



# IT Demand and the Business Cycle

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# Risk Factors

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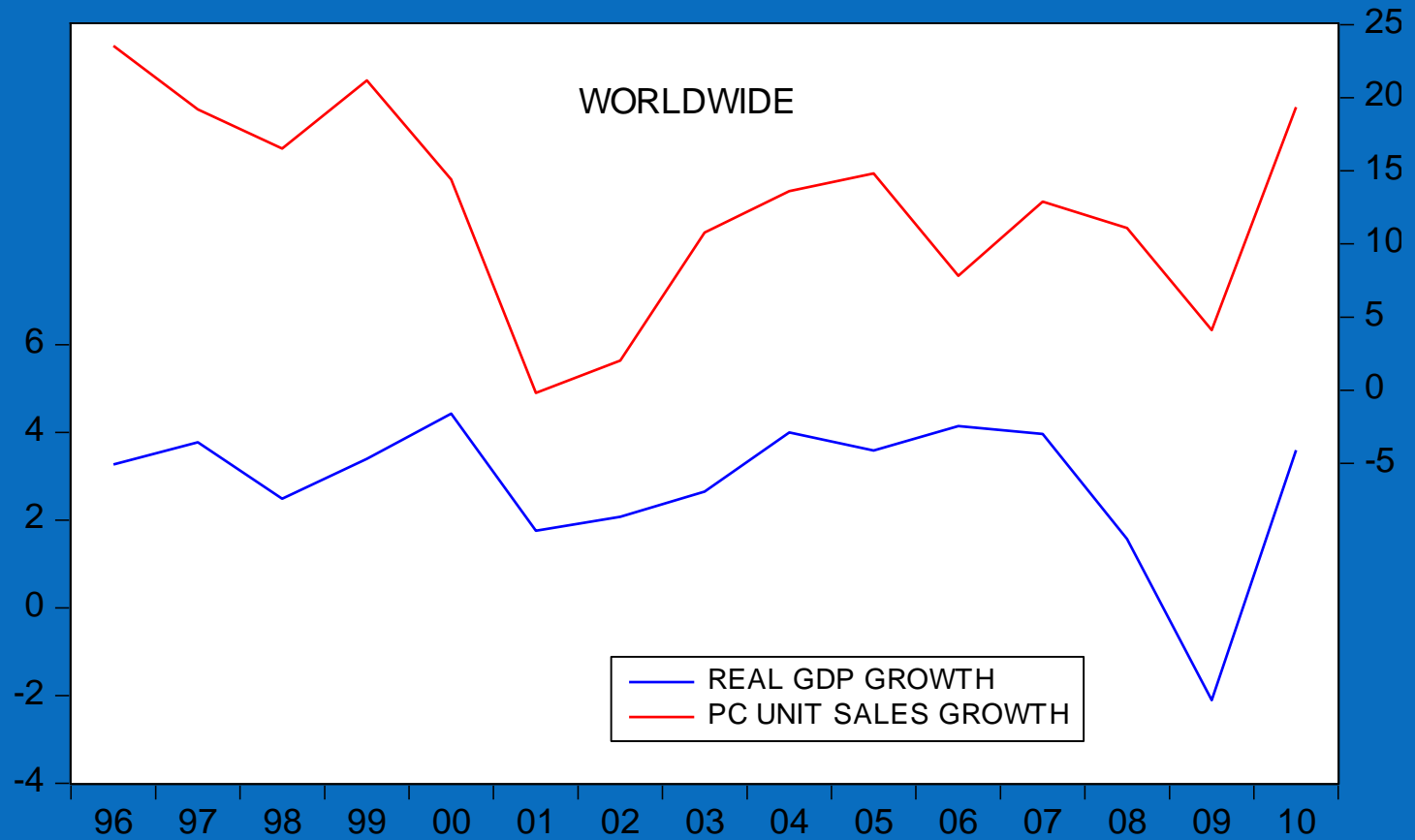
# Abstract

## IT Demand and the Business Cycle

The relatively mild recession of 2001 caused a stall in PC unit sales growth that lasted into 2002. After five good years of world economic and PC unit sales growth from 2003 to 2007, it was reasonable to expect an actual decline in unit PC sales during the severe world recession of 2008 and 2009. Yet, unit sales continued to grow during this recession.

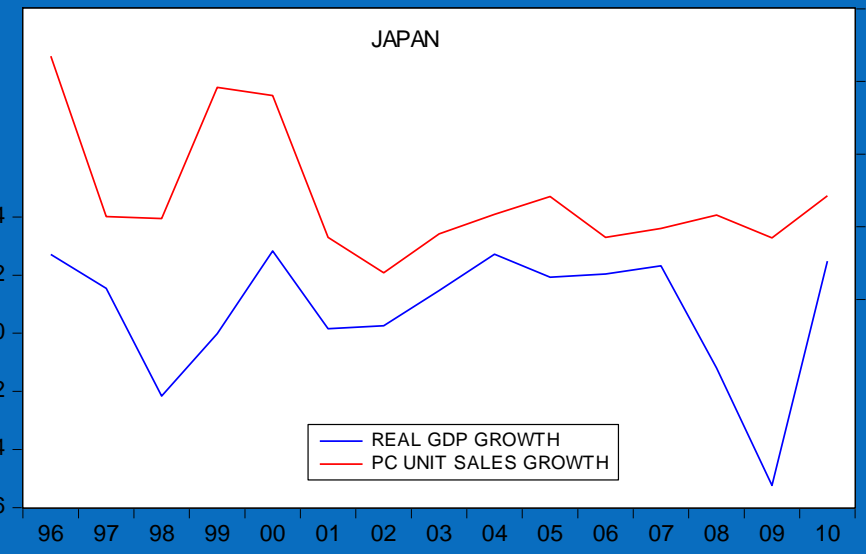
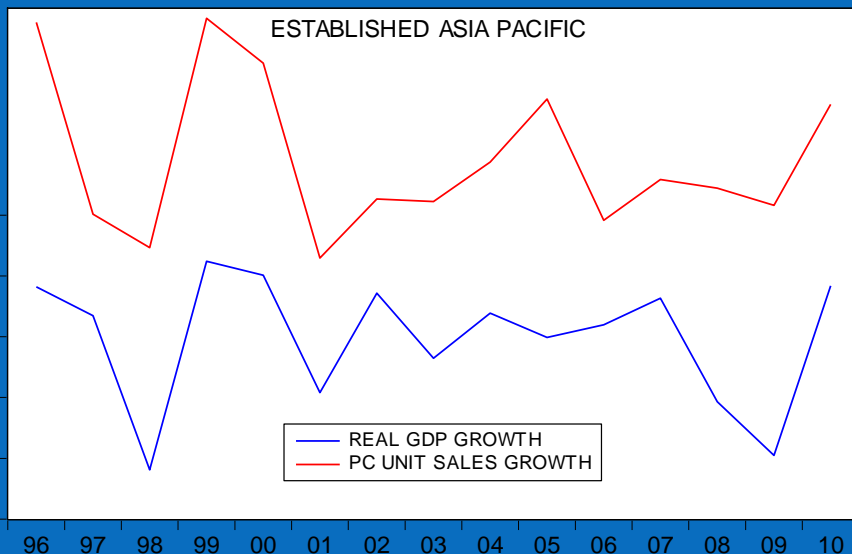
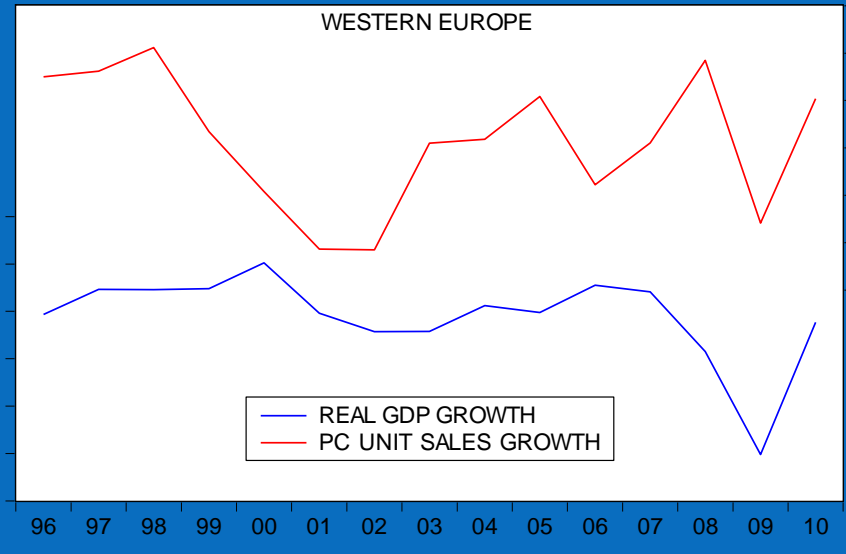
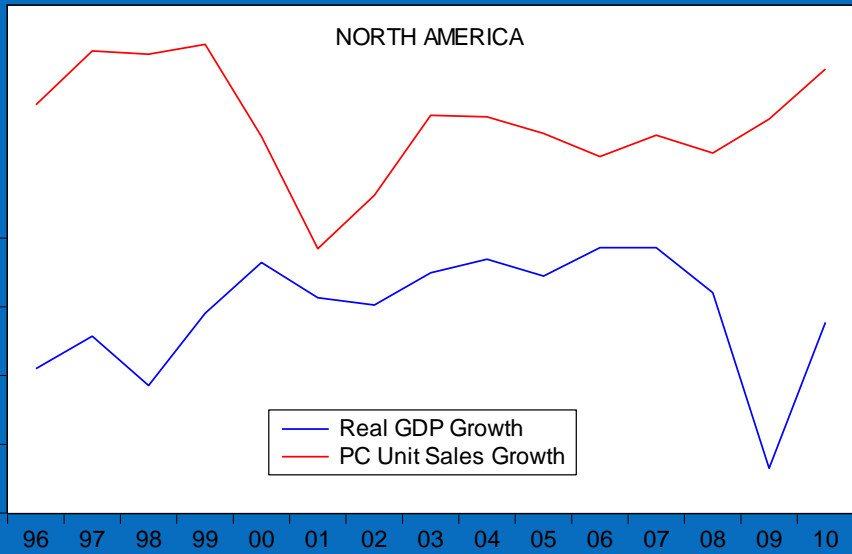
What changed between 2001 and 2008 to make PC demand less sensitive to an economic downturn? We'll discuss the changing nature of PC demand and the changing role of IT in consumer and business sectors to understand the current robustness of demand, its potential in future economic downturns, and what this means for the role of IT in U.S. and world economic growth.

# The Business Cycle and PC Demand : Worldwide

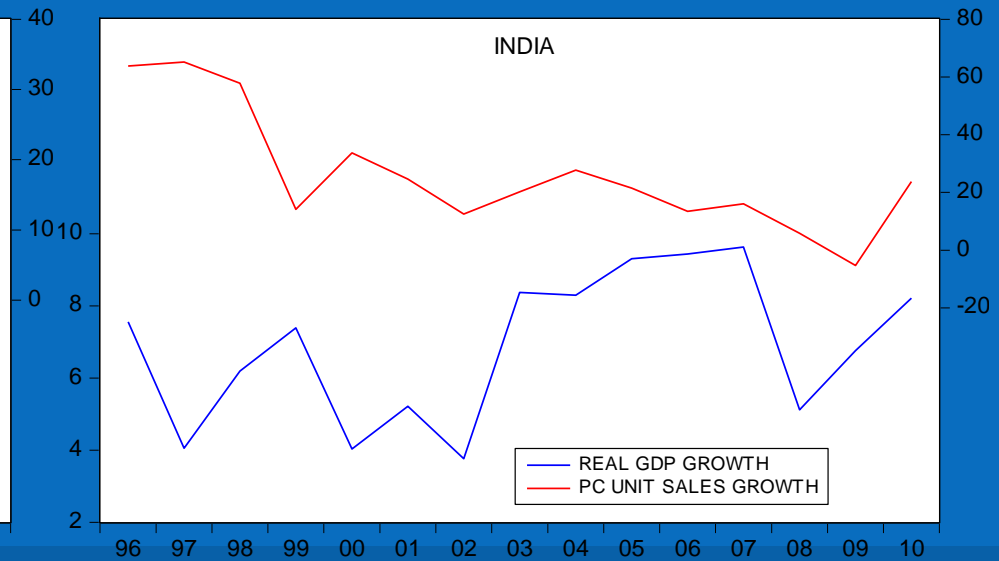
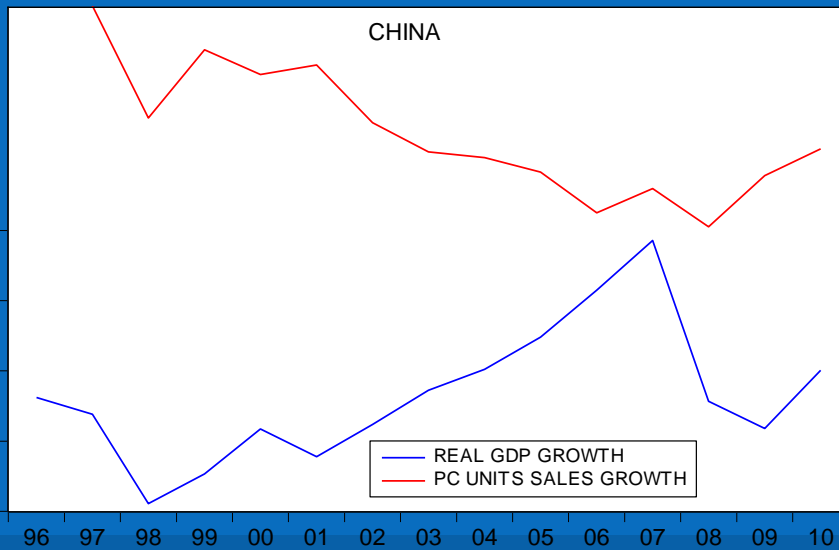
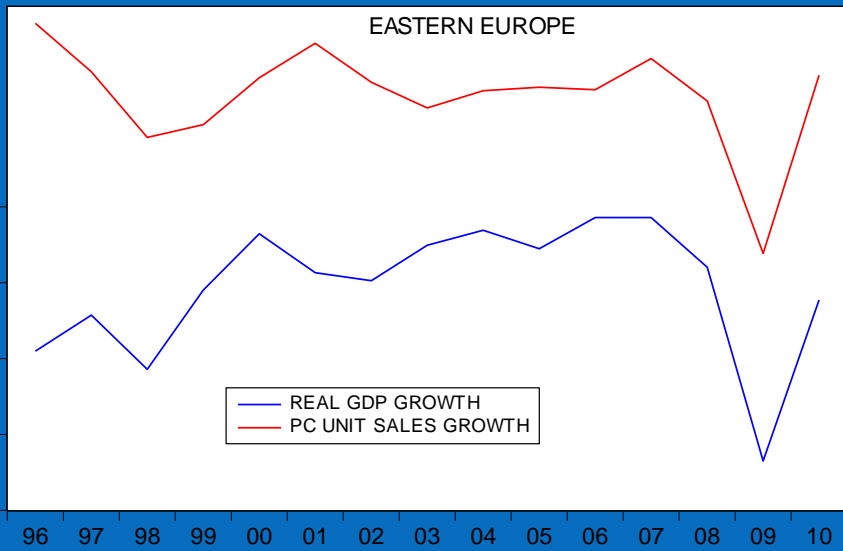


- Mild 2001 recession stalled worldwide PC growth
- Severe 2008-2009 recession slowed PC growth to 11% YoY in 2008 and 4% in 2009.

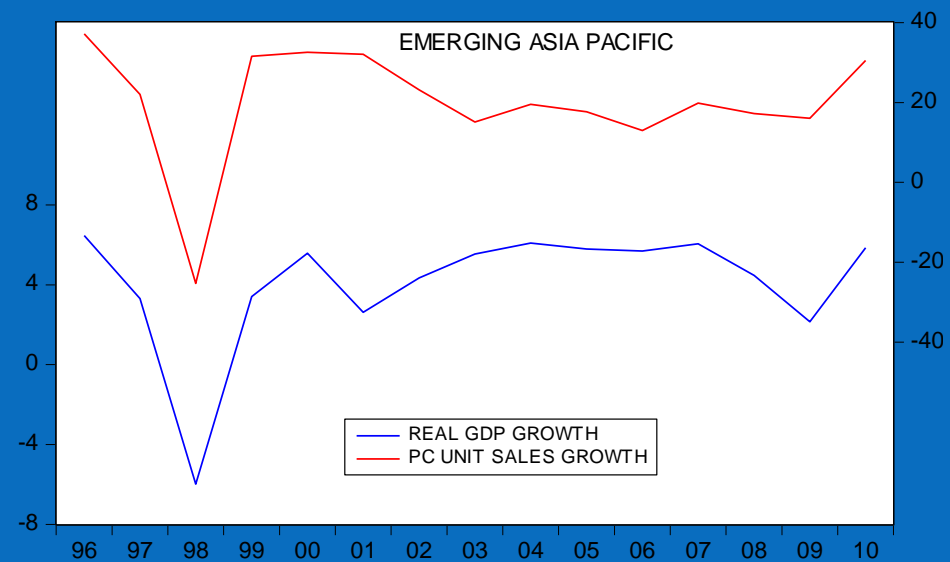
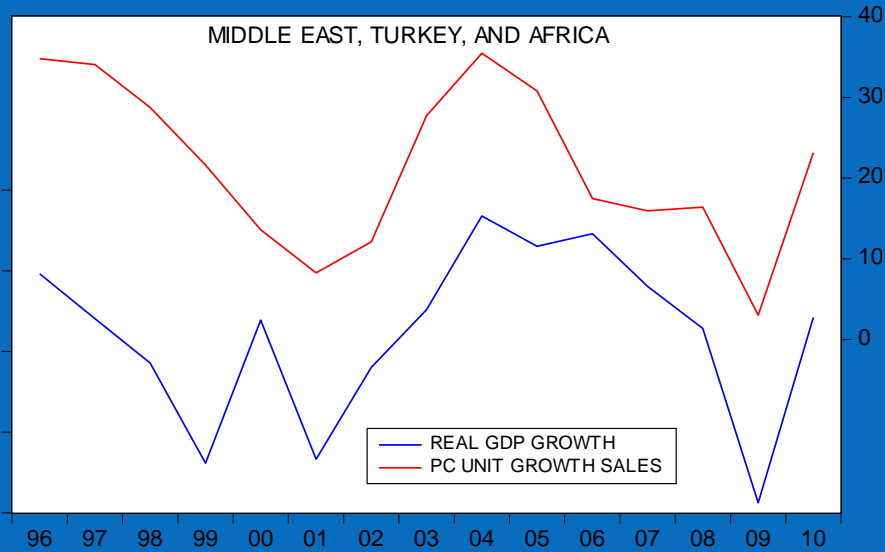
# The Business Cycle and PC Demand : Regions



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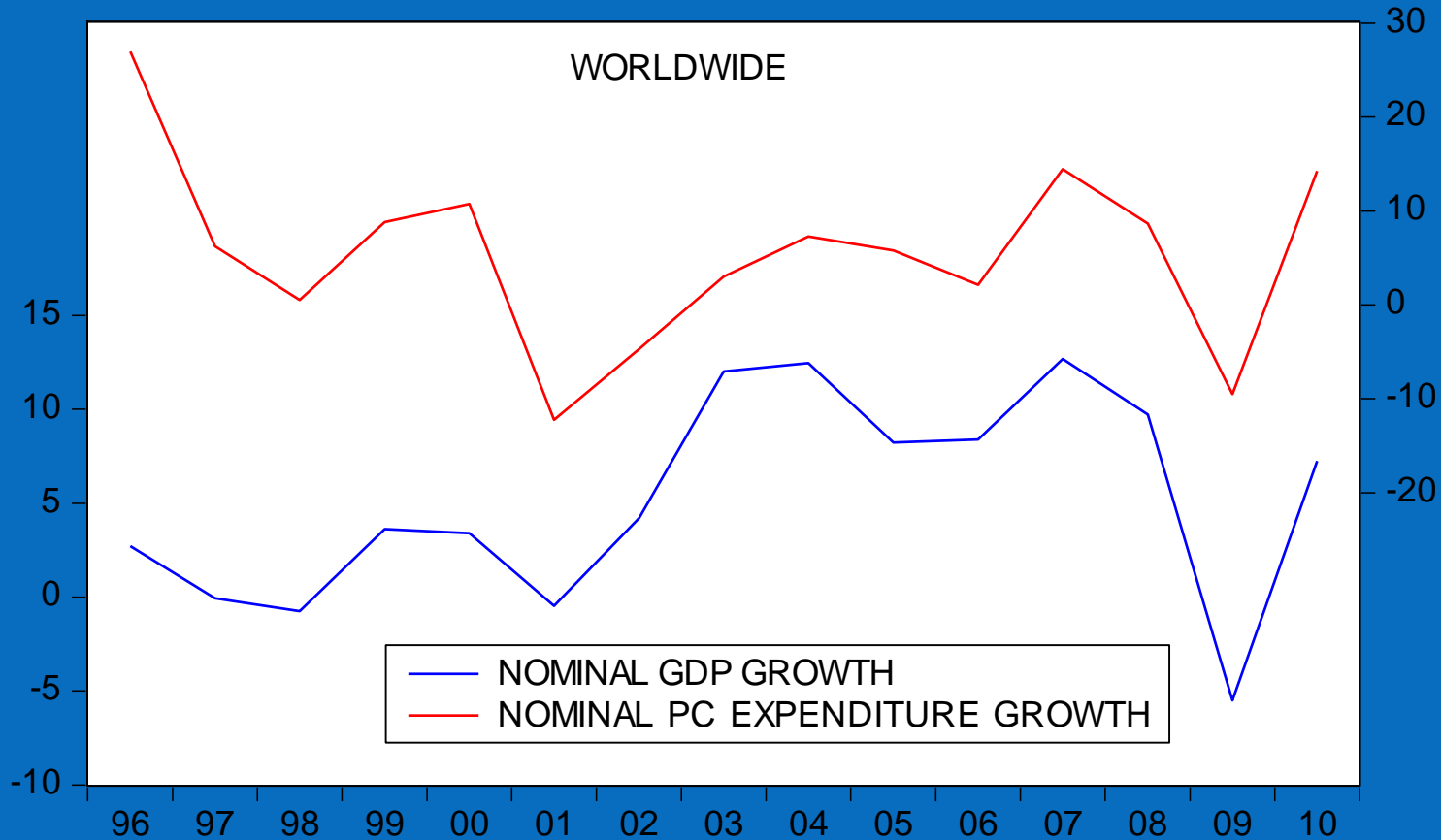


# The Business Cycle and PC Demand : Regions



- Four “Established” regions (North America, Western Europe, Japan, and Established Asia Pacific) less sensitive to 2008-2009 Great Recession than to 2001 recession
- “Emerging” regions reactions differed. By some measures, reacted disproportionately.

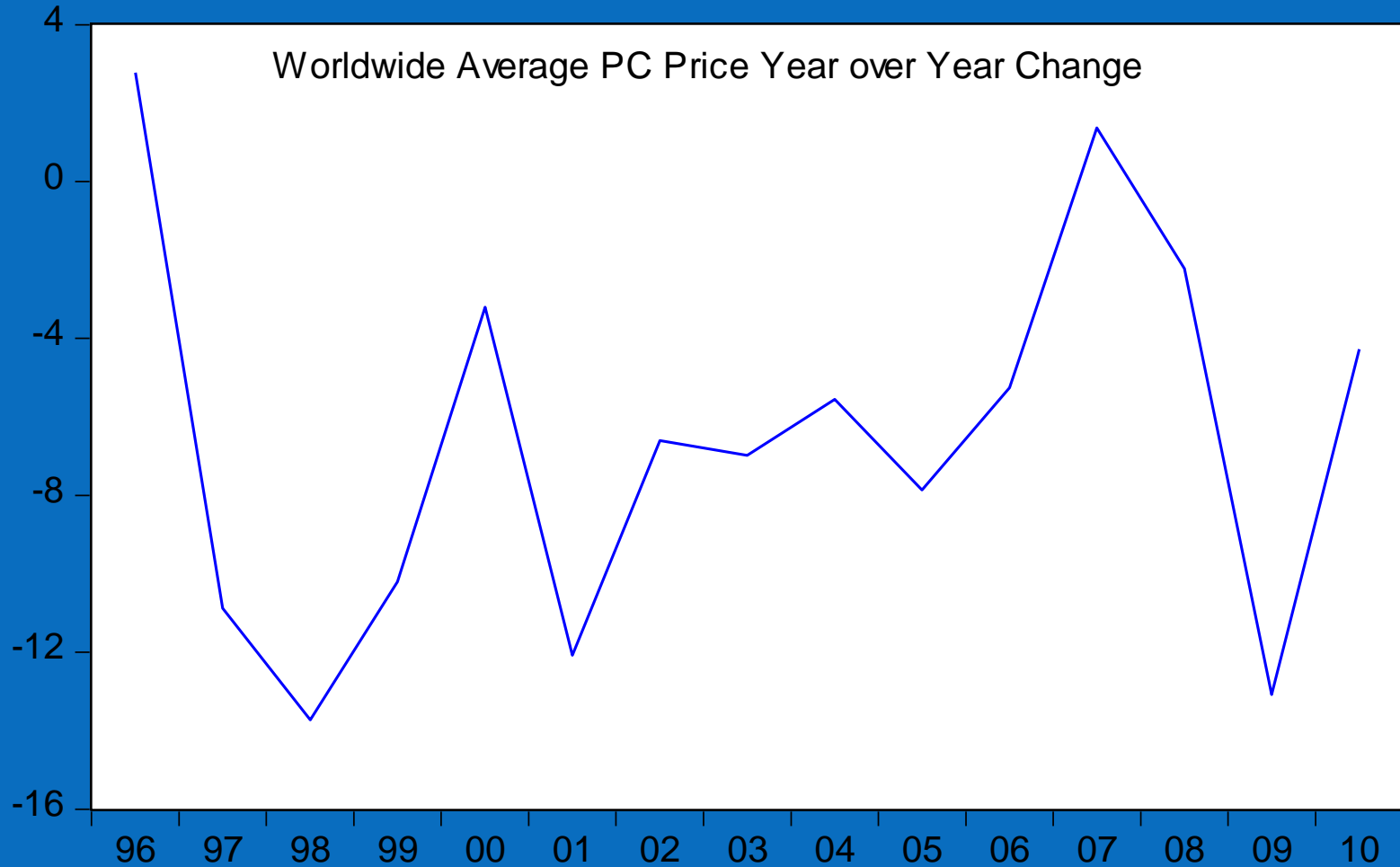
# PC \$ Sales in Great Recession



- PC dollar sales held up well considering the fall in nominal GDP.



# Worldwide PC Prices Fall Over Time



- Price decrease in 2009 similar to decreases in Asian crisis and 2001 recession but quantity sold declined less.

# Falling Prices, Rising Incomes

## Weeks of Average Income to Buy Average PC by Region

YEAR	China	East	Emerg	Estab	India	Japan	Latin America	MidEast,	North America	West Europe	World
		Europe	APAC	APAC				Turkey, Africa			
1995	112.4	25.4	95.2	6.7	269.8	2.6	28.8	43.9	3.9	4.0	19.1
1996	83.8	33.1	94.3	6.5	190.2	3.3	27.9	55.9	3.8	4.0	19.3
1997	67.3	27.9	83.7	6.0	147.2	3.0	25.1	61.4	3.2	4.0	17.5
1998	53.2	28.2	78.8	5.1	110.8	2.9	21.1	49.7	2.6	3.7	15.4
1999	46.5	26.2	63.4	4.5	100.2	2.7	15.7	52.7	2.1	3.5	13.5
2000	43.0	21.3	57.1	3.8	95.2	2.3	13.6	48.0	2.0	3.8	12.8
2001	33.8	18.7	58.4	3.5	80.0	2.1	11.5	45.7	1.8	3.5	11.5
2002	25.6	15.1	49.6	3.0	72.0	2.1	11.4	37.9	1.7	3.1	10.4
2003	20.4	11.8	40.6	2.6	61.2	2.0	10.0	28.5	1.5	2.5	8.8
2004	16.1	10.0	32.1	2.3	49.6	1.8	7.6	25.4	1.3	2.1	7.4
2005	12.7	8.5	29.2	2.1	39.2	1.6	5.7	21.5	1.1	1.9	6.4
2006	11.1	7.2	25.6	2.0	36.8	1.5	4.9	18.8	1.0	1.6	5.7
2007	9.8	6.4	23.0	1.9	32.8	1.4	4.6	16.5	1.0	1.4	5.2
2008	8.2	5.2	20.7	1.8	30.2	1.3	4.8	13.4	0.9	1.2	4.7
2009	7.1	5.7	18.3	1.7	28.6	1.2	5.1	15.1	0.8	1.1	4.3



# Major Themes for PC Demand

- Falling nominal prices and constant quality improvements due to Moore's Law
- Greater utility from PCs due to Internet and expanding "cloud"
- Rising incomes and spreading broadband drive PC penetration
- Proliferation of new devices and usage models creates demand for a "compute continuum" driving PC density
- Spreading IT should increase productivity everywhere
- For some time to come, PC demand should grow robustly enough to offset economic downturns and lead recoveries.