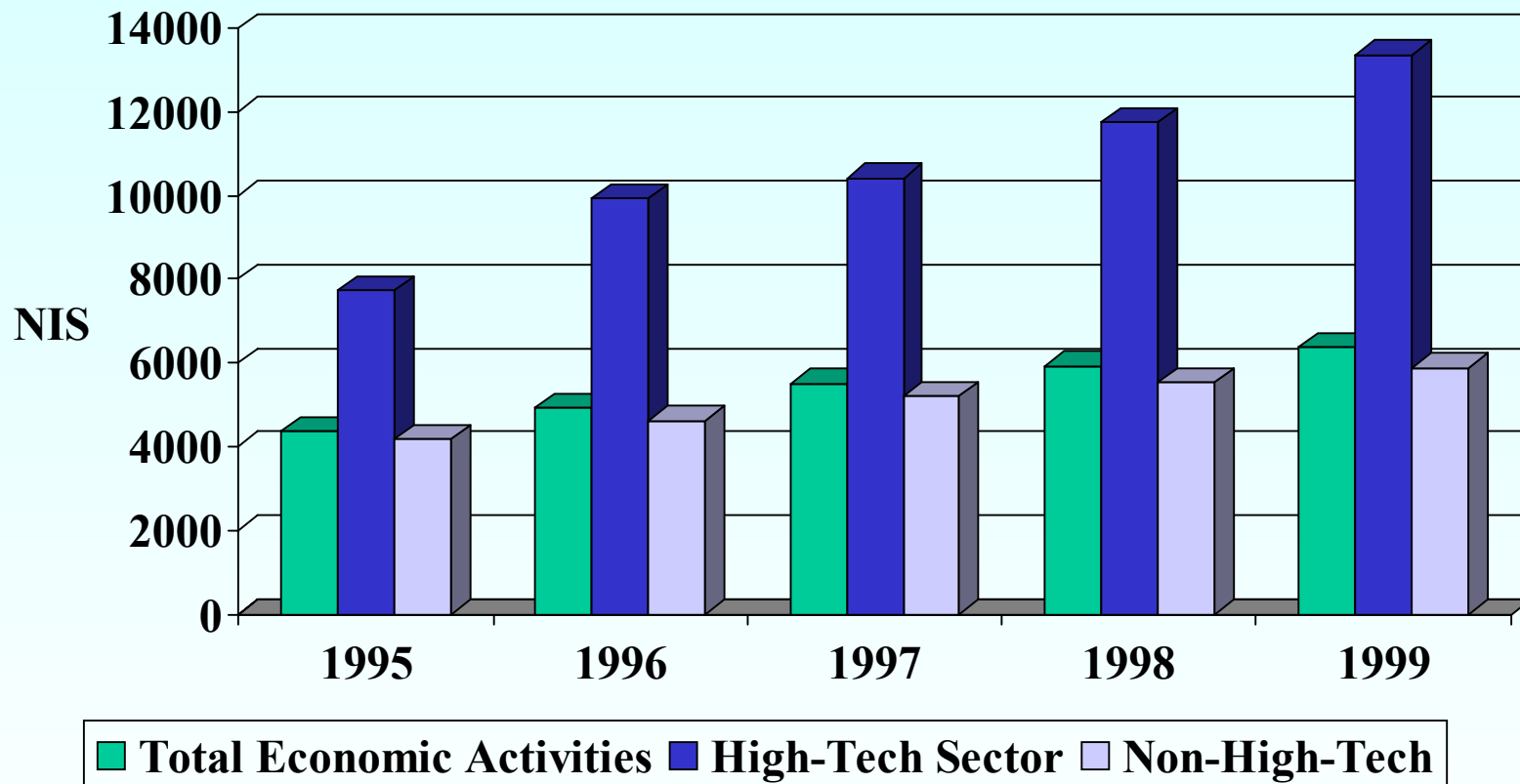


—◆— Total Economic Activities —■— High-Tech Sector —▲— Non-High-Tech

Increase of average monthly wages per employee post in High-Tech Sector between 1995-1999

- The following graph shows that between 1995-1999 the average monthly wage in High-Tech Sector grew by approximately 73% and reached about NIS 13,370 in 1999. Average monthly wages in total economy activities increased by only 46% (NIS 6,380 in 1999).

Average Monthly Wages between 1995-1999



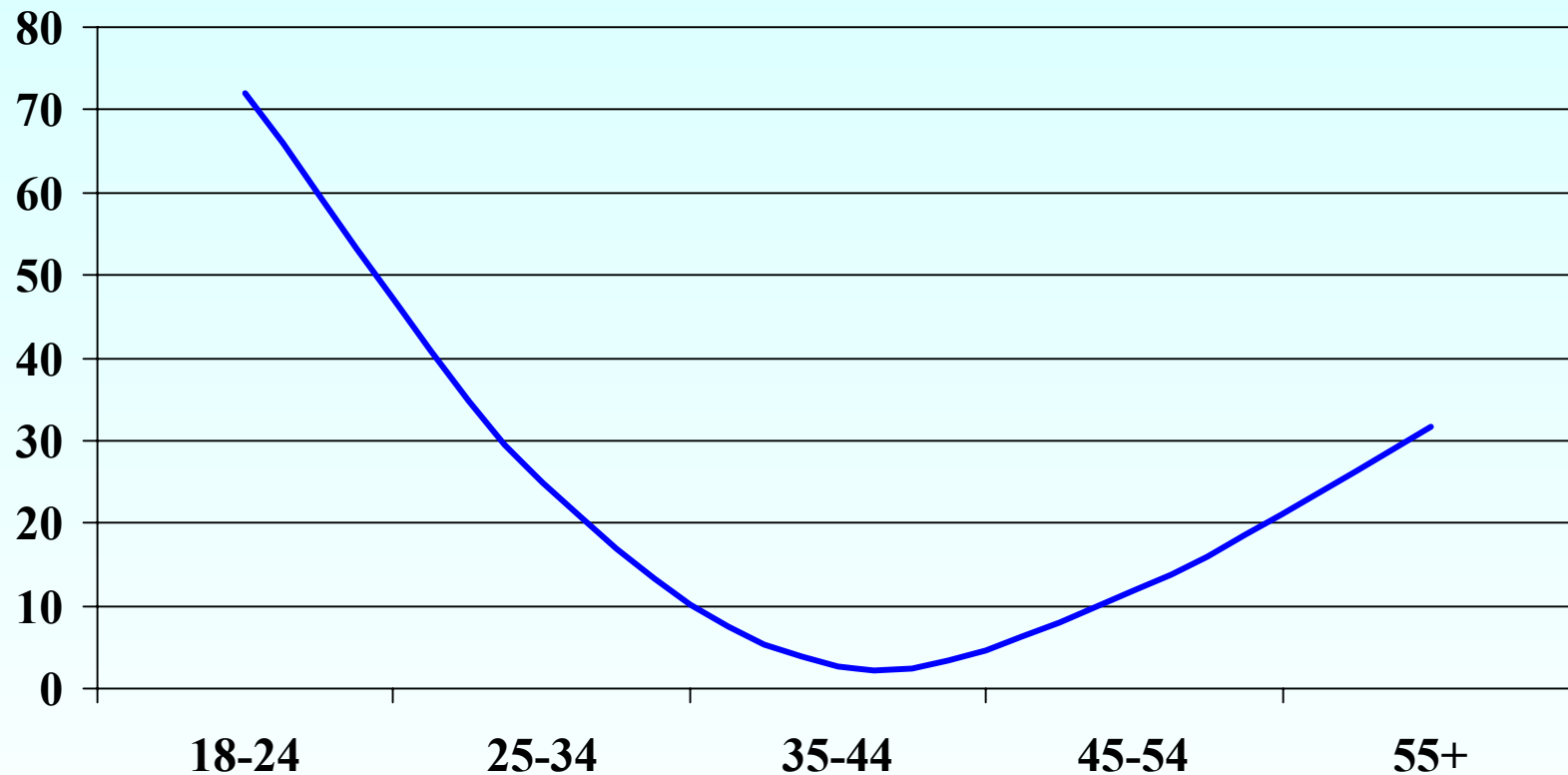
Selected characteristics of employees in High-Tech Sector: Age

There are two employee age groups which impact on growth in the High-Tech Sector:

- The number of younger employees in the High-Tech Sector has been growing.
- Over time growth in High-Tech Sector employment is affected significantly by individuals seeking a “second career”.

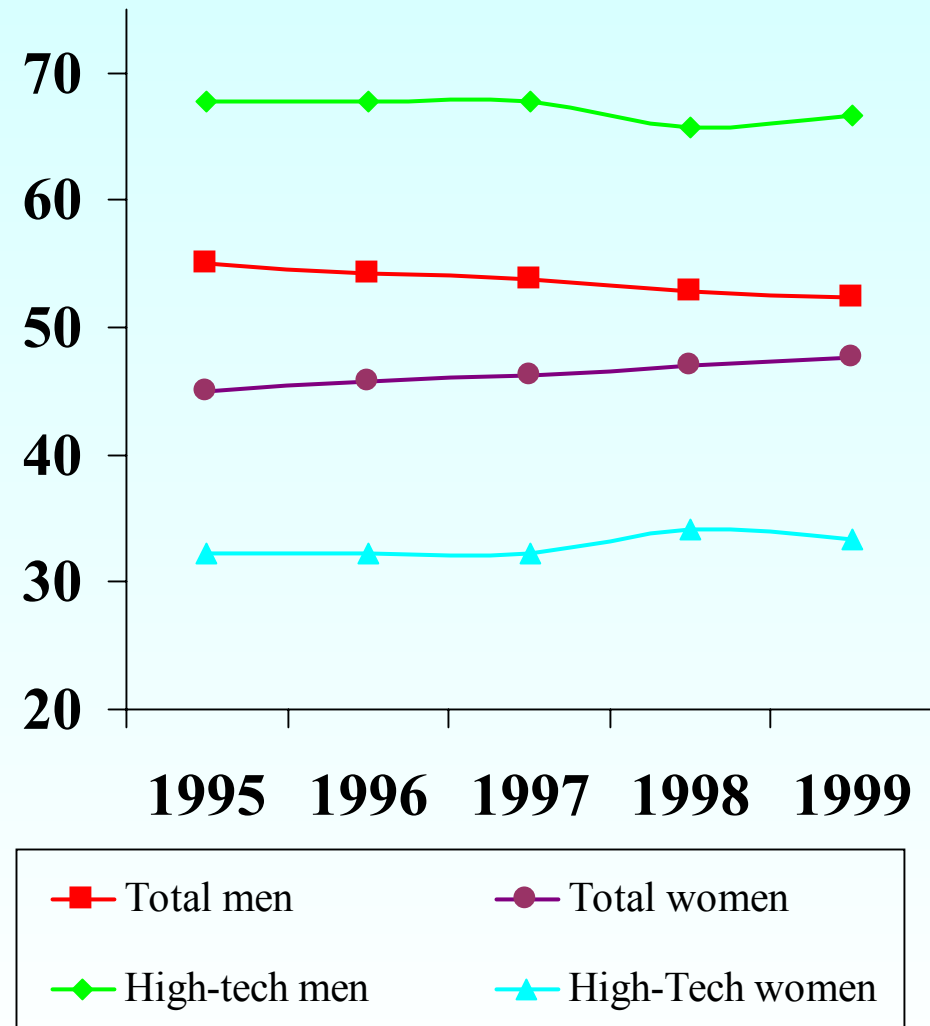
The following graph shows an inverse J-shaped curve, representing the percentage changes in High-Tech Sector employment by age.

Percent changes in the share of High-Tech Sector employment of total employment, 1995-1999



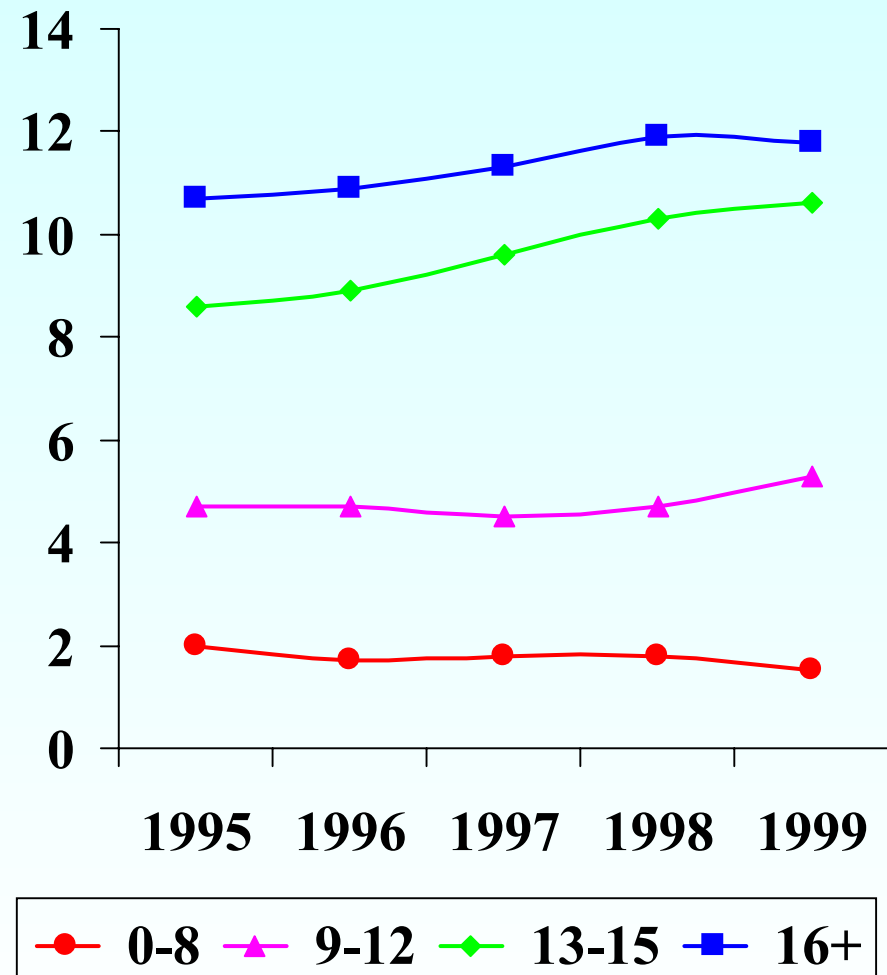
Selected characteristics of employees in High-Tech Sector: Gender

- Our examination of the changes in High-Tech Sector employment by gender has revealed lower participation by women and higher participation by men between 1995-1999
- Graph: Percent of employees by gender in High-Tech and in Total Economic Activities, 1995-1999



Selected characteristics of employees in High-Tech Sector: Education Level

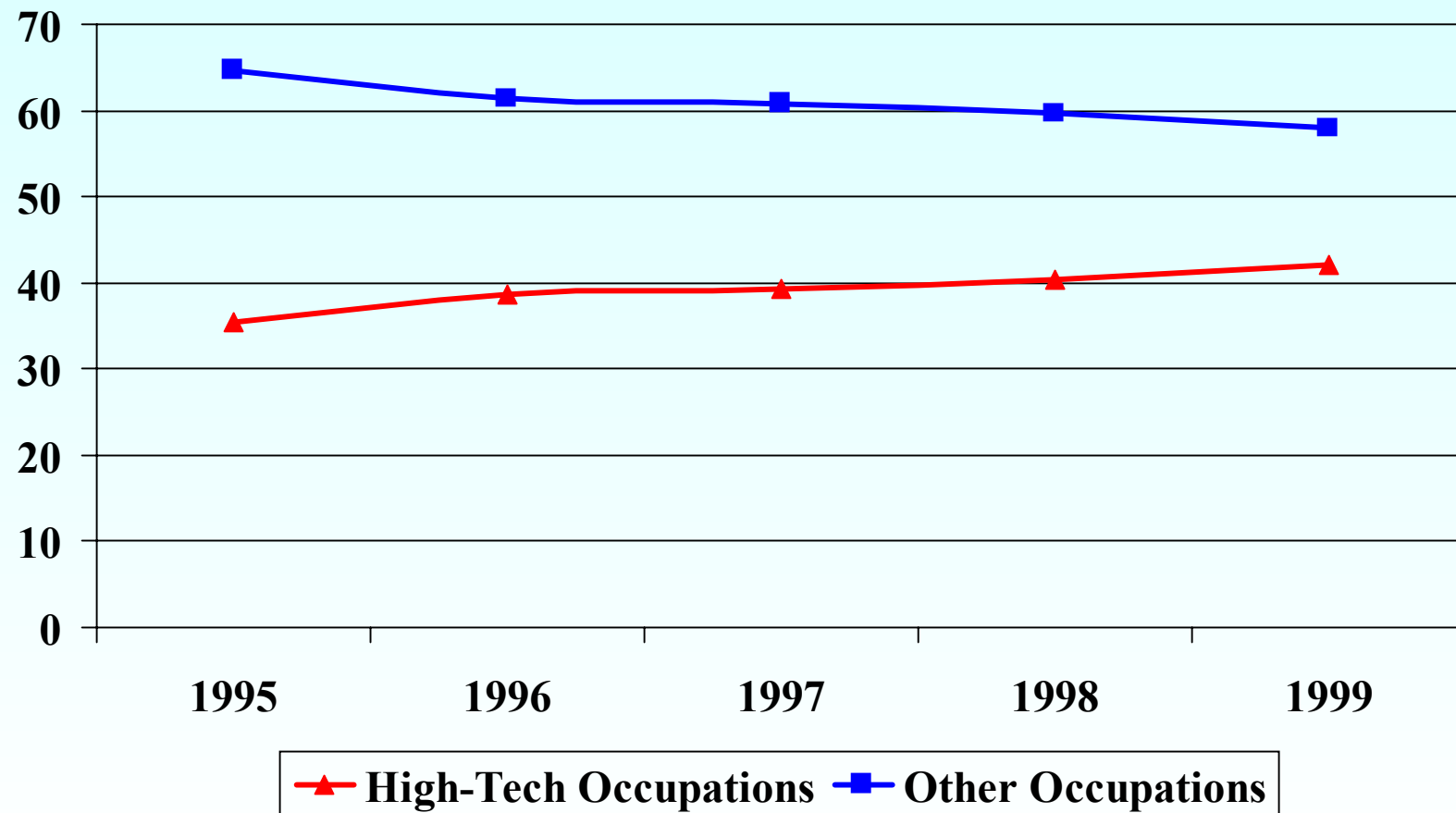
- Share of High-Tech Sector employment for those with 13 or more years of schooling is much greater than other shares.
- Rate of growth of this group is also higher than other groups.
- Graph: Share of High-Tech employment of total employment by Years of Schooling, 1995-1999.



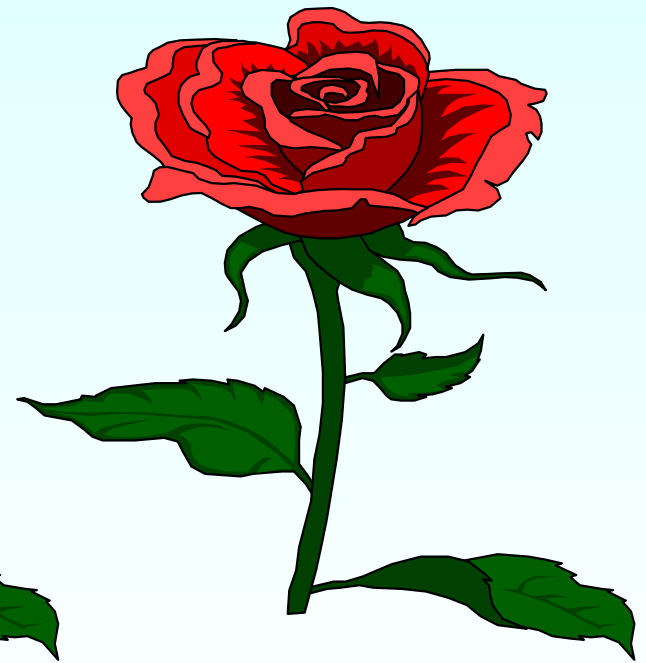
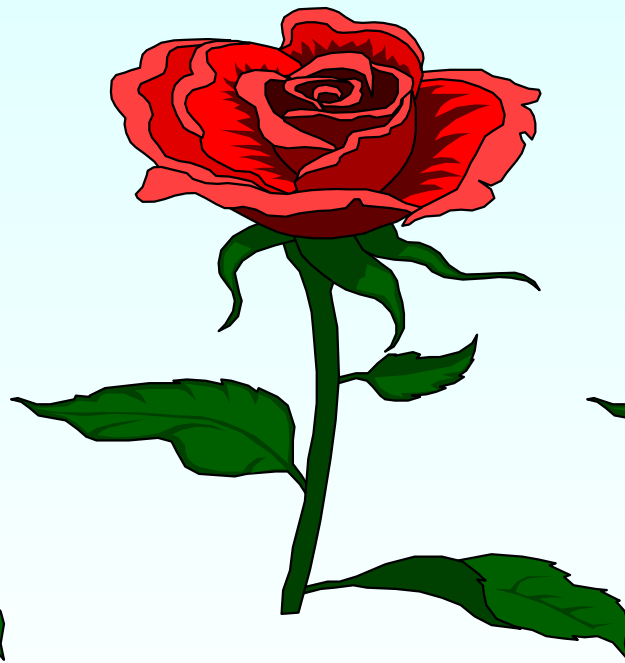
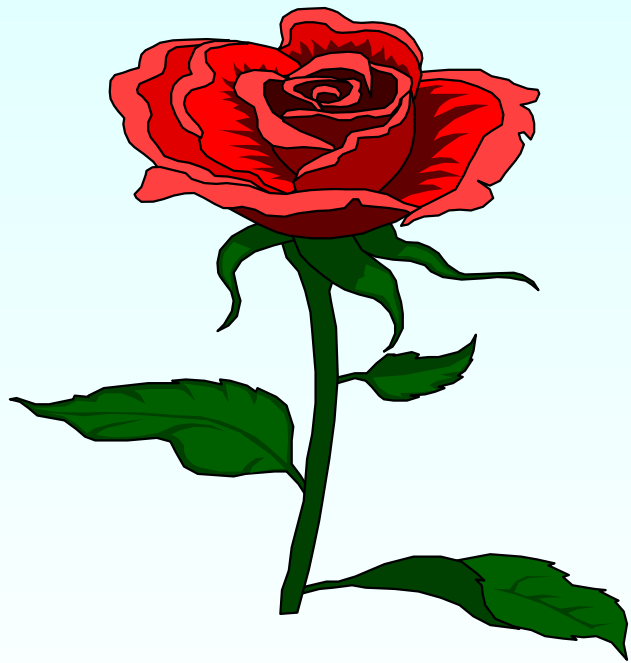
High-Tech Occupations in High-Tech Sector

- The major occupations in High-Tech Sector are Computer technicians and Programmers (growth of 104% between 1995-1999).
- The Employment Multiplier of the High-Tech Sector for the creation of ancillary occupations declined between 1995-1999 from 1.8 to 1.4.
- The main reason for this decline is the increase in the R&D Sector which has a lower ancillary multiplier.
- The next graph shows the changes in distribution of occupations between 1995-1999.

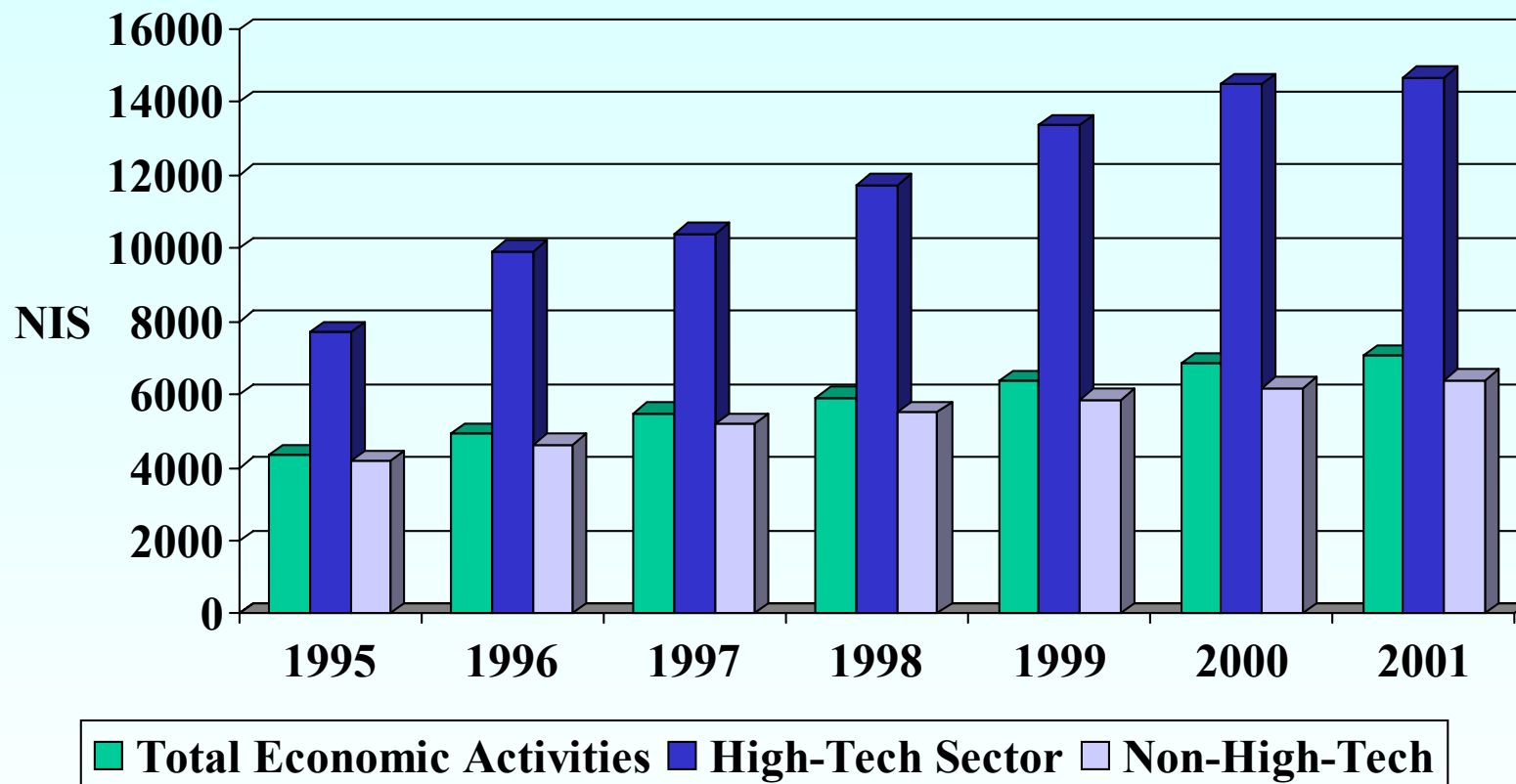
Percent of Employees in High-Tech Sector by High-Tech and Other Occupations, 1995-1999



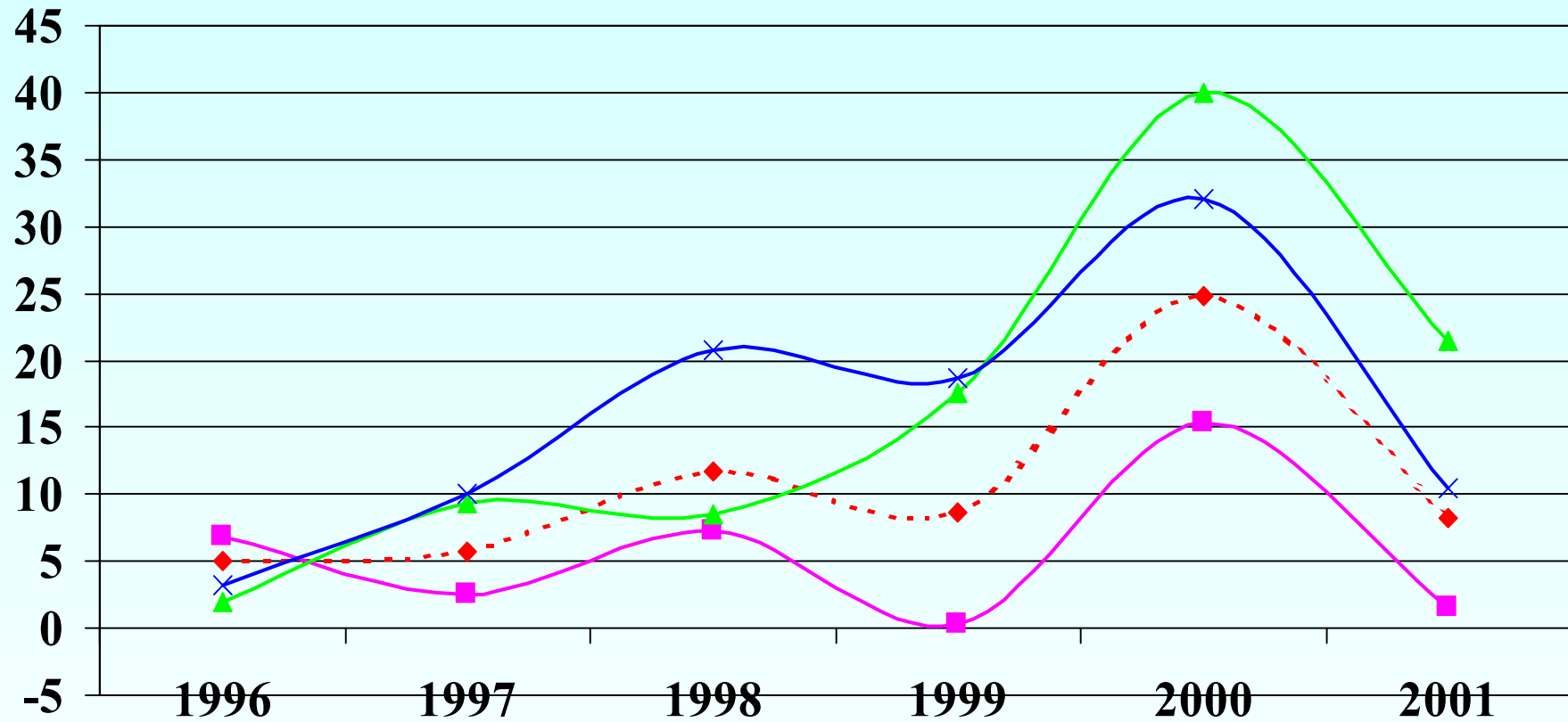
Thank You For Your Attention!



Average Monthly Wages between 1995-2001



Employees in Hi-Tech Sector, percentage change year by year



- ◆--- High-Tech industry - total
- Manufacturing in High-Tech
- ▲— Communications
- ×— Computer and related services and R&D