

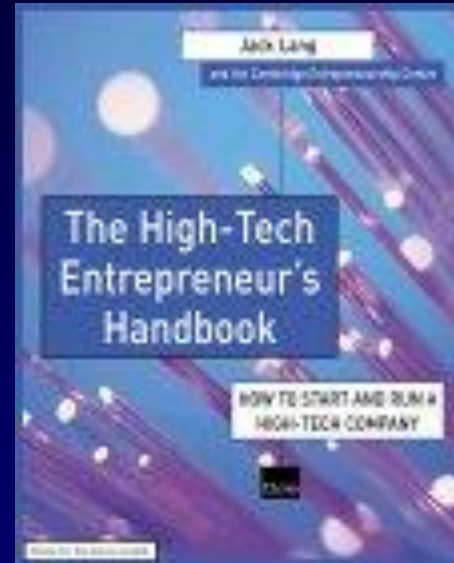
Rough Guide to Entrepreneurship

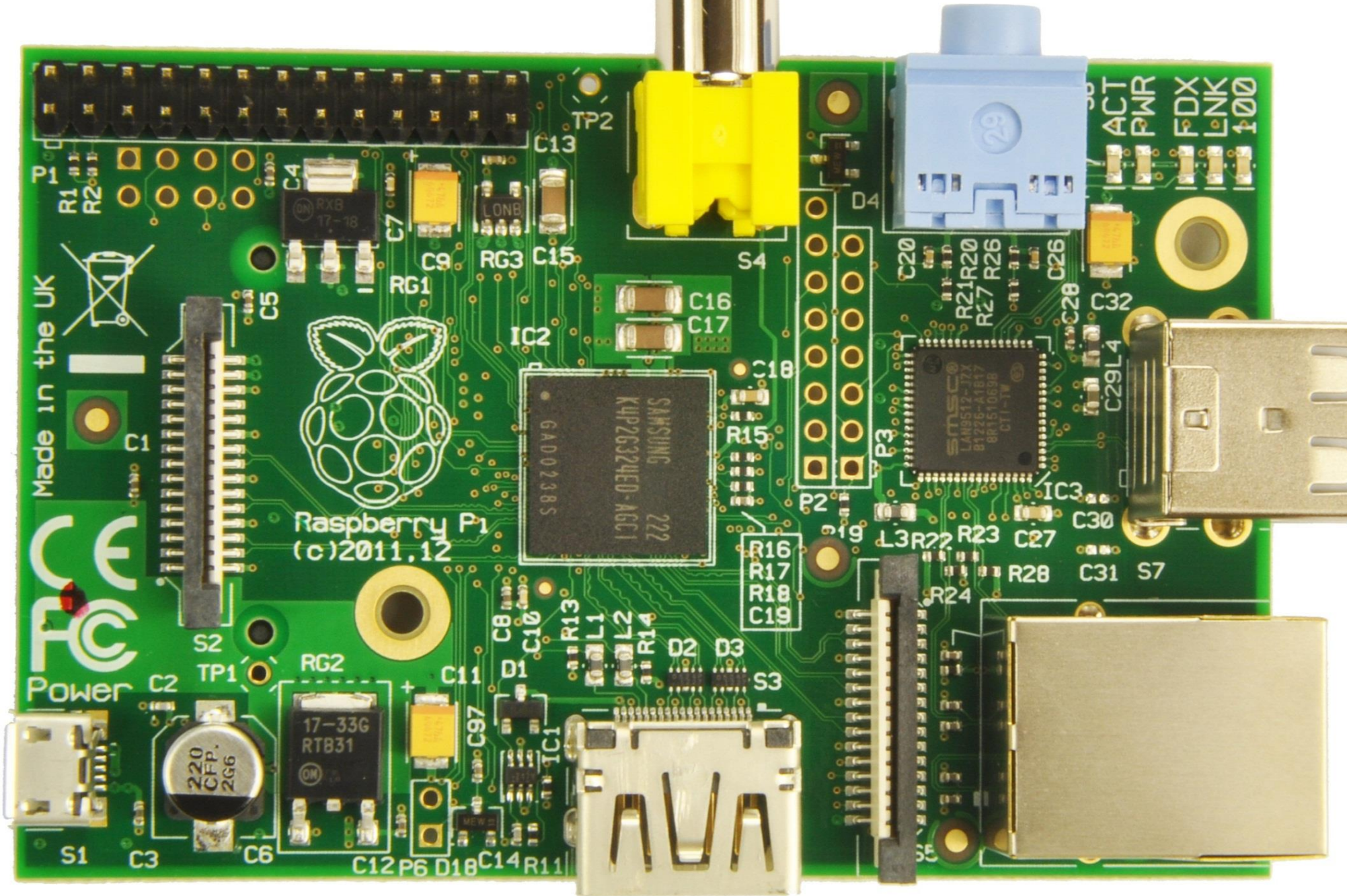
Jack Lang
jack@lang.net

Reading list

**The High-tech
Entrepreneur's
Handbook**
Jack Lang

**Paperback - 224
pages (2
November, 2001)
FT.COM; ISBN:
0273656155**





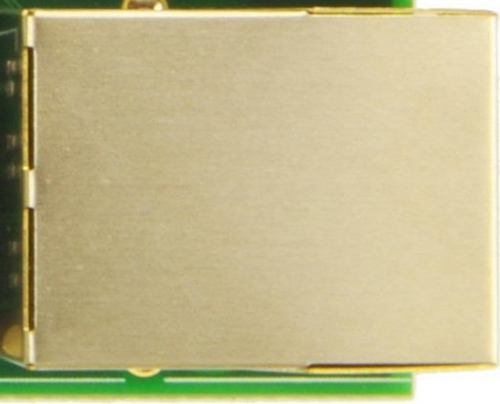
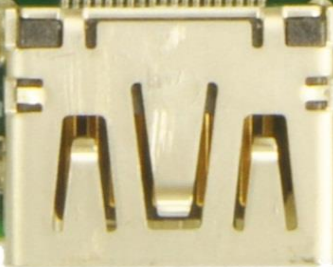
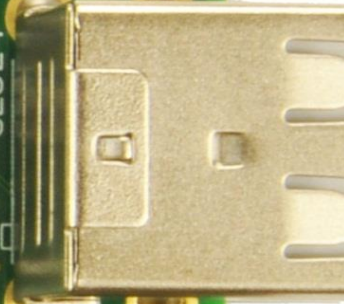
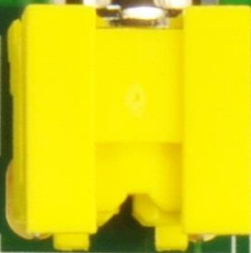
Made in the UK



Power



Raspberry Pi
(c)2011,12



ACT PWR FDX LNK 100

TP2

TP1

IC2

IC3

IC1

L1

L2

L3

R13

R14

R15

R16

R17

R18

R19

R20

R21

R22

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R24

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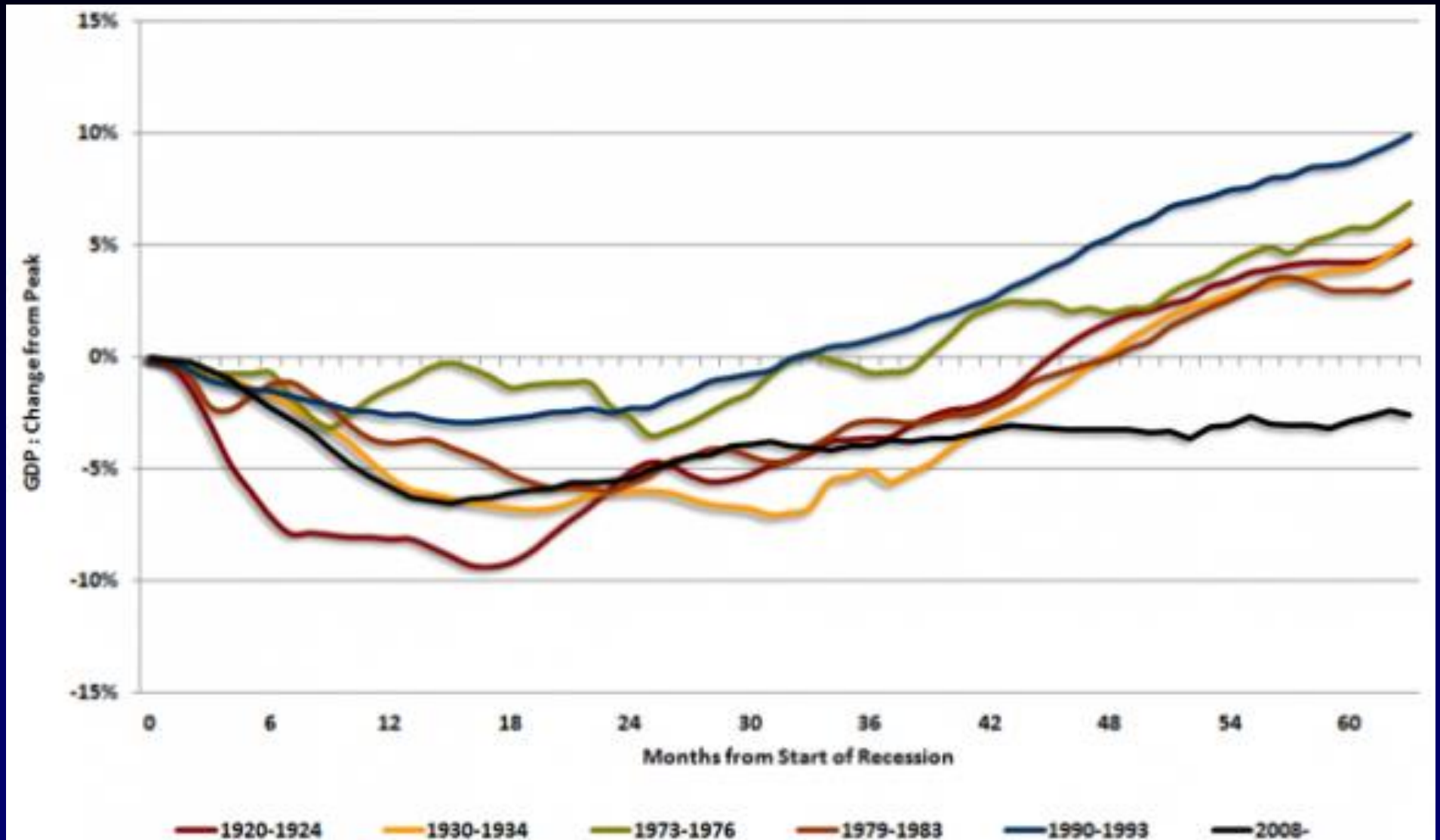
<



R.I.P.

GOOD
TIMES

Historic Depressions



Source: www.niesr.ac.uk accessed 20/04./13

See also Reinhart and Rogoff "The Aftermath of Financial Crises"

<http://www.economics.harvard.edu/faculty/rogooff/files/Aftermath.pdf>

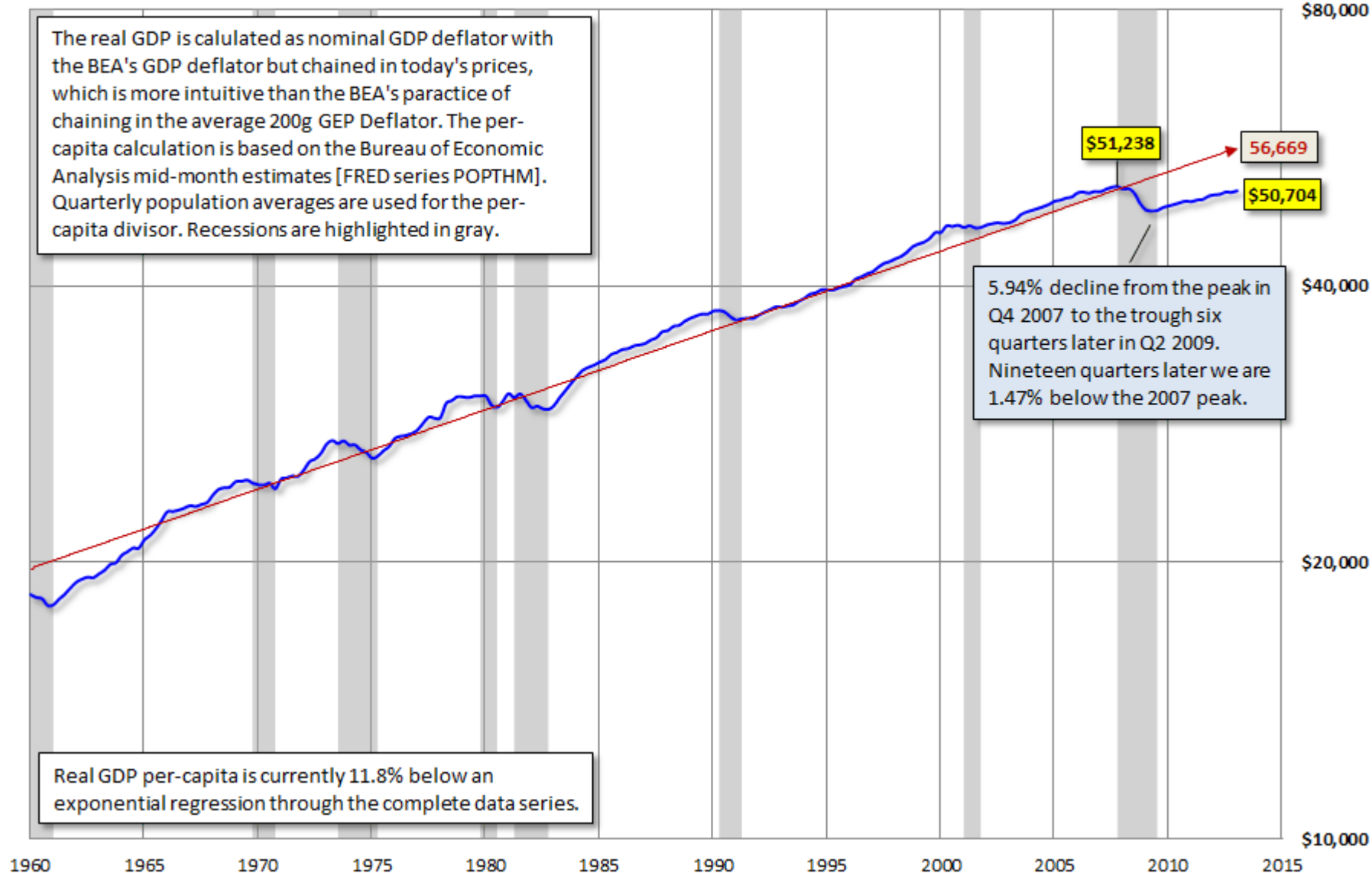
Data Through 2013
Q1 Advance Estimate

Real GDP Per Capita With an Exponential Regression Trendline

dshort.com
April 2013

Log Scale
\$80,000

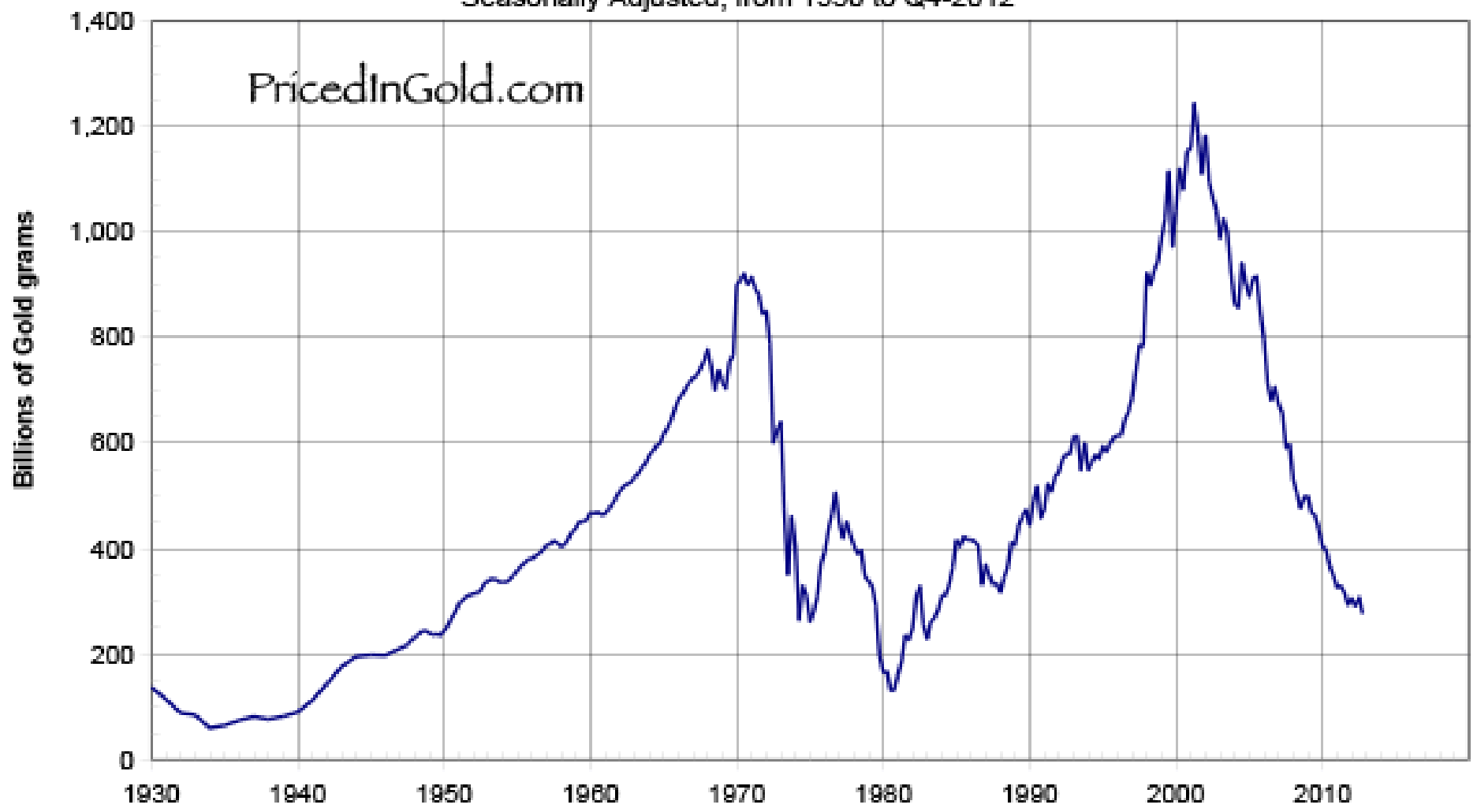
The real GDP is calculated as nominal GDP deflator with the BEA's GDP deflator but chained in today's prices, which is more intuitive than the BEA's practice of chaining in the average 200g GEP Deflator. The per-capita calculation is based on the Bureau of Economic Analysis mid-month estimates [FRED series POPTHM]. Quarterly population averages are used for the per-capita divisor. Recessions are highlighted in gray.



1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015

\$10,000

US GDP in Billions of Gold grams
Seasonally Adjusted, from 1930 to Q4-2012



China GDP Growth



Source: National Bureau of Statistics

scottgrannis.blogspot.com

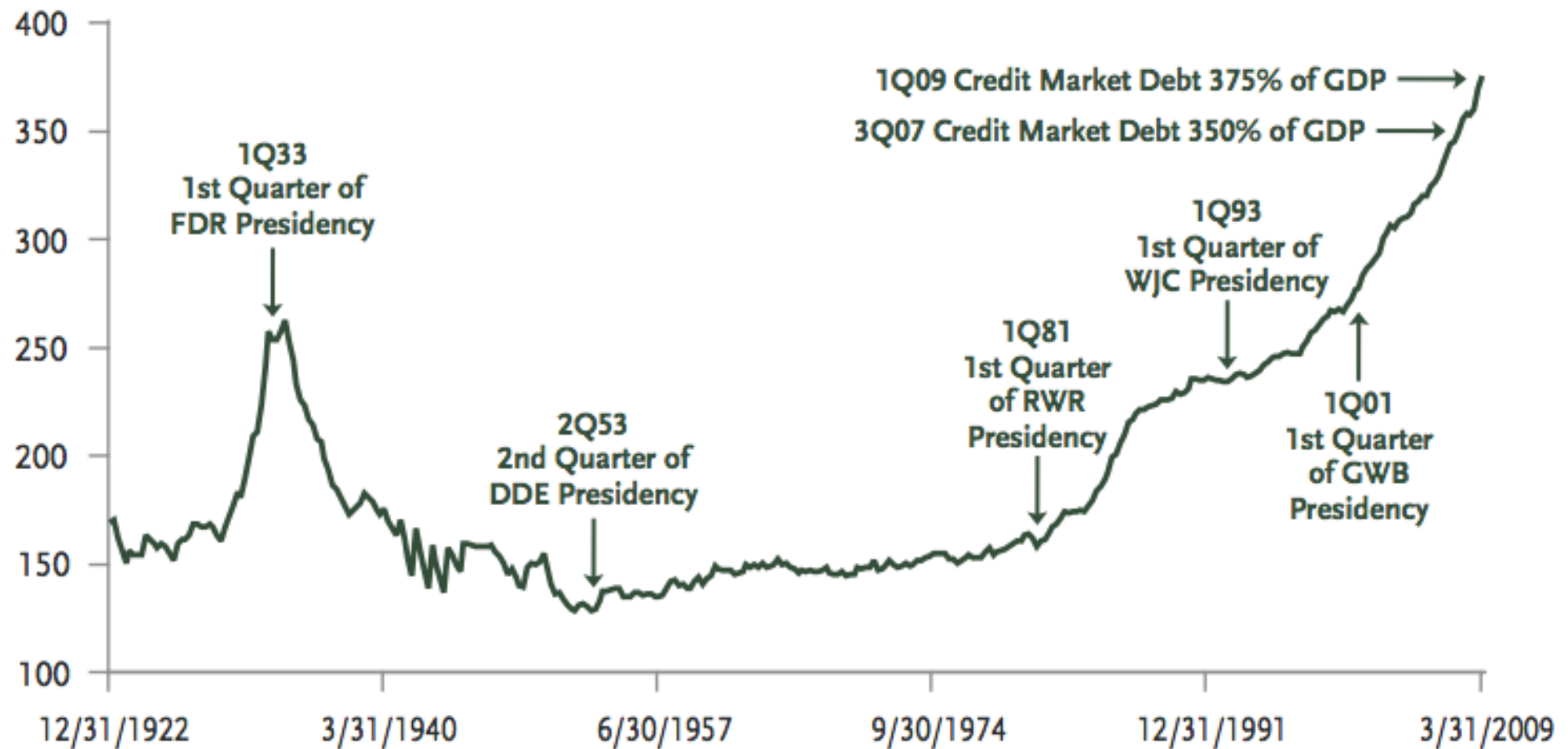
Its not getting better

Growth fragile, as underlying imbalances remain

- **Cycle not complete until 2014 or later**
- **Real value halved**
 - **Bargains**
- **Bank defaults -> Government defaults (PIIGS and BRICs)**
- **Insurance and pension scheme defaults**
 - **No money for VCs (LPs default)**
 - **No exit routes for equity investments**
- **Social unrest, rise of dictators....**

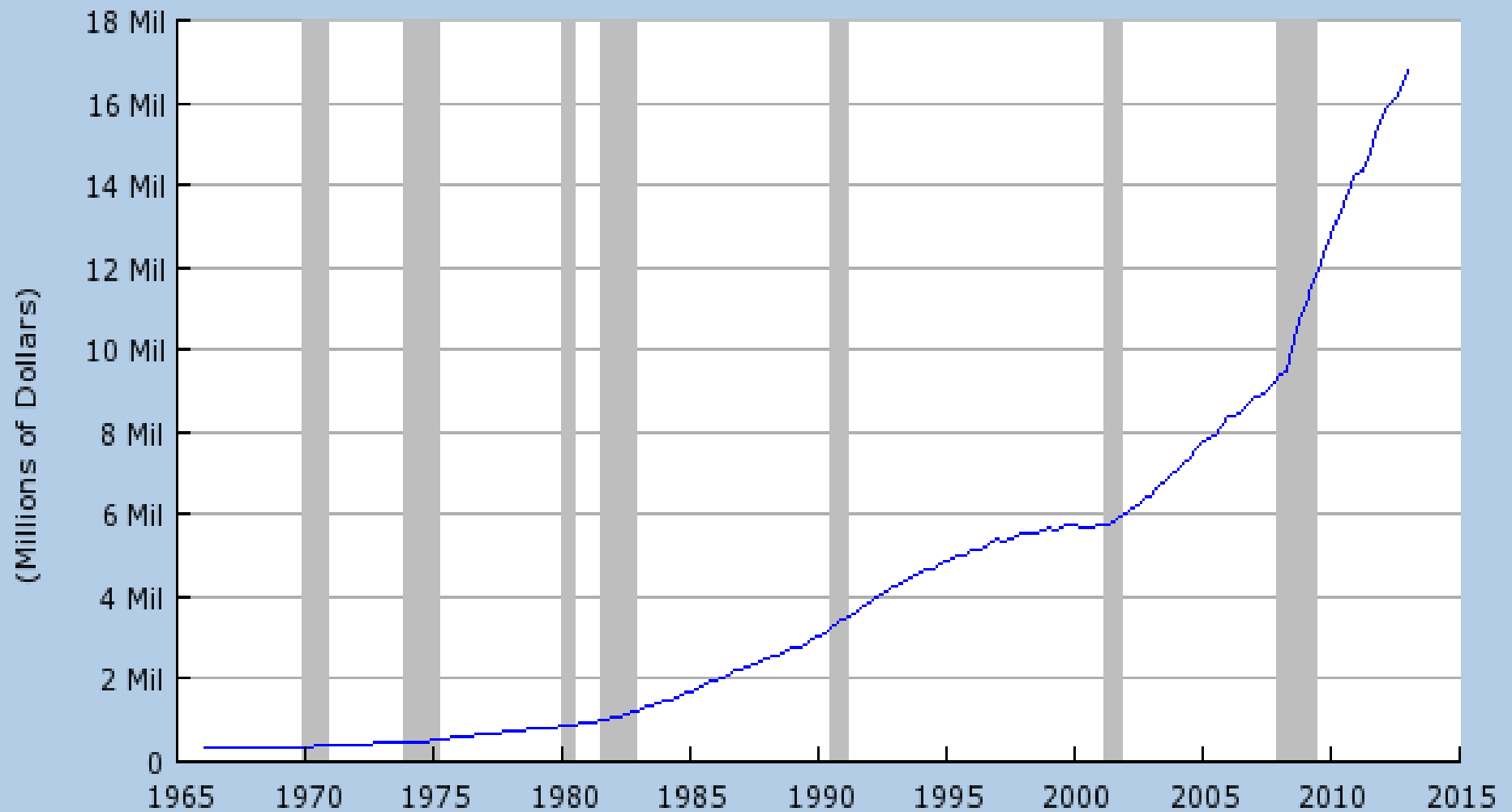
The scale of credit in the US is hard to take in ... \$49 trillion 3 1/2 US GDP

4Q 1922 – 1Q 2009



Federal Debt: Total Public Debt (GFDEBTN)

Source: U.S. Department of the Treasury: Financial Management Service



Shaded areas indicate US recessions.
2013 research.stlouisfed.org



US Civil War 1865 cost US\$ 165bn

US New Deal 1939 cost US\$ 500bn

The Marshall Plan 1947 cost US\$ 115bn

The Vietnam War 1975 cost US\$ 698bn

Iraq War 2003 – to date cost US\$ 1.2tr

**Bailouts announced to date 2008 – 2009
US\$ 9.5 trillion (including guarantees)**

All numbers inflation adjusted

Source: NY Times

Start with a standard Franklin - \$100 bill.

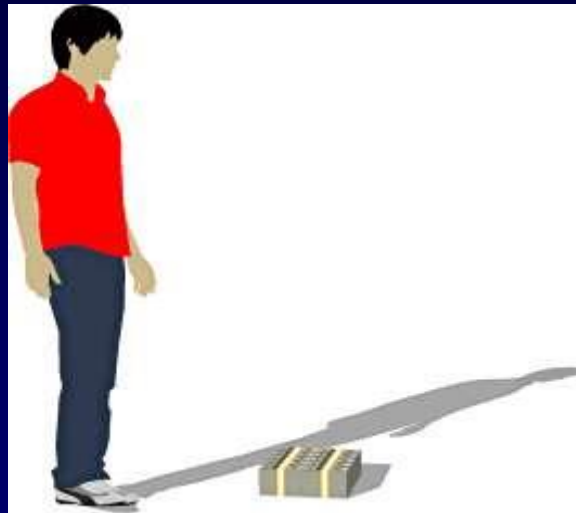


Get 100 of them in a nice pile – that's \$10,000.
It would comfortably fit into your jacket pocket.



Put 100 of those nice, comfortable \$10,000 wedges together and you have yourself a cool \$1,000,000.

You could hide that in a rucksack without any trouble at all.

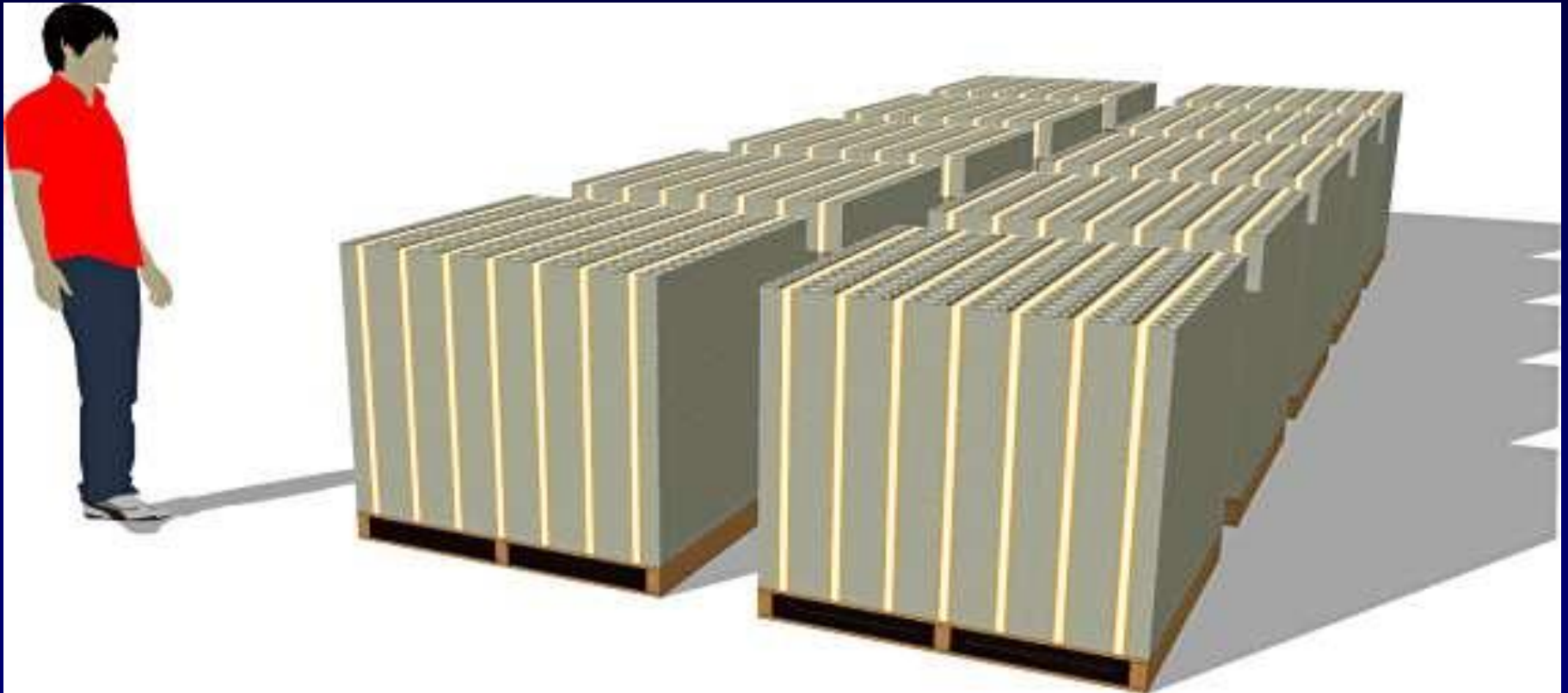


This is what \$100,000,000 looks like.

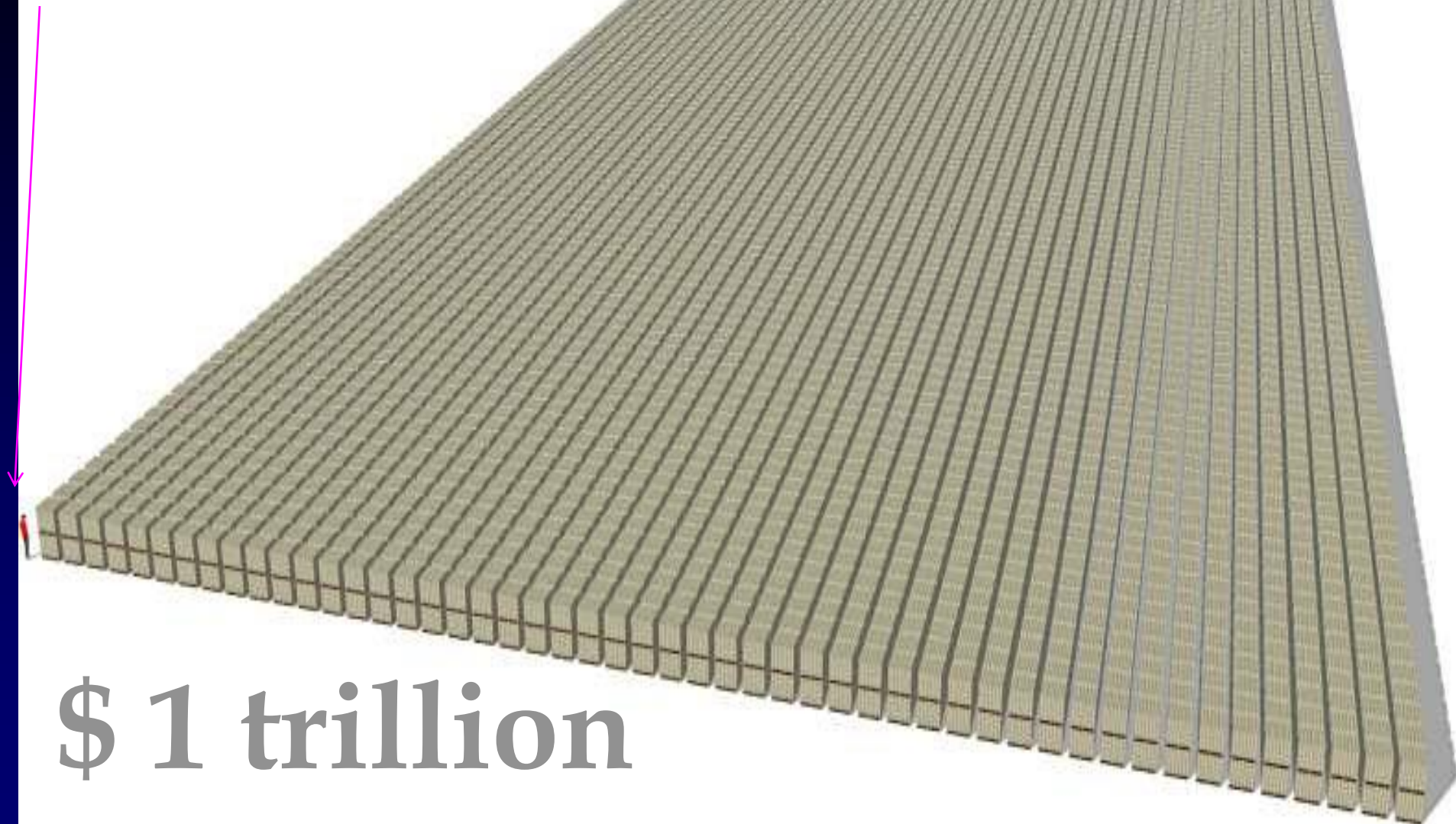
Now we are getting close to what we can all see is a real pile of dough. At least you need a pallet to get it about and a fork lift truck.



**\$1bn is a respectable amount by any standards.
This is what it would look like in \$100 notes.
Can you now imagine what \$1 trillion looks like ?**



Can you see yourself?



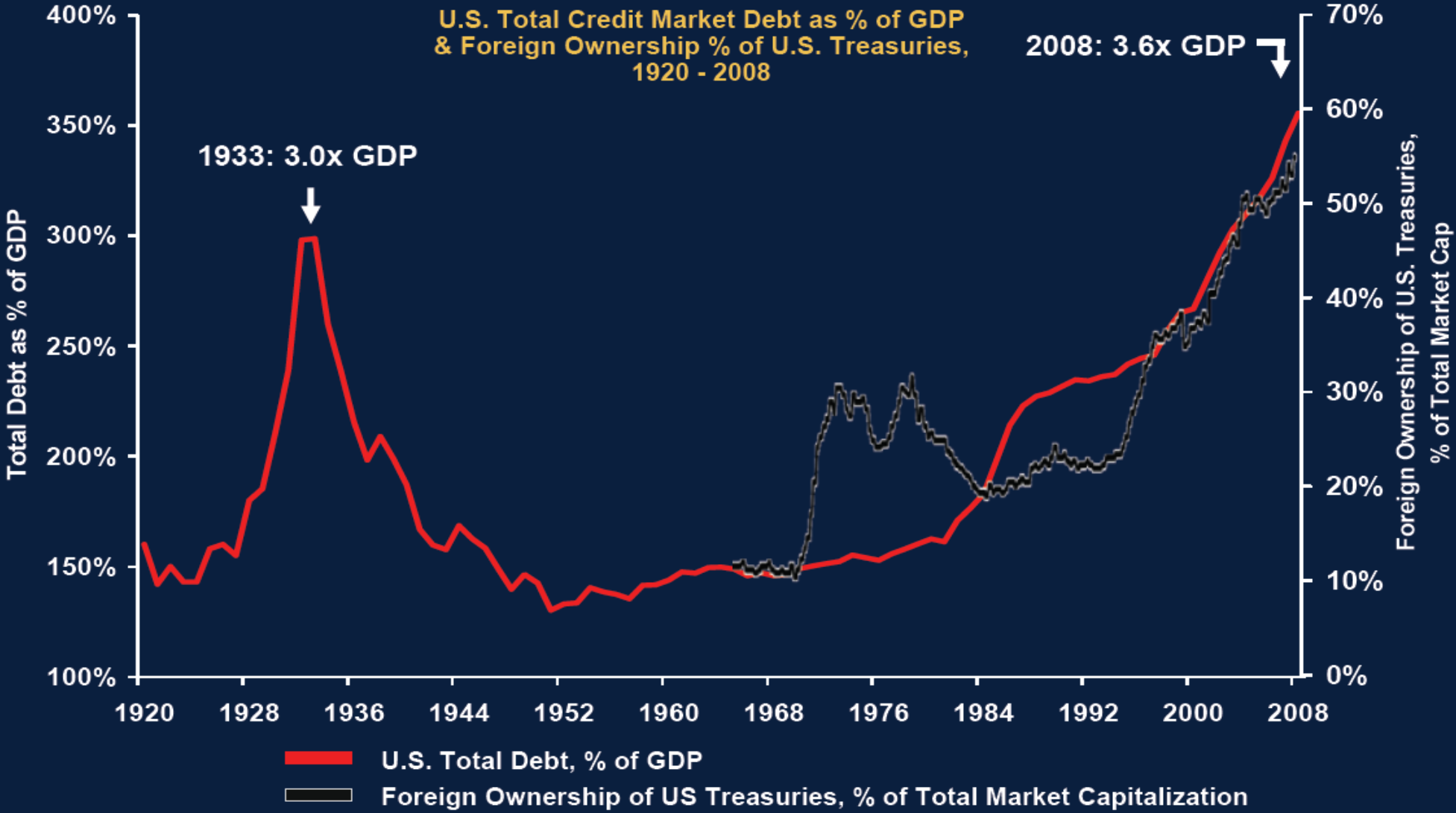
\$ 1 trillion

If you spent US\$1,000,000 each day from the day Jesus Christ was born until today, you would only have spent about US\$710bn, almost 30% less than the magic US\$1 trillion BUT the same as the TARP!



Explosion in overall debt and huge dependence on foreign money inflows into the US to pay for it.

U.S. Total Credit Market Debt as % of GDP & Foreign Ownership % of U.S. Treasuries, 1920 - 2008



How will the debt be repaid?

- **Conquest (failed)**
- **Default (go bust)(reference currency)**
- **Deflation, then Inflation/Devaluation**
 - **Printing money (quantitative easing)**
- **Recovery needs either**
 - **Technological innovation such as low energy price**
 - **New financial engineering for new source of money**

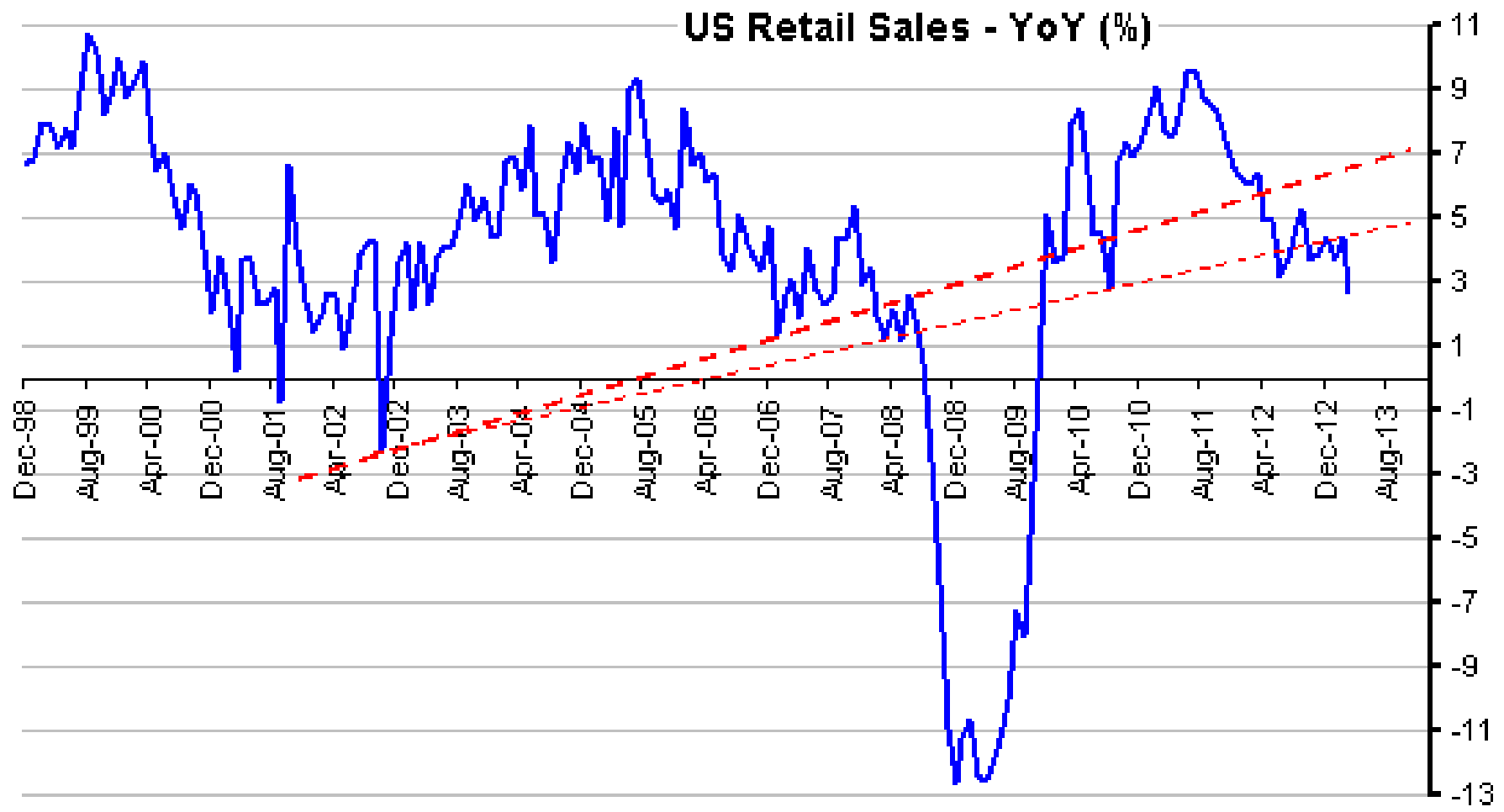
Stagflation

- Classical shock response (for e.g. 1971)
- Rapid inflation
- No increase in real output
- Economic/Government response
 - High interest (to control inflation)
 - Low taxes (to stimulate production)
 - Grants
- BAD
 - Savings, wealth, pensions
 - Current deficit; few projects
 - Weak dollar – fewer imports

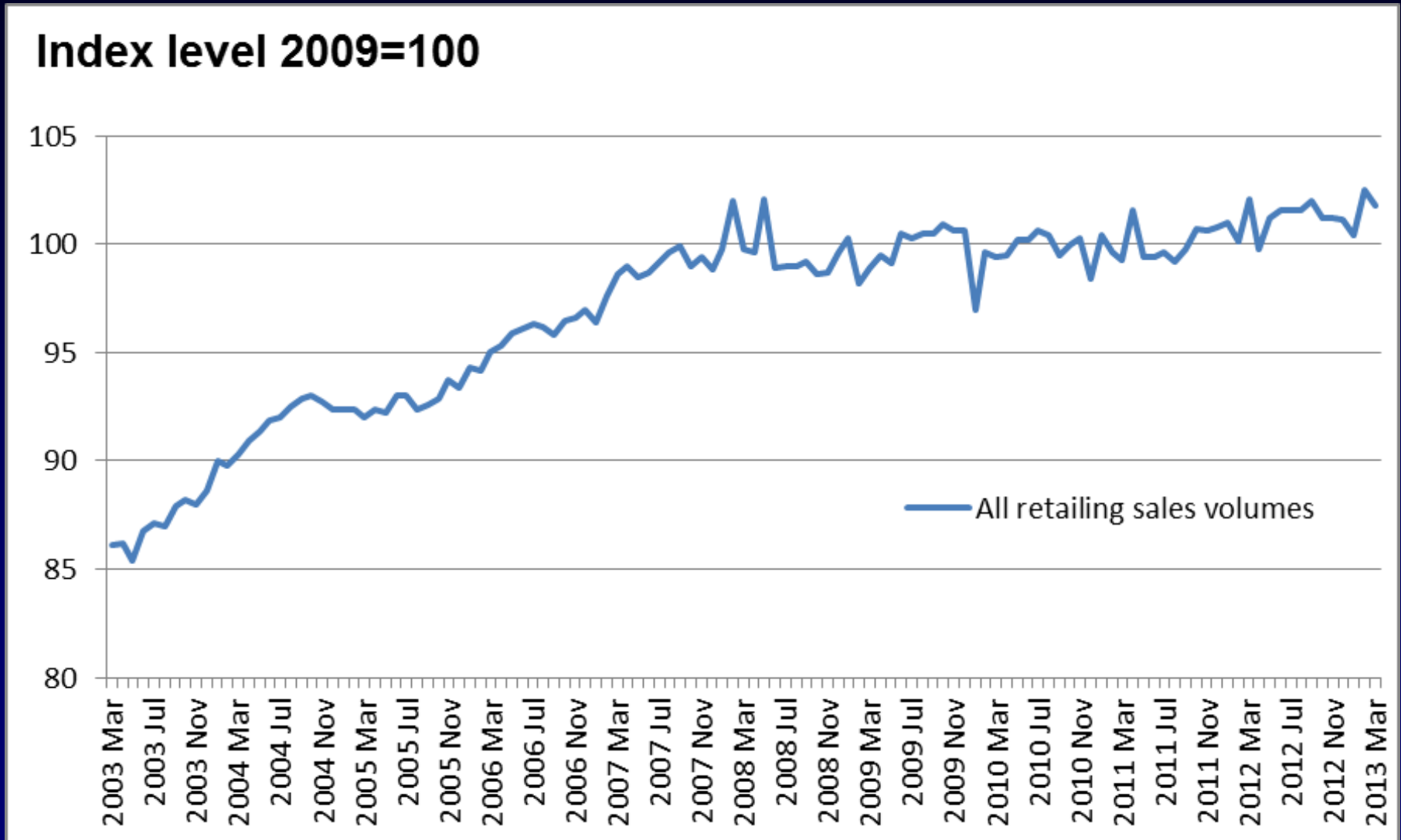
EU Retail Sales Y/Y



US Core Retail Sales

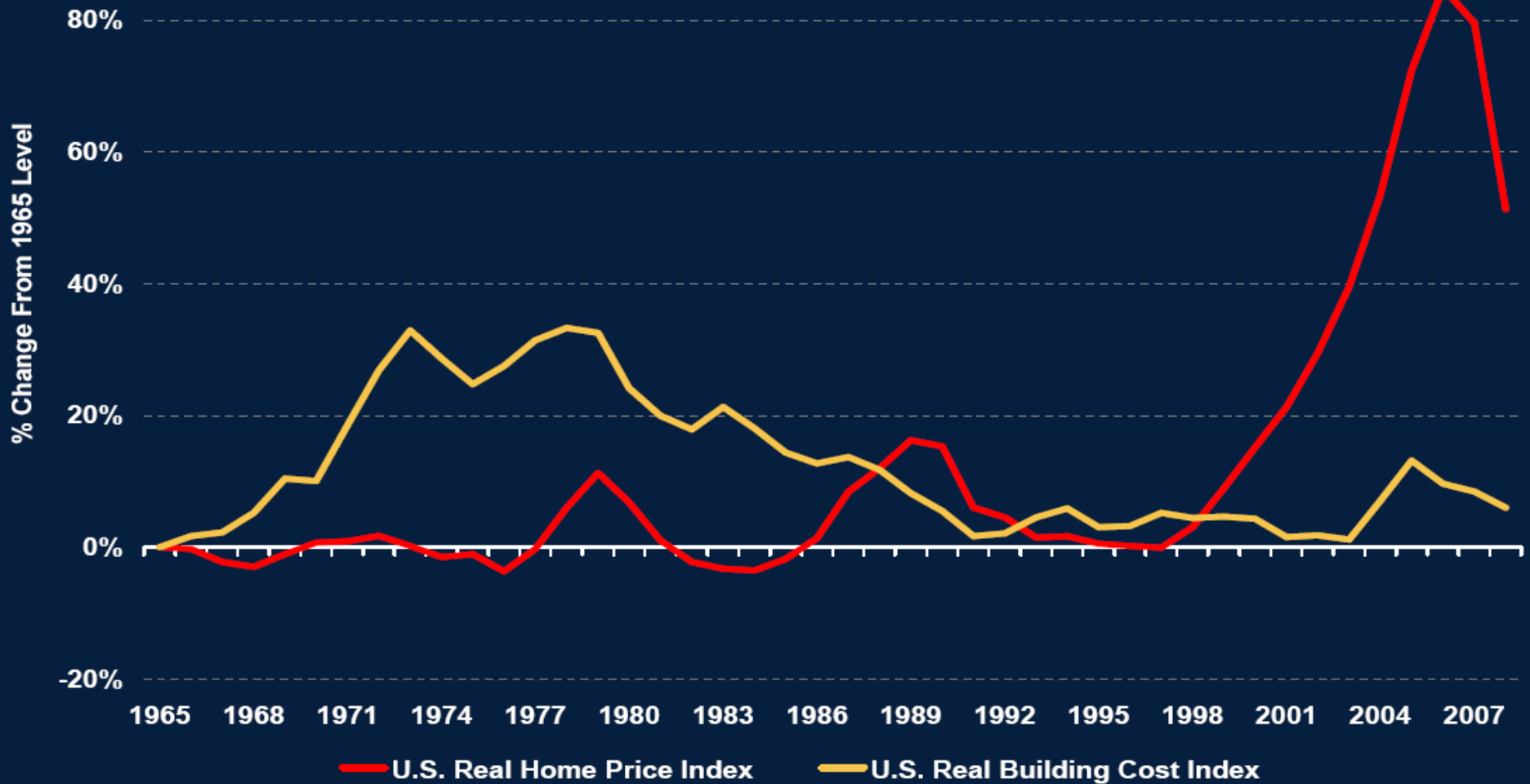


UK Retail Sales Volume



House prices have risen much faster than the cost of building new ones

USA Real Home Price & Building Cost Indexes, % Change 1965 - 2008



Shiller's Irrational Exuberance

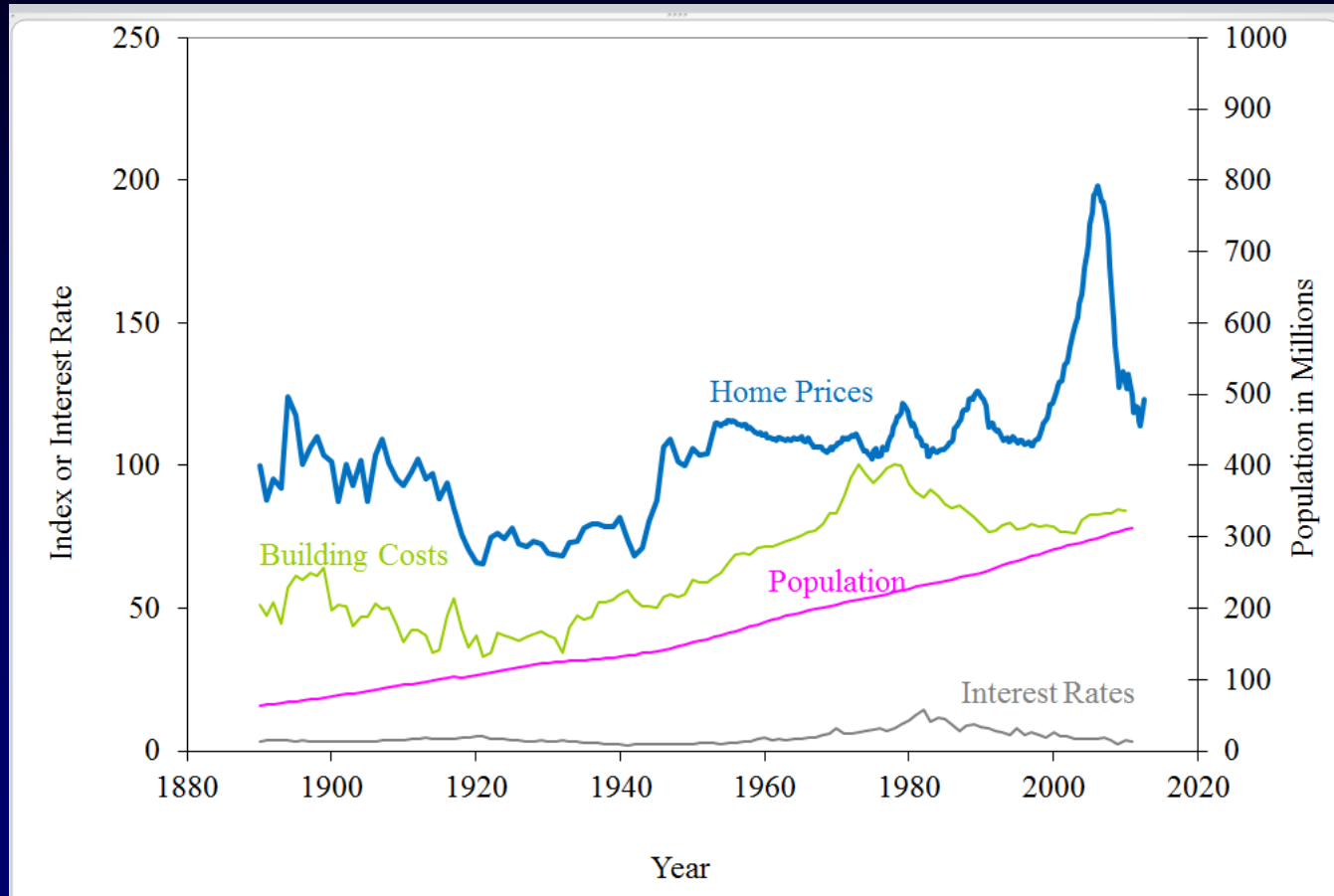


Figure 2.1 in Robert J. Shiller, *Irrational Exuberance*, 2nd. Edition, Princeton University Press, 2005, 2009, Broadway Books 2006, also *Subprime Solution*, 2008, as updated by author

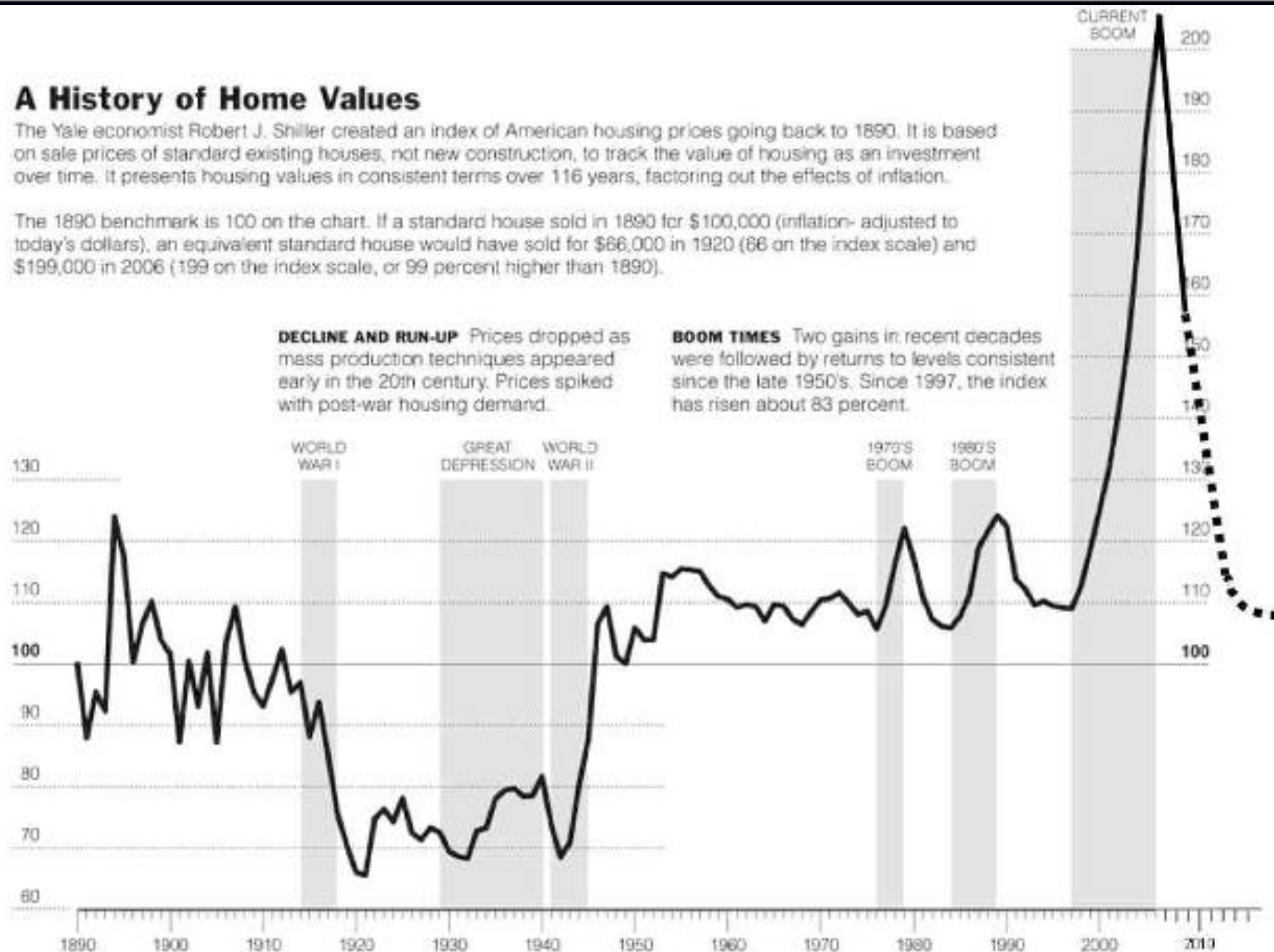
A History of Home Values

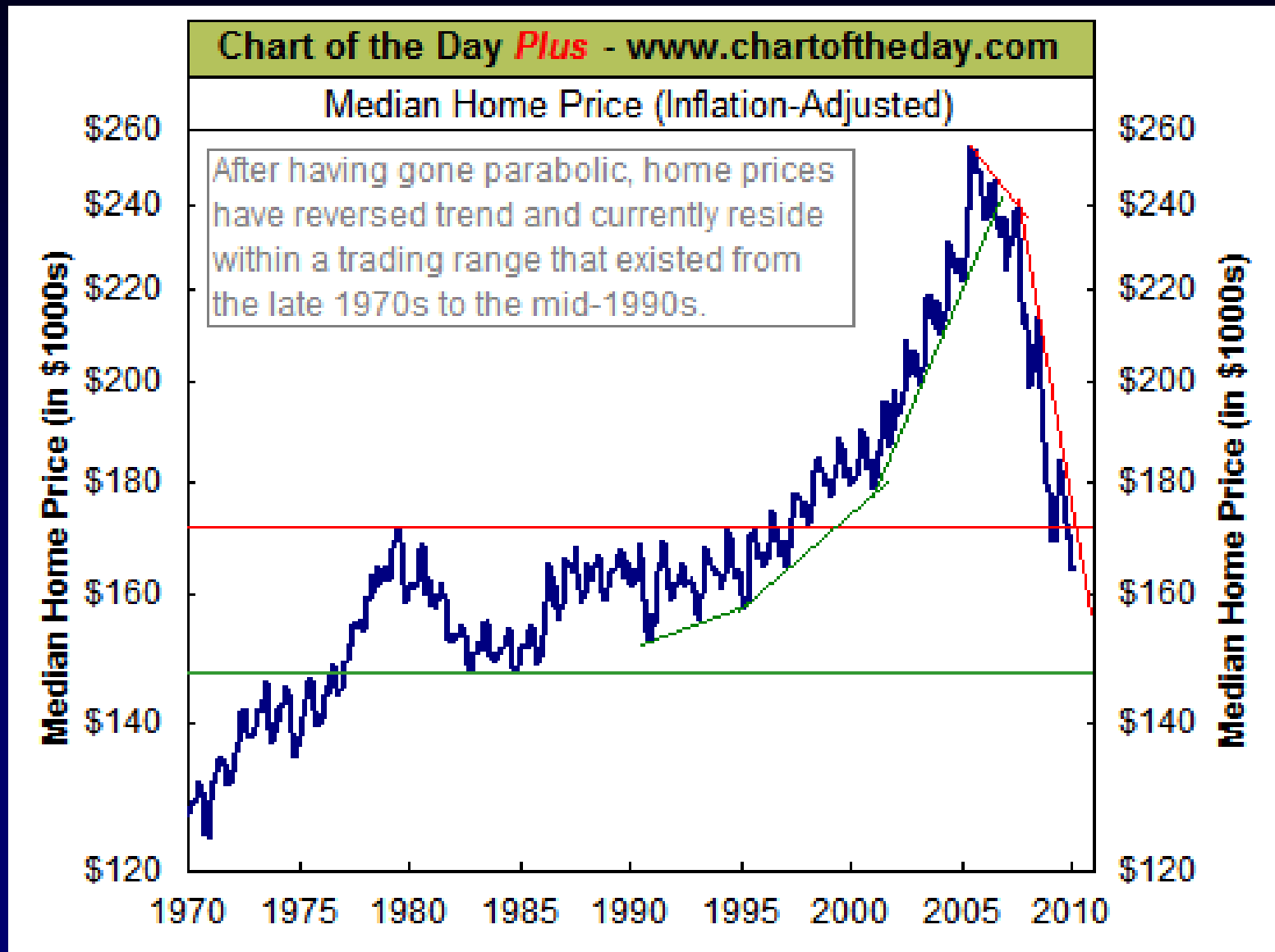
The Yale economist Robert J. Shiller created an index of American housing prices going back to 1890. It is based on sale prices of standard existing houses, not new construction, to track the value of housing as an investment over time. It presents housing values in consistent terms over 116 years, factoring out the effects of inflation.

The 1890 benchmark is 100 on the chart. If a standard house sold in 1890 for \$100,000 (inflation-adjusted to today's dollars), an equivalent standard house would have sold for \$66,000 in 1920 (66 on the index scale) and \$199,000 in 2006 (199 on the index scale, or 99 percent higher than 1890).

DECLINE AND RUN-UP Prices dropped as mass production techniques appeared early in the 20th century. Prices spiked with post-war housing demand.

BOOM TIMES Two gains in recent decades were followed by returns to levels consistent since the late 1950's. Since 1997, the index has risen about 83 percent.



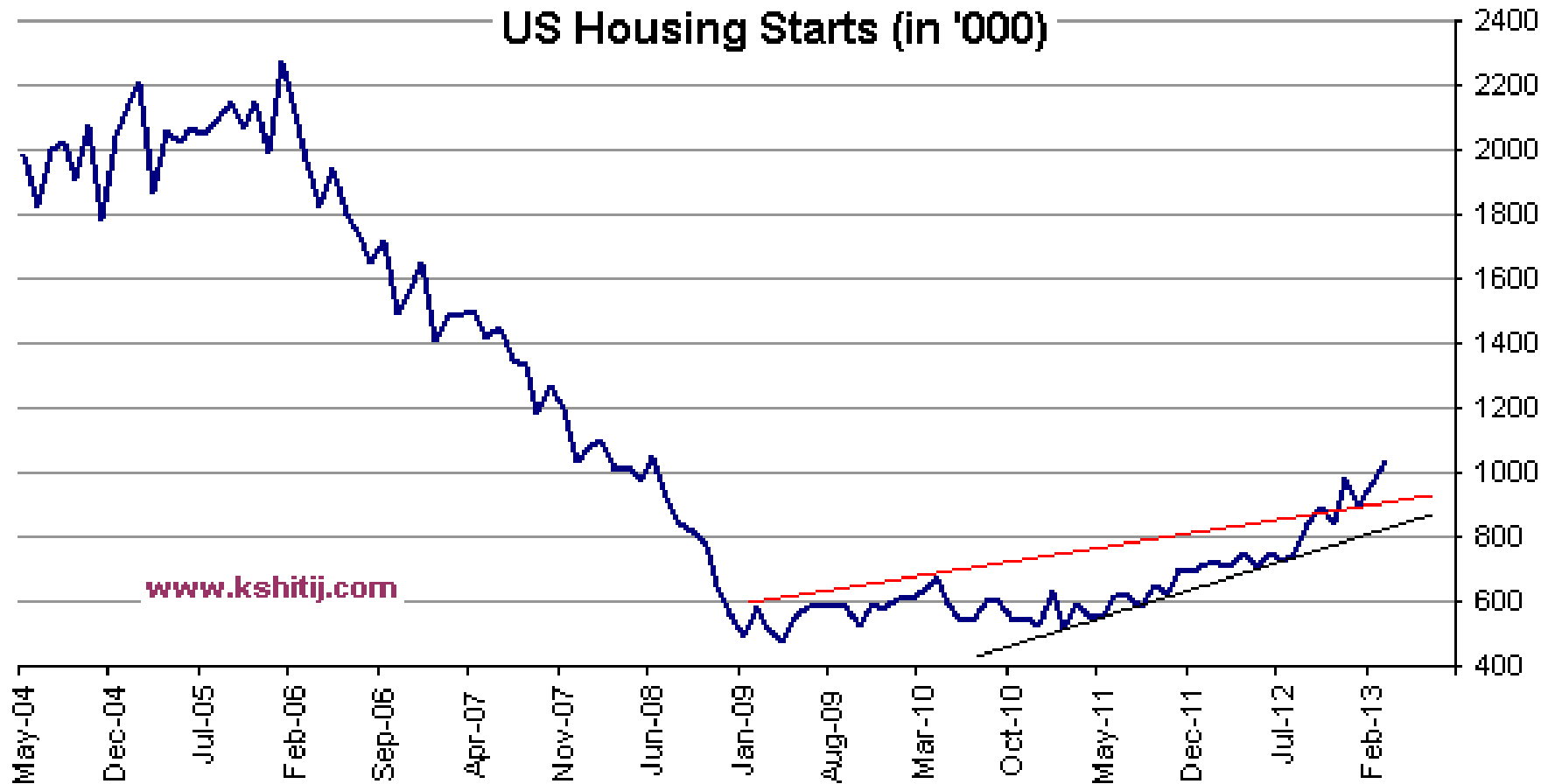


Average UK House Price in Ounces of Gold

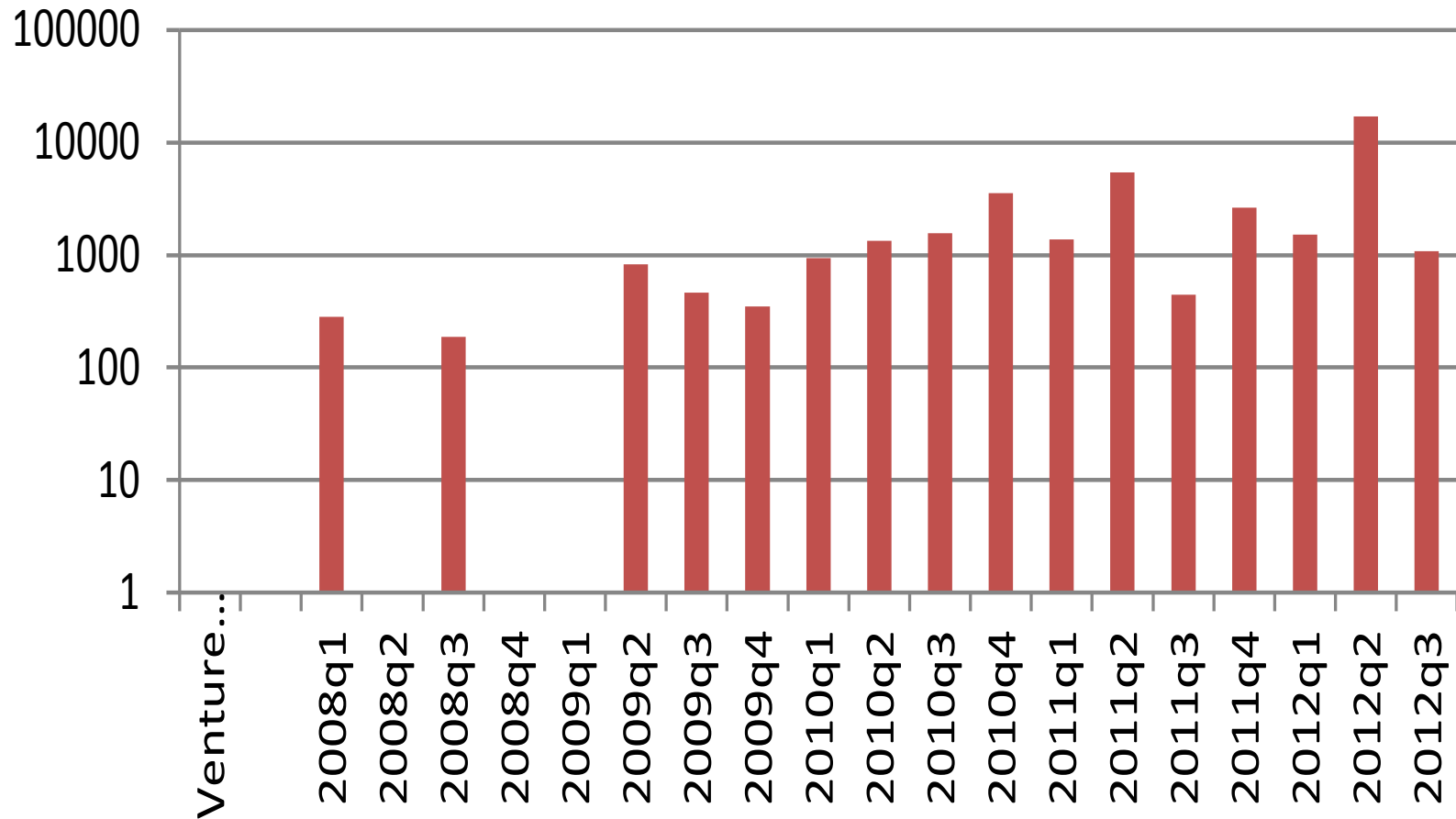


Min-/max-values in this chart might slightly vary over time due to data interpolation.

US Housing Starts

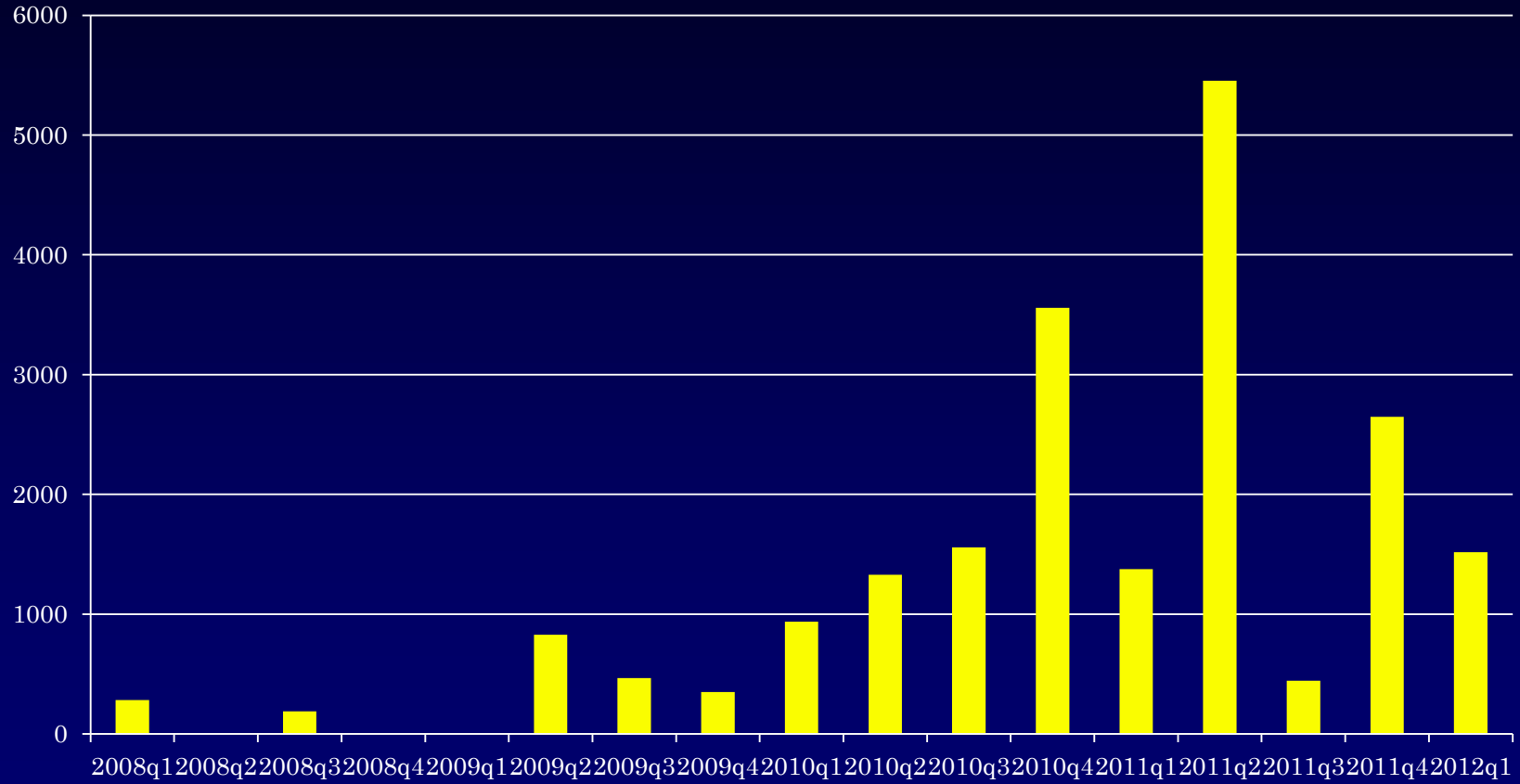


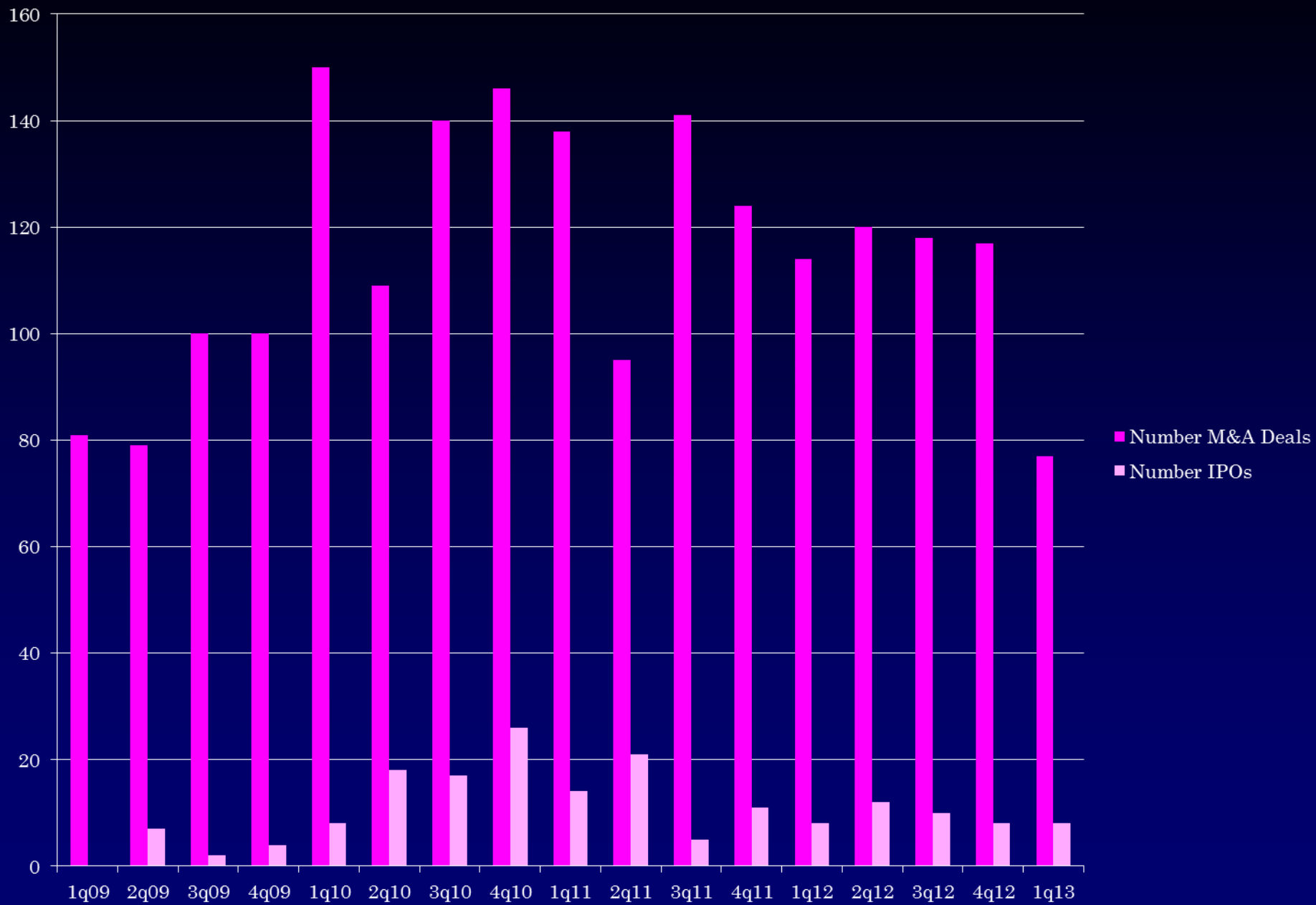
Venture backed liquidity events \$M (source NVCA)



Exits

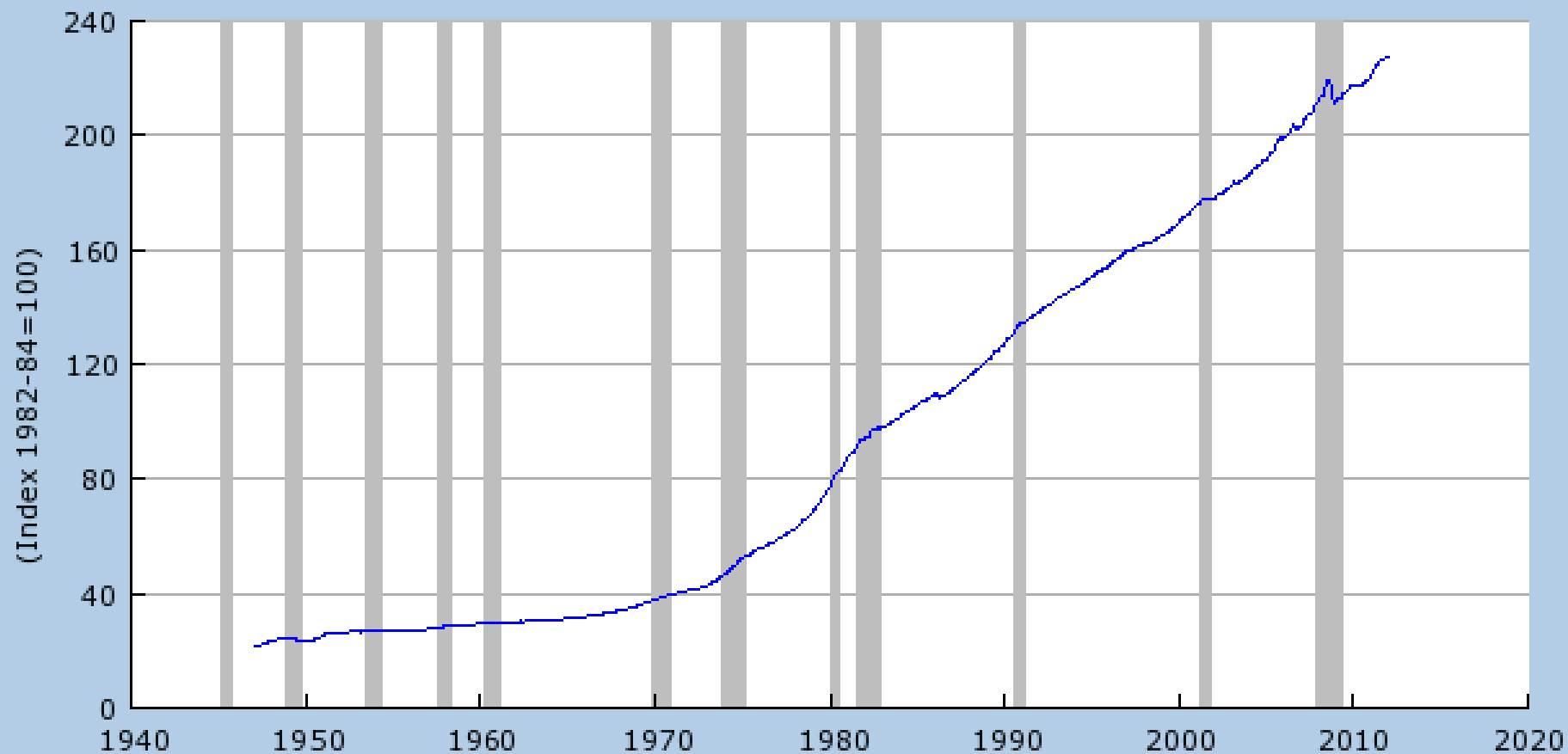
Venture backed liquidity events \$M (source nvca)





Consumer Price Index for All Urban Consumers: All Items (CPIAUCSL)

Source: U.S. Department of Labor: Bureau of Labor Statistics



Shaded areas indicate US recessions.
2012 research.stlouisfed.org



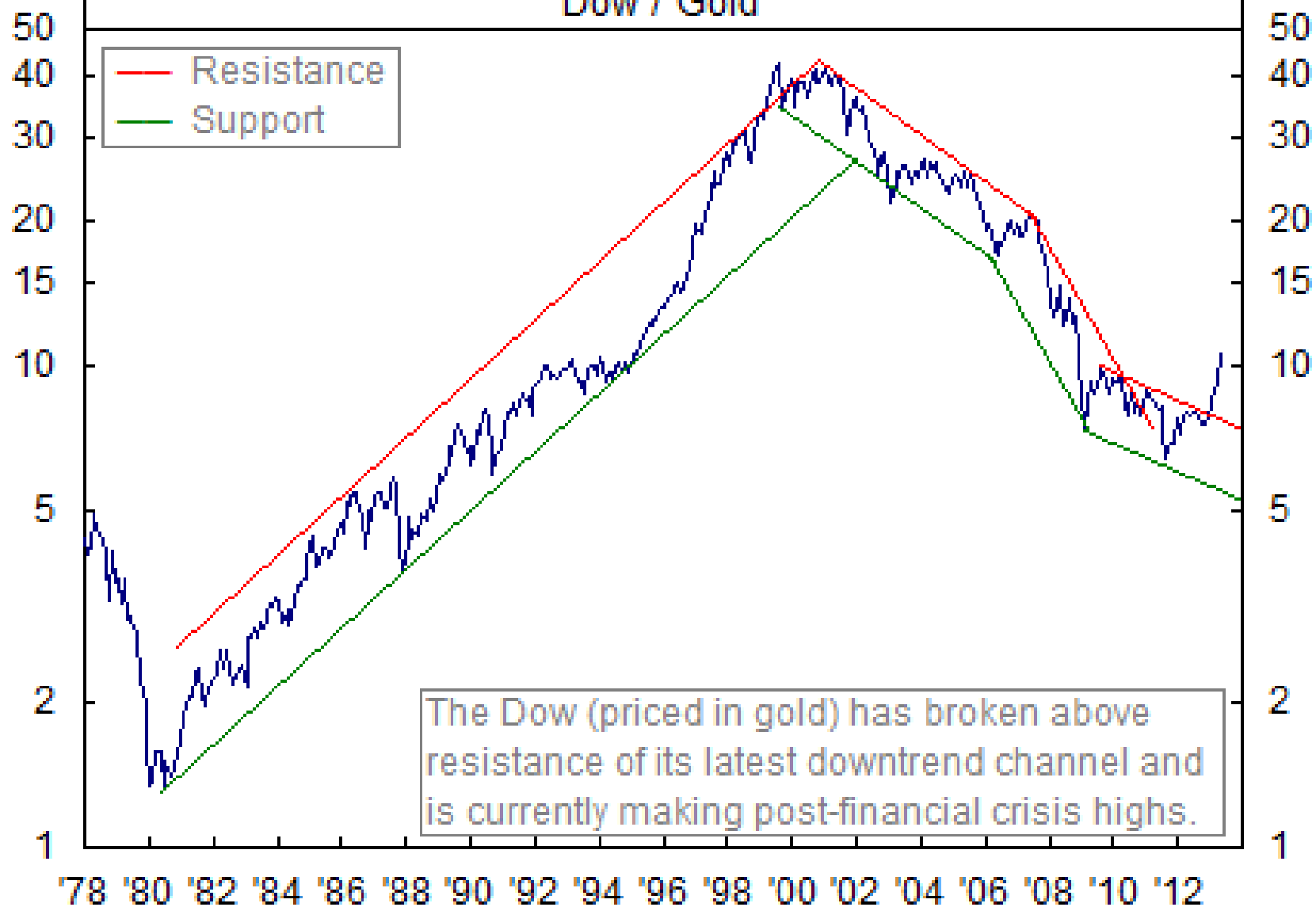
UK CPI: 12-month rate for the last 10 years: March 2003 to March 2013 CPI



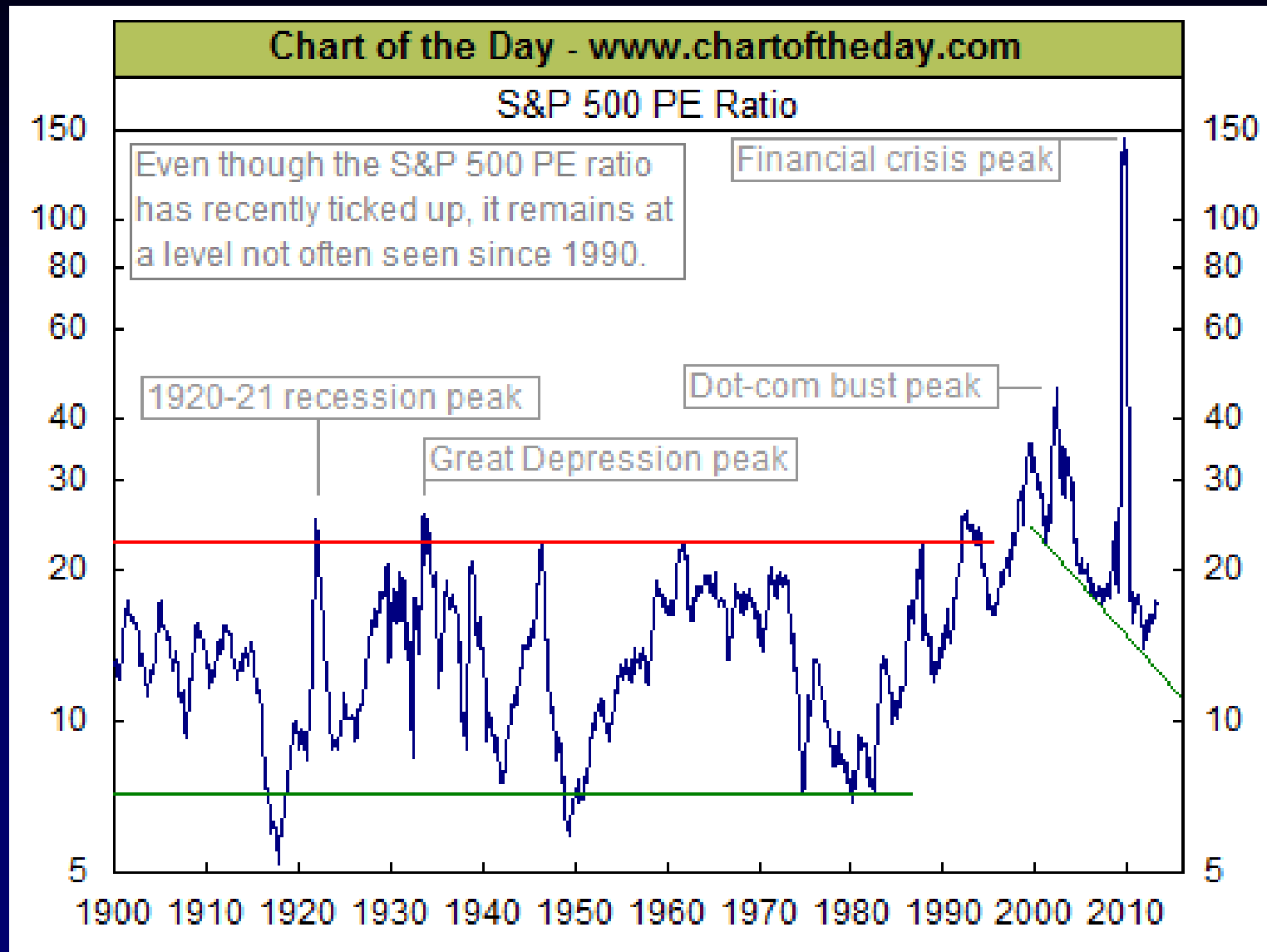
Source: <http://statistics.gov.uk>

Chart of the Day - www.chartoftheday.com

Dow / Gold



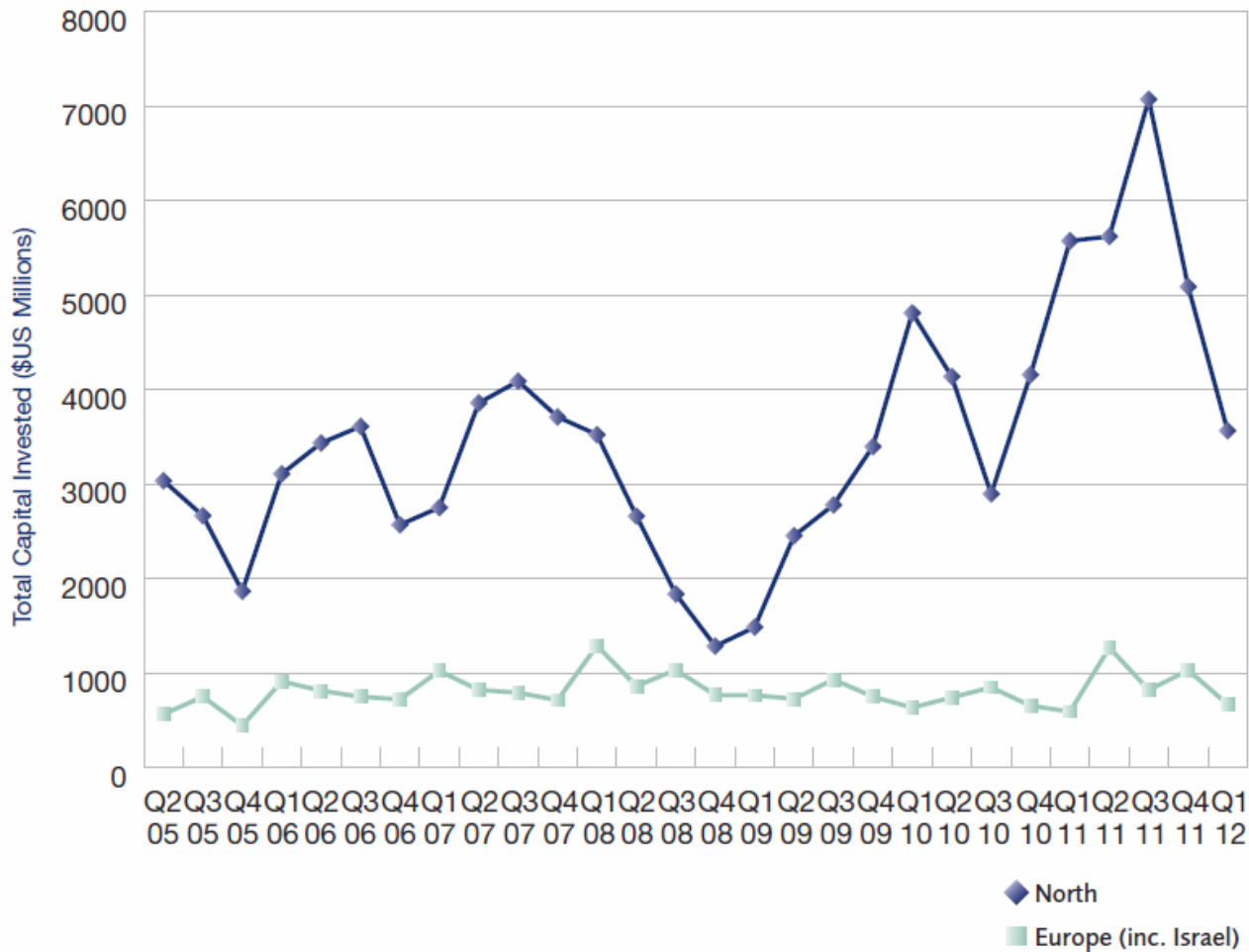
Earnings tank – bad news for pension funds



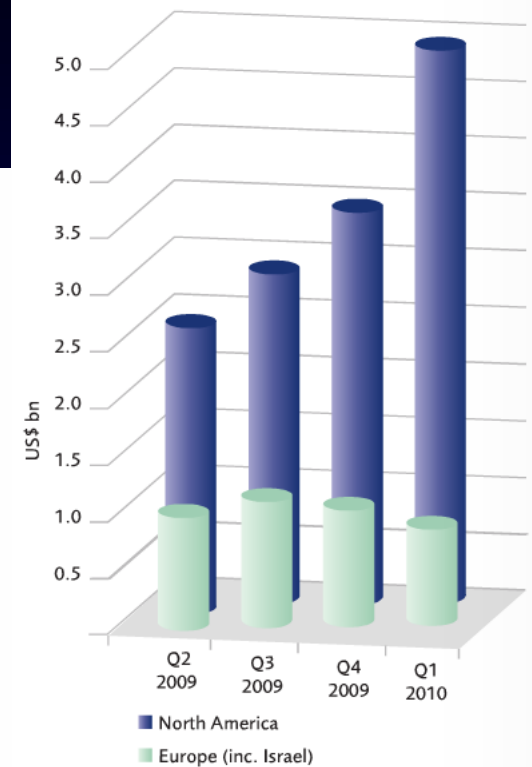
Green Shoots ?



Investment returns US but not EU

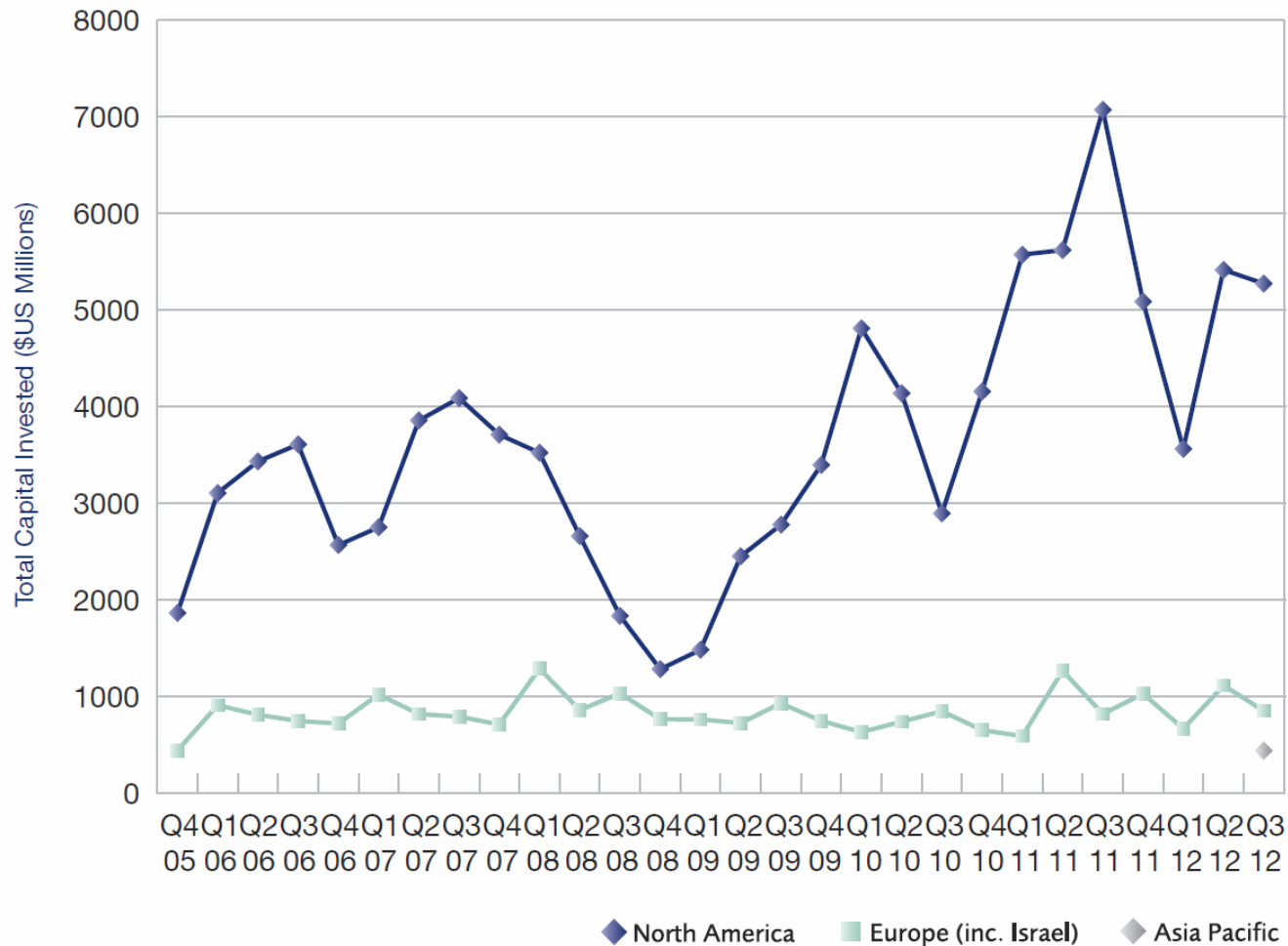


Total Tech Investment
Q2 2009 – Q1 2010



Source: [Calibre One Index](#)
collected 27 Mar 2012

Investment returns US but not EU



Source: [Calibre One Index](#)
collected 26 Dec 2012

BDI/Gold

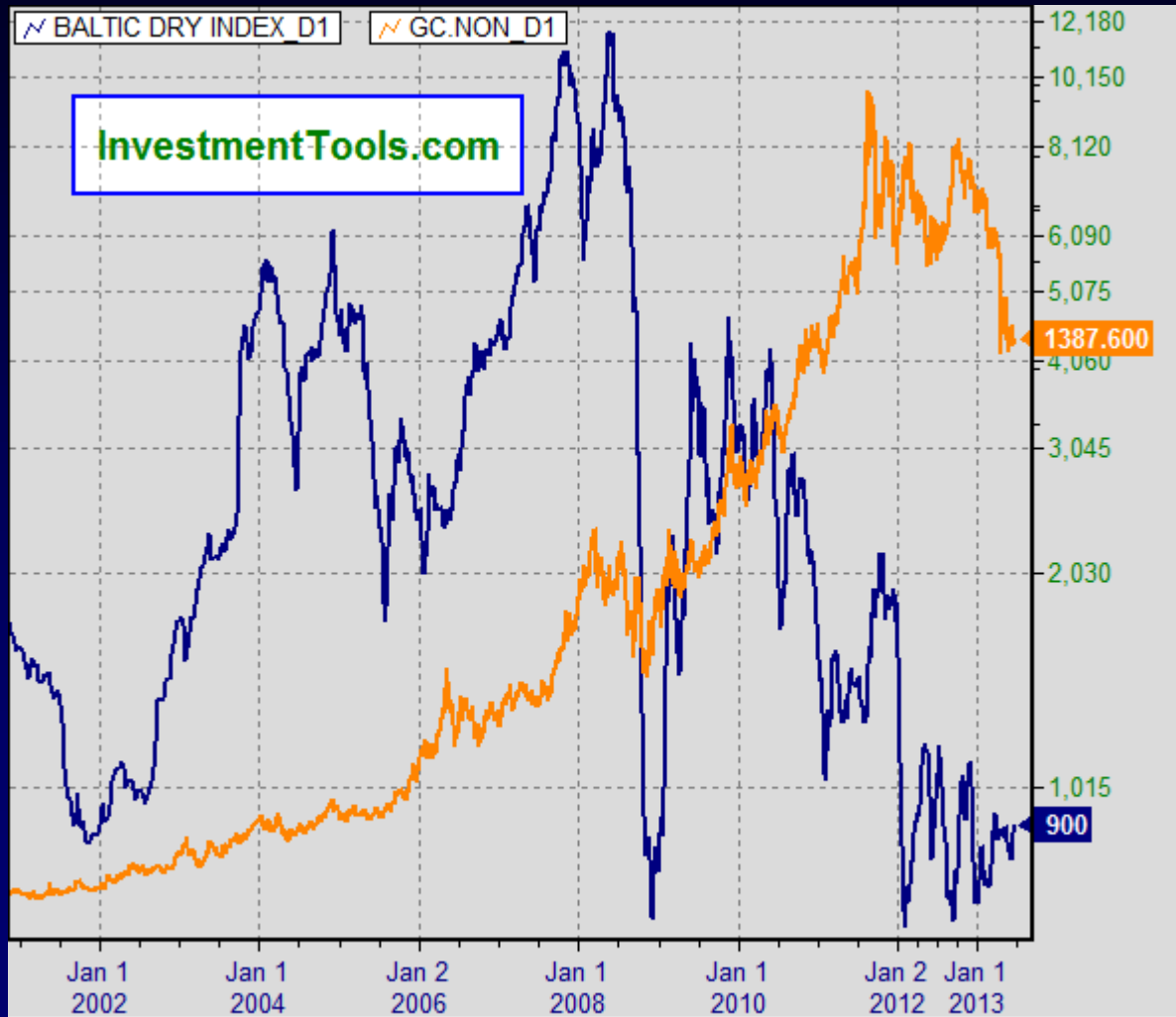


Chart created with NeoTicker EOD © 1998-2007 TickQuest Inc.

BDI and Soybeans

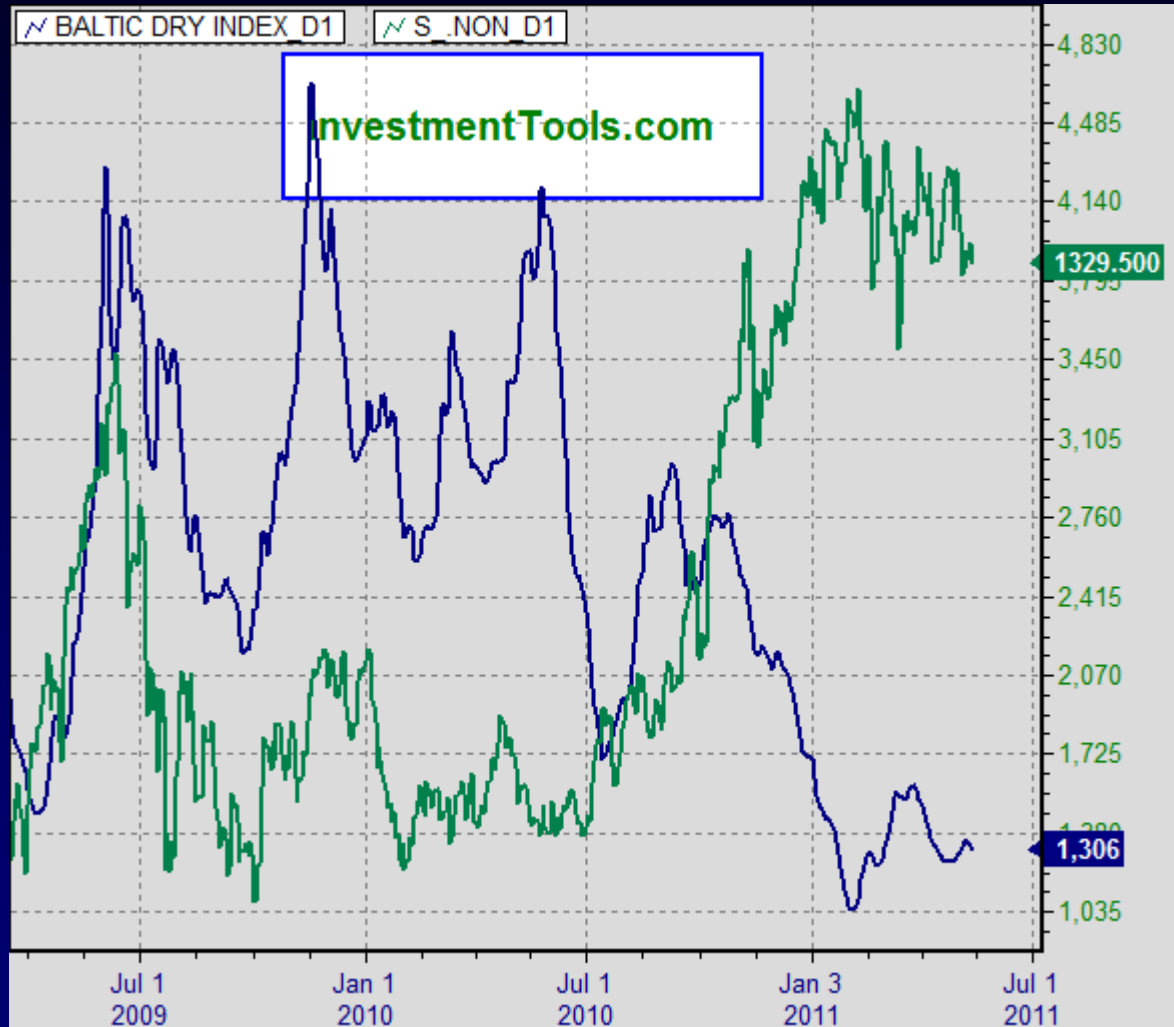


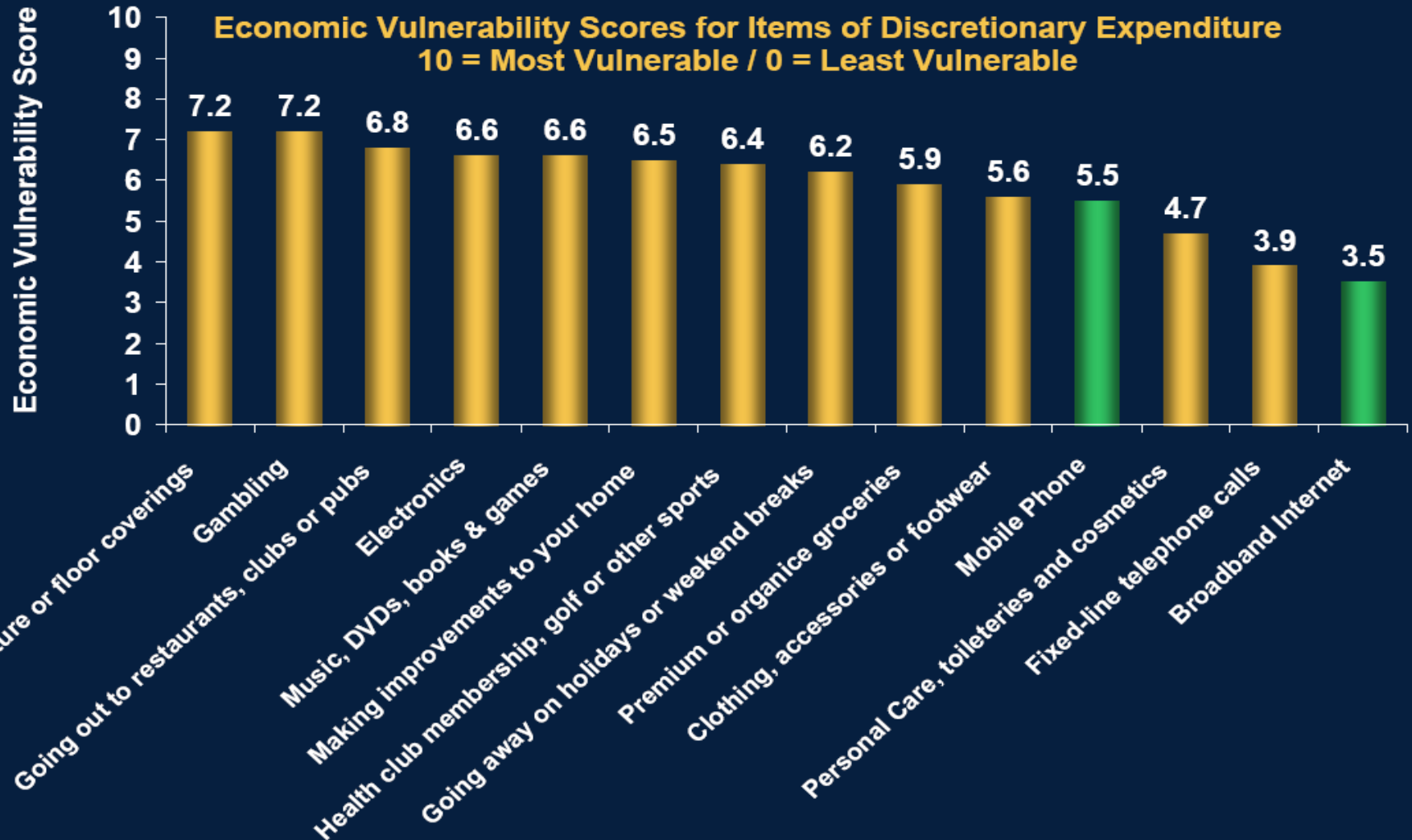
Chart created with NeoTicker EOD © 1998-2007 TickQuest Inc.

China GDP recovering



SOURCE: WWW.TRADINGECONOMICS.COM | NATIONAL BUREAU OF STATISTICS OF CHINA

Broadband is the least likely expense consumers will cut back on ...

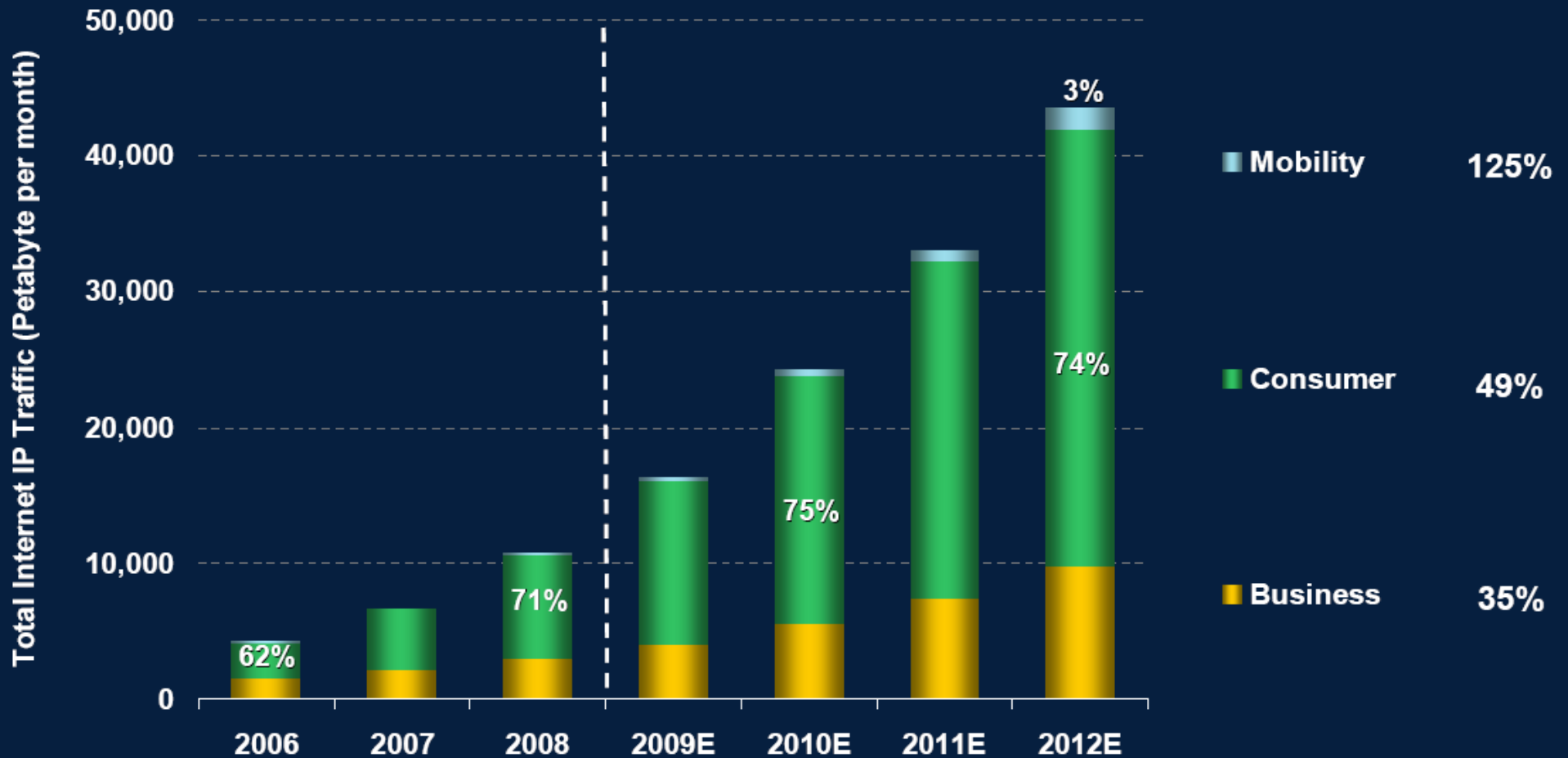


Note: In 9/08, 8,000 consumers in the UK, France, Germany and Spain were asked to provide a score to assess the likelihood that they would cut back on a particular area of expenditure. 10 = extremely likely to cut back; 0 = not at all likely to cut back.
Source: Execution Primary Research, quoted in UK Ofcom's "The International Communications Market 2008" report, p. 39.

Internet traffic will continue to grow whatever ...

Global Internet Traffic, by Type
2006 – 2012E

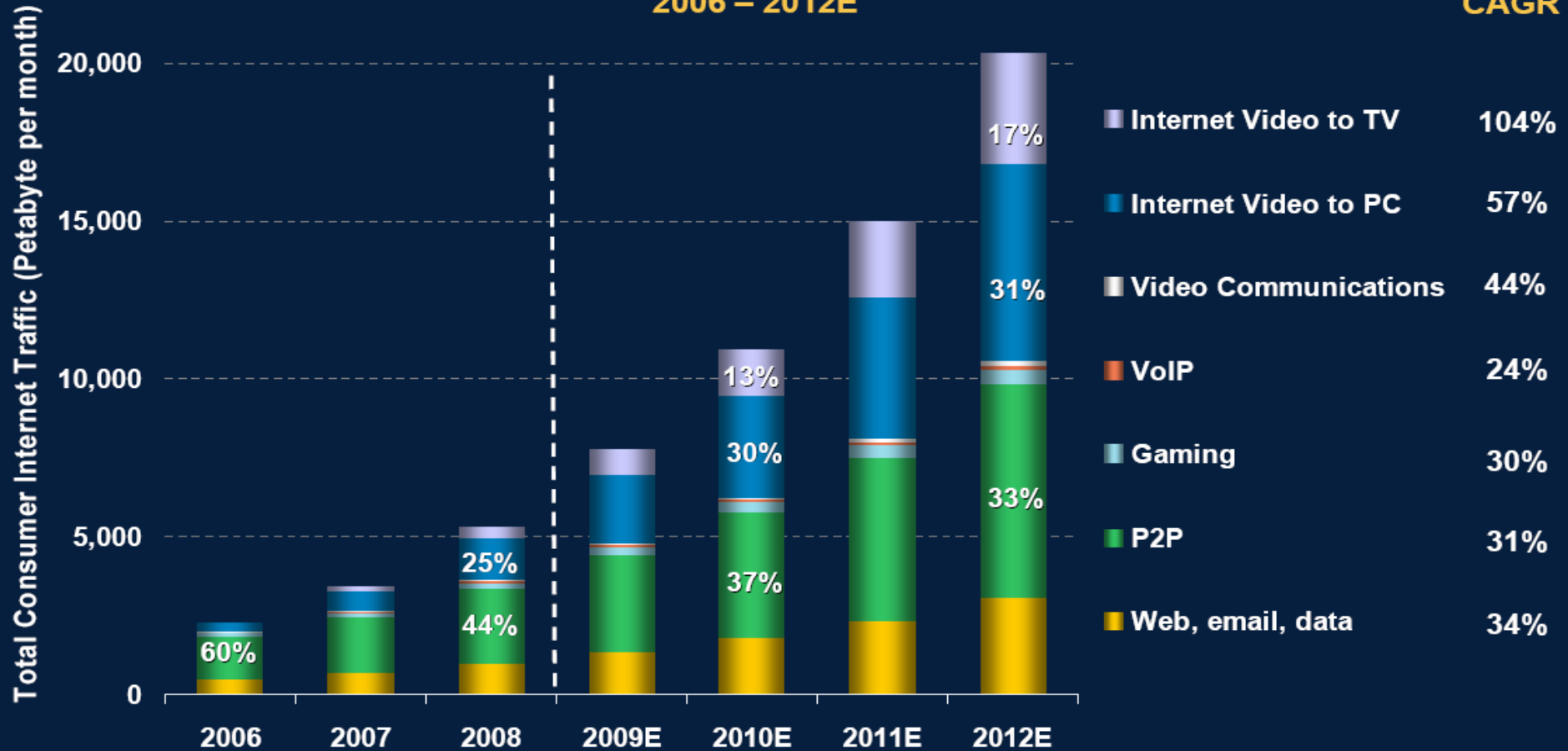
2007-2012E
CAGR



Opportunity exists everywhere if you are smart enough

**Global Consumer Internet Traffic, by Segment
2006 – 2012E**

**2007-2012
CAGR**



An Entrepreneur is...

- **Someone who starts a project without having the full resources or knowledge**
 - Estimate, guess and gut feel
 - Risk taking
 - Market risk
 - Technology risk
 - Financial risk
- **Value accrues as risk lessens**
 - Guesses replaced by justified facts
 - As development progresses and market established
 - Transition from intangible hopes to reality and cash-flow
 - Risk lessens, hence value increases

Why?

Why now?

- Because I can: available time and resource
- Just graduated, or made redundant and nothing else to do
- Brilliant idea or market opportunity

Why me?

- Barriers to market entry
 - What have you got to make it through?
 - Expertise, resource, relationships
- Barriers to competition
 - What stops others doing the same thing
 - IPR, network effect, niche
- Unique advantages

Know yourself

- Know your motivation so you can motivate others
 - What counts as success?

You need cash...

- **Most will be millionaires**
 - And need to be
 - Pension issue
 - Say household income of £50K @ 4% -> £1.25M
 - Inflation for 40 year @ 3% -> x 3 -> £3.75M
 - House, etc say £250K -> 750K
 - Total **£4.5M**
- **You won't save £4.5M from a salary**
 - Trading
 - Starting an Enterprise

Why are you doing it?

- **Wealth generation**
 - You need £5M by the time you retire, for a modest lifestyle
- **Better toys**
- **Make a difference**
 - Social consequences
 - Generation of employment
 - Death of the nation state
- **Fun or profit?**
 - Lifestyle or high growth?
 - Funding
 - Eventual size?

High Profit vs High Growth

- High Profit
- Lifestyle
 - Restaurant/shop
- P&L
- Organic Growth
 - 20 years
- Debt finance
- High Growth
- Sell the Company
 - Chain of Restaurants/shops
- Balance Sheet
- Investment
 - Exit route
 - 5 years
- Equity

Investor Criteria reflect the risks

- **Market**
 - Global sustainable under-served market need
- **Technical**
 - Defensible technological advantage
- **People**
 - Strong management team
- **Financial**
 - Believable Plans
 - 60% IRR

Market Need

- **Largest risk factor: everything else is process or resource**
- **Who needs it?**
 - **Why?**
 - What are they doing now?
 - How much is it worth to them?
 - **How is it sold, or advertised?**
 - Routes to market
 - Alliances
 - Branding
 - **Under served need**
 - **Competition**
 - **What other solutions?**
 - **Sustainable or one-shot wonder?**
 - **Growing market**
 - **Global potential**
 - **Total available market > 1000* investment**

Who needs it?

FAB: Features Advantages Benefits

- Feature:
 - This program runs really quickly
- Advantages:
 - Less waiting time
 - Uses less resources
- Benefits:
 - Less frustration
 - You can get more done
 - Cheaper to run

USPs: Unique Selling Points

Market Research

Market: Who loves ya?

FAB: Features Advantages Benefits

– Feature:

- This chip uses a double super-helical fooglefarg

– Advantages:

- Less Power
- More speed

– Benefits:

- Cheaper
- Smaller
- Works better in marginal conditions
- Batteries last longer
- Your friends will be envious

Techie
Speak

Customer
Speak

Business Model

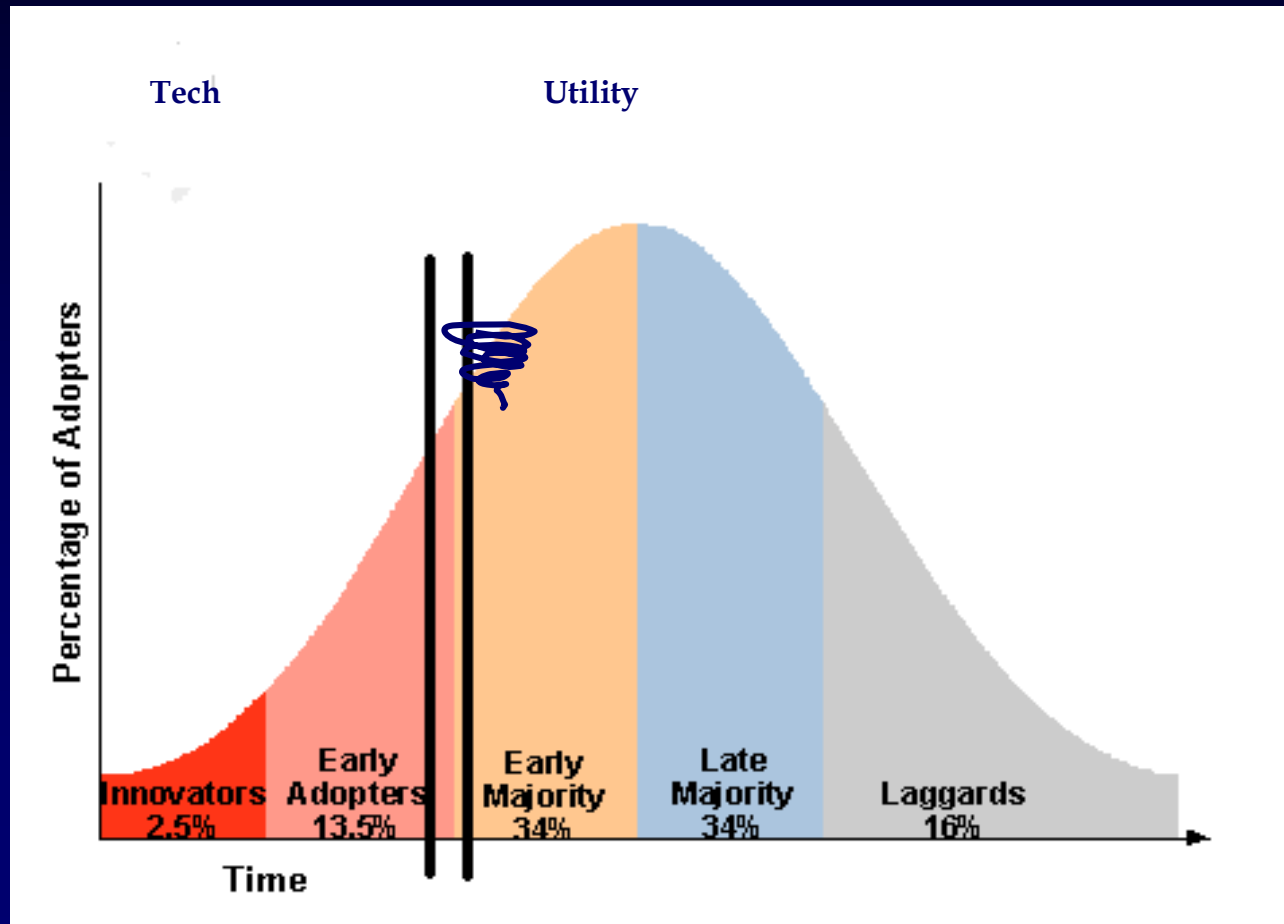
- **How do you make money from it?**
 - Landgrab
 - Sell something for more than it costs
 - Goods, services, IPR ,subscription
 - Charge a commission
 - Agent, brokerage, auction, marketplace
 - Sell advertising space
 - Lotteries and other scams
- **Faster, better, cheaper**
 - How long for? Go like a rocket
 - Amazon
- **Brave new world**
 - How to predict?

Reaching The Customer

- **How do you know what they want?**
 - Market research
 - Who? How many? Key issues? Pricing?
 - Focus groups
 - How do they find out about it?
- **Trust**
 - Open or closed source
 - Escrow, performance bonds etc
- **Direct or indirect sales**
 - Distribution chain
 - Web sales
 - Sales force
 - Retail: opportunity to purchase
 - Who is your real customer? Who makes the decision?
- **CRM**
 - Help desks, documentation, etc
 - Productisation

Crossing the Chasm

- Geoffrey Moore, after Everett Rogers



**Global
Sustainable
Under-Served
Market Need**

Strong management team

- **You can't do it all by yourself**
 - “Small” project >10 person-year
 - Team building
 - 1:3:10 rule
- **Alliances**
- **Recruit experience**
 - Financial Director
 - Sales & Marketing
- **Training & experience**
 - Merchant bank/Management Consultancy
 - MBA

Senior Team

<i>US</i>	<i>UK</i>	
Chair	Chair	Senior figure; Old wise head Experience and contacts; Major dispute resolution; part-time
CEO	Managing Director	Finding money; Investor relations; Style setting; Keeping the peace
CFO	Finance Director	Accounts etc. Office management; Administration, Legals, Quality control
CTO	Technical Director	Inventing new things; development
COO	Production Director	Running the factory and distribution
VP Marketing	Marketing Director	Deciding what and how to sell; pricing Marcoms; Market information
VP Sales	Sales Director	Selling; CRM;

Defensible technological advantage

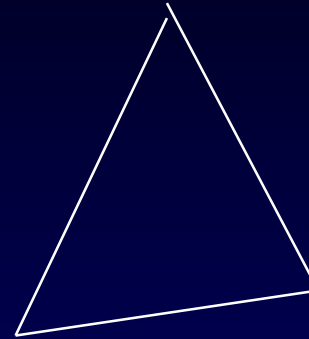
- **IPR**
 - Patent
 - Copyright
 - Trademark
 - URL
 - Design right
 - Registered Design
 - Database right
 - Plant breeders rights
- **Defensible technological leadership**
 - against well-funded competition
 - Niche Market share
 - Lock-in (eg hold your data)
 - Trade secrets
- **Who owns it?**
 - Negotiate

Believable Plans

- **Business Plan**
- **Development Plan**
- **Marketing plan**
 - Adverts, mail shots, web-sites
- **Sales Plans**
 - Distribution, Direct Sales
- **Quality Plans**
- **Financial Projections**
 - Budget
 - 60% IRR
 - Pay back financing in third year
 - Cash flow

Variables

- **Resource**
- **Time**
- **Function**
- “You can have any two of quick, good or cheap, but not all three”



Productisation

- **Generalisation**
 - Does the product work on all target systems?
 - Hardware variants/constraints
 - O/S variants
 - Internationalisation
 - Language, number, date and time formats
- **Documentation**
 - Installation, User Guide, Reference Manual, Help texts, examples, training
 - System manual, maintenance documentation
 - Conformance
- **Legals**
 - IPR generated (Copyright, trademark)
 - IPR used
 - Licence, contract, liability

Productisation II

- **Packaging**
 - Artwork, Box, Deliverables
- **Manufacture**
 - Reproduction, Manual printing, Stocking
 - Distribution set-up
- **Marketing Materials**
 - Leaflets, brochures, advertisements
 - Text, Artwork, approvals
- **Testing**
 - Usability
 - Market
 - Standards approvals
- **Maintenance**
 - Organisation setup and training
 - Help desk - staff, facilities,, FAQs, training
 - Report forms, database and summaries

Plan for quality

- Cheaper in the long run
- Build-in from the start; can't be added later
- Board-level function
- “Good Practice”

Standards

- **ISO 9000/BS 5750**
 - Traceability
- **BS 7799**
 - Information Management and Security
- **Internal standards**

Control and review

- Record key decisions
- Control key documents
- Control versions and deliverables
- Define standards
 - Coding standards
 - Naming conventions
 - Routine structure
 - Testing
 - Documentation standards
 - House style
 - Conventions and examples
- Review and Audit

Key Documents

- **Project Definition**
 - User Requirement Document
 - Project Constraints Document
- **Base definition**
 - Functional Specification or prototype
 - Top Level design
- **Control**
 - Project Plan
 - Project Log
 - Quality Plan
 - Document Plan

Writing the Business Plan

Executive Summary and funding requirement

1. Concept

2. The Market

3.1 Global market size and need

3.2 Sustainability

3.3 Competition

3.4 Marketing plans

4. The Team

4.1 CEO

4.2 CTO

4.3 CFO

4.4 VP Sales and Marketing

Writing the Plan - 2

5. The technology and its IPR

6. Summary of plans

6.1 Development plans

6.1.1 Methodology

6.1.2 Milestones

6.2 Marketing

6.3 Sales and distribution

6.4 Quality and industry standards

7. Financials

Writing the Plan - 3

Appendices:

Financial model

Key staff

Letters of support

Correspondence re IPR

Full development plan

Full marketing and sales plan

Examples and brochures

Living Document

- **Revise frequently**
 - Learning process
 - Different audiences/sensitivities
 - **Investor Presentations**
 - Powerpoint
 - Every board meeting/investor meeting
 - Budget
 - Project Plan
 - **Version control**
 - V 154.2

Sources of finance

- **Family and friends** **£50K**
 - Banks
 - Security
- **Angels** **£500K**
- **Venture Capitalists** **£5M**
 - VCA
 - VCB **\$25M**
 - Mezzanine
- **Stock Market floatation** **\$250M**
 - Acquisition
 - Exit

Why stages?

- Risk/Reward profile differ
- Successive dilution
- Typically 30% dilution each stage
 - Investment = pre-money valuation/2
 - “Squeeze the Angels”

Round	Investment	Pre-money	Post-money	Founders	FFF	Angel	VCA	VCB
				and staff options				
FFF	50	100	150	67%	33%			
Angels	500	1000	1500	44%	22%	33%		
VCA	5000	10000	15000	30%	15%	22%	33%	
VCB	10000	20000	30000	20%	10%	15%	22%	33%
Total	15650							
Exit	100000			20000	10000	15000	22000	33000
All	15550	100		0.64%				

**Global
Sustainable
Under-Served
Market Need**