

2.1 STOCKMARKET VALUATION OF OLD AND NEW ECONOMY FIRMS (L'ÉVALUATION D' ACTIONS DE LA NOUVELLE ET DE L'ANCIENNE ÉCONOMIE)⁸

Bien que le marché d'actions ne fasse pas partie intégrante de la stratégie de la politique monétaire de la plupart des banques centrales, il est néanmoins indispensable à ces dernières de cerner les divers impacts de la Bourse sur l'inflation, l'économie réelle, les taux de change ainsi que le système financier. Depuis l'émergence de la nouvelle économie, les marchés des valeurs enregistraient des hauteurs inédites. Les entreprises de haute technologie occupaient le devant de la scène et amenaient de nombreux observateurs à redouter l'apparition d'une bulle spéculative.

Cet article présente une définition opérationnelle d'une entreprise de la nouvelle économie et illustre l'évolution des prix des valeurs boursières sous l'aspect particulier de l'évaluation des actions de la nouvelle économie. Il met en évidence les analogies ainsi que les différences au niveau du rendement et du risque des actions de la nouvelle et de l'ancienne économie. Cette contribution étudie également la question de savoir si la structure des préférences de risque parmi les investisseurs a été sujette à modifications au cours de ces dernières années et, finalement, sonde la relation entre les revenus sur actions et les facteurs économiques les plus importants.

2.1.1 Central banks and stock markets

Few expressions have been hyped as much as the new economy has been recently. Despite numerous efforts undertaken to define the new economy⁹, the entire concept remains nebulous. What appears to be meant by new economy is typically based on the achievements of the US economy throughout the second half of the 90's, namely the simultaneous robust and exceptional economic growth and sustained remarkably modest price acceleration. In this context, the existence of a new economy is commonly considered a result of the confluence of advances in information and communications technology (ICT), improved macroeconomic management (both fiscal and monetary) and international elements (globalisation, economic activity abroad, foreign exchange), where pride of place is commonly going to the ICT revolution.

Without plunging into "the higher speed limits of the economy", this article aims to illustrate the evolution of stock market indices and the pricing of new economy stocks. From the perspective of central banks, financial asset prices are relevant because they exert important impacts on inflation, on the real economy and the financial system. Rising equity prices, for example, affect inflation through the "wealth effect". Final demand is affected through principally two channels, i.e. via consumption and investment. As for consumption, economic theory provides three main impacting channels. First, increasing financial asset prices are generally considered an increase in permanent income, which, according to Friedman, translates into augmented private consumption. Second, according to the permanent income theory, once changes in equity prices cause agents to modify their expectations with respect to income not generated by equity, even consumption behaviour of non-equity holders may change. Third, changes in financial asset prices affect the borrowing capacity of households. If the latter shrinks, households will readapt their portfolio by reducing current consumption and increasing savings. Investment demand of non-financial firms, too, may be affected via three channels. First, decreasing equity prices may imply a reduction of Tobin's q , thereby rendering new capital more expensive relative to the existing stock. Second, investment activity could suffer even more than proportionally from decreasing equity prices according to the flexible accelerator and multiplier theory. Third, decreasing stock market prices implies a reduction of the net value of a given firm, thereby rendering credit-taking more expensive and difficult. Another important transmission channel from financial asset prices to the real economy is based on balance sheets of financial institutions. In a direct way, a harsh downward correction of stock prices would deteriorate balance sheets within the banking sector and reduce banks' lending capacity. Furthermore, rapidly shrinking asset prices may impact on the real sphere in an indirect manner through a deterioration of the solvency within the private sector in general and additional pressure may be exerted due to the sale of collateral.

⁸ This article provides a non-technical summary of a more detailed analysis of the stock market valuation of old and new economy firms to be published in the working paper series of the Banque centrale du Luxembourg.

⁹ See for example the efforts undertaken by the European Central Bank in "The New Economy and Implications for Monetary Policy", mimeo, 2000.

Accordingly, the sharp fall in equity prices experienced since spring 2000 is commonly considered a major risk for the USA, but also for the global economy.¹⁰ Growth projections for several euro area countries, too, have been subject to downward revision. Finally, the mere anticipation of significantly shrinking equity prices may have important impacts on capital flows and exchange rates. Thus, although central banks around the world do not consider stock prices an integral part of their strategy, they monitor in detail the evolution of stock markets.

2.1.2 The peculiarities of new economy firms

Unfortunately, there seems to be no unanimous understanding as to what characterises a new economy firm. Commonly used properties relate to the field of activity and the business model. As for the field of activity, economists frequently consider but the technology, media and telecom (TMT) sectors when analysing macro aspects of the new economy phenomenon. Specific financial products related to the new economy (such as new economy funds), however, indicate a larger understanding. The latter may entail as much as nine sectors: technology, biotechnology, Internet, financial services, telecommunications, software, media and entertainment, industry and services and IT services. These fields of activity constitute an essential element underlying stock market valuation since they are subject to specific characteristics with respect to growth projections, price assumptions, barriers to market entry, etc. The business model may refer to numerous firm characteristics. As a baseline, one may consider properties referring to its affinity to innovation, the kind of techniques employed, the source of the know-how (i.e., historical versus experimental) as well as the financing sources for research and development activities (i.e., profits versus investors money).

The valuation of new economy companies, in general, will differ from that of old economy firms in several ways. First, new economy companies are different in that they use innovative technologies and rely on new and probably diverse business models. Obviously, any valuation of innovations is conditional upon the limited existence of historical experience. Second, some of these firms have been created only recently, meaning that valuation may not rely on historical back data.

Third, new economy firms, much more than traditional firms, rely on intangible assets (notably human capital). The greater role for intangibles creates additional contingency: on the one hand, there is still no technique allowing for a reliable assessment of such assets. On the other hand, the higher fraction of investment into intangible assets immediately and to the full extent shows up as costs in their balance sheets thereby reducing accounted current profits and rendering the evolution of balance sheets less steady. Fourth, new economy investors voluntarily buy future growth expectations at the expense of current earnings. Any valuation of new economy firms, therefore, relies heavily on expected rather than actual figures. Furthermore, small modifications to future growth and/or inflation assumptions bear large implications for today's valuation. Fifth, contrary to old economy firms, the valuation of new economy firms is frequently sentiment and/or news flows driven. Finally, valuation of new economy companies relies substantially on a qualitative assessment of the management.

Apart from firm- and sector-specific or fundamental macroeconomic factors, there do exist peripheral factors, which structurally may drive stock prices differently than in the past and/or may affect new economy stocks in a different way than old economy stocks. For example, the emergence of electronic trading platforms and on-line brokering has multiple achievements (such as more rapid trade execution and settlement, permanent access), but may also enhance contagion, be conducive to intraday trading and also enable non-institutional investors (i.e., new behavioural patterns) to enter the markets. Some characteristics of technology stocks – small float, high volatility – appear well suited to investors who prefer these new channels. The increased role of index-linked management can amplify the spread of herd behaviour and lead to self-sustaining price increases: when prices of certain stocks rise, their relative weight in the index increases, thus prompting managers to accumulate these shares within their benchmark portfolios.¹¹ This may be particularly applicable to a small firm size/low market capitalisation environment. Crowd behaviour may create financial bubbles according to the “bigger fool” theory. This theory may better apply to speculative stocks, since risk-taking preferences may allow for

¹⁰ *As for the US, according to the OECD, a 20 per cent decline in equity prices – when coupled to a 4,5 per cent decrease in marginal consumption propensity – transmits into a 1,2 per cent decrease in private consumption.*

¹¹ *Mouriaux, F./Verhille, F: “The Difficulty of Pricing ‘New Economy’ Stocks”, mimeo (2001).*

more extreme “bets” among investors. Massive share buybacks may be one reason for a substantial increase in prices of new economy stocks due to the narrow linkage with stock options (which have become an increasingly popular way of remunerating staff within the new economy sector). By buying back shares, the management can, in effect, inflate its own pay – and, because stock options do not appear in a company’s income statement, it can even do it without affecting recorded profits. The spread of a global equity culture, increased wealth across population and generational change may imply a reduction in the equity risk premium. The large media and marketing campaigns commonly organised prior to IPOs may affect stock prices and volatility in a way unknown before (e.g., by attracting an entirely new investor population, enhancing the news/sentiment driven impact on stock valuation).

2.1.3 The pattern of stock market evolution from 1997 to 2001

2.1.3.1 The evolution of composite indices

From October 1998 to March 2000 it seems that the new economy bewitched world stock markets. The unusually bullish valuation of stocks was frequently seen in the light of the technological revolution which notably the new economy firms promised to bring about (likewise the railway did a century before) as well as the ongoing uninterrupted growth in the USA. Accordingly, equity price inflation was less pronounced at the level of general stock market indices (e.g., the French CAC40 (+150%)¹², the German DAX30 (+100%)), and more so at the level of “technology-based” indices (e.g., the German Nemax (+1300%), the US American Nasdaq (+300%)). Two messages may be retained with respect to the period under consideration (i.e., March 1997 – April 2001). First, the major fraction of the stock price increases observed, in general, had been achieved within short periods of time (i.e., mostly Fall and Winter), whereas throughout the remaining months the score remained constant or declined even. Second, though the new economy phenomenon is first of all associated with Anglo-Saxon economies in general and the US American in particular,

euro area stock markets performed stronger than the Dow Jones and the FTSE 100. Though the navigation towards the new economy was frequently characterised by “Nasdaqmania”¹³, the relative increase in Nasdaq was closer to increases observed for the more general French CAC40 than those recorded for the Nemax.

2.1.3.2 The evolution of sub-indices

In practice, index components are mostly grouped according to sectors.¹⁴ Distinguishing by sectors may eliminate fixed sector effects underlying the implicit stock market pattern and allows to abstract from diverging sector weights across stock market indices. Given the wide sector-based grouping scheme and our particular interest in the euro area, in the following, the focus of this study is on the Eurostoxx.

Whereas prices within typical old economy sectors (such as retail and construction) evolved steadily (around 70% increase compared with their January 1997 score), TMT stocks increased by a stunning 200% (media) or 400% (telecommunication, technology). Surprisingly, the three new economy sectors took off at the same time (from October 1999) and reached their zenith by the same month (March 2000). Throughout the bull period, Eurostoxx telecommunication and technology stocks evolved in a remarkably similar manner. At the same time, however, returns observed within the technology and the telecommunication sector departed steadily from yields within the old economy sectors: whereas in the 12 months prior to January 1998 correlation was almost perfect (around 0,95), by January 2000 correlation was virtually zero and became even negative afterwards (around -0,5). Given that from a macroeconomic perspective the most important contribution of new technologies consists in the proliferation of productivity gains across the entire economy (instead of higher productivity within the ICT sector itself), it is questionable whether such a low degree of correlation could have been sustainable anyhow. Since late 2000, however, a considerable degree of homogeneity can be observed.

¹² Approximate maximum increase relative to the corresponding scores observed in March 1997.

¹³ *LEcho* of 8 May 2000.

¹⁴ For example, the Nasdaq index offers a 7-sector grouping scheme (i.e., computer, industrial, telecom, bank, other financial, insurance and transportation). The Eurostoxx index entails 18 sectors (i.e., bank, energy, health, telecom, technology, insurance, food and beverages, utilities, media, cyclical, non-cyclical, industrial, retail, chemical, basic resources, auto, construction and financial).

¹⁵ According to common textbook portfolio theory, in the following, risk is defined as some measure of volatility around the mean.

When plotting return and risk¹⁵ observed through 1997 to 2001, one observes that new economy sectors bought higher returns at the expense of higher volatility.¹⁶

2.1.3.3 Cross-atlantic correlation: the industrial and the telecom sector

One frequently addressed question refers to how the dual character of the driving forces of the new economy (i.e., national macroeconomic management versus ubiquitous character of information and communication technology) is reflected in stock market prices across countries, i.e. whether and how the more intense new economy proliferation in the US feeds through to euro area stock prices. As concerns closing prices for those two sectors appearing in both the Eurostoxx and the Nasdaq (industry and telecommunication), one observes a remarkably similar pattern. Furthermore, the turning points within the telecom sector did not only coincide in terms of time, but – at least at the end of the 1999/2000 bull period – also in terms of magnitude. Closing price volatility and intraday spread, too, evolved similarly in both telecom sectors until Fall 2000. For the industrial sector, monthly rates of return seem to correlate quite narrowly. The 12-month correlation coefficient never fell below 0,6, ranged steadily around 0,75 and reached its peak (0,86) from August 1998 to August 1999. US and euro area telecom stocks have been subject to considerable changes in terms of correlation. Whereas their prices hardly correlated at all in 1997 (correlation coefficient: 0,16), correlation increased rapidly reaching its peak from May 1999 to May 2000 (0,91). Throughout the bull period it seems that country factors have become less important in explaining prices, whereas the field of activity became highly relevant.

2.1.3.4 Stock market valuation: data from selected companies¹⁷

Contrary to the idea of a crude “high-tech mania”¹⁸ the high-tech property has by no means been a sufficient criterion for high returns. From April 1998 to late 1999, some 30 % of the technology, telecommunica-

tion and media firms were subject to negative monthly returns. Only from then on did the situation change significantly, in that almost no negative returns were recorded among the 34 new economy firms considered until March 2000.

Furthermore, throughout the period from April 1998 to April 2001, the volatility of monthly returns on new economy stocks overall did not necessarily behave differently than they did within the old economy sectors. Volatility of monthly returns across new economy firms throughout a given month, for example, did not systematically exceed that observed across old economy stocks until September 1999. Relative volatility across new economy firms had been even lower than the corresponding figure for old economy firms. Even the spread between the highest and the lowest rates of return across firms of the new economy sector did not systematically exceed the corresponding bandwidth across the old economy sectors. The standard deviation of returns across new economy firms rose to a multiple from October 1999 onwards but returned very rapidly after April 2000 to a level similar to that observable across old economy firms.

Obviously, the turning point in early 2000 did impact differently on the returns observed across the 18 sectors covered by the Eurostoxx. Return on new economy stocks (in particular the telecom stocks) suffered most in terms of absolute level, but benefited from lower volatility. Similar changes were observable for some of the other sectors (health and the industrial sectors), though to a lesser extent. Within some sectors (e.g., automobile, chemical, construction), average returns increased in spite of lower volatility. However, if one considers the entire three-year period as an integral one, the distribution of returns on new economy stocks is more dispersed than with old economy firms. Over the same period, the distribution of returns on stocks issued by ex-telecom monopolists (e.g., France Télécom, Deutsche Telekom, Telefónica, but also the British Telecom) is narrower than that observed for “genuine” new economy firms.

16 Returns within the technology sector in few cases increased even more than proportionally with higher relative volatility.

17 Figures presented are based on data for 219 firms listed on the Eurostoxx. The sub-set of 219 firms refers to firms located within the 4 major countries of the euro area (i.e., France, Germany, Italy and Spain). 34 out of the 219 firms are listed within the TMT sectors, whereas 185 were taken from the remaining 15 old economy sectors of the Eurostoxx. The period under consideration is from April 1998 to April 2001.

18 Financial Times of 16 March 2000.

Initially, the intraday spread observed for new economy stocks, too, behaved very similarly to the spread applicable to old economy firms (around 4%). Only from late 1999 onwards, did the intraday spread on new economy companies rise quickly and almost doubled. Contrary to the fall in volatility of returns across new economy firms, the intraday spread remained high in the aftermath of the fallback in April 2000.

According to classic portfolio theory, one reason for rapidly increasing prices of new economy stocks could have been rapidly growing earnings and dividend payout projections. Based on figures for 1998 to 2001¹⁹, high dividend growth within the TMT segment is but an artefact. Whereas the dividend yield increased significantly across most of the 15 old economy sectors covered by the Eurostoxx, it shrank markedly in the TMT sectors.

To sum up, the common assumption of high returns on new economy stocks being subject to high volatility cannot be confirmed unanimously, but depends on the period considered. This is with respect to the volatility throughout time as well as across firms. Furthermore, whereas some indicators for new economy stocks point towards a return to "normal levels" after the dramatic fallback in prices (e.g., volatility of returns across firms), others (such as the intraday spread) still reveal a considerable spread relative to old economy stocks. Finally, some indicator series are subject to substantial breaks in the last quarter of 1999 (i.e., around six months prior to the fallback in stock prices).

2.1.4 The primary market

Throughout the preceding four years the substantial increase in stock market prices was accompanied by comprehensive IPO activities. IPO activity in the new economy sector has been particularly intensive: In 2000, almost 9 out of 10 IPOs at the Frankfurt Stock Exchange (FSE)²⁰ concerned the Neuer Markt, whereas in 1997 the share was approximately 36%. The emission volume of IPOs at the Neuer Markt in Frankfurt increased from Euro 373 mn (1997) to Euro 13.006 mn

(2000). In general, IPO activity was characterised by an evolution very similar to that observed on the secondary market in a double sense. On the one hand, initial returns correlated positively with Nemax price increases. On the other hand, the emission volume mirrored a good deal of the pattern of the Nemax index. Only recently, subscription prices in some cases have been fixed below book building spread and initial returns vanished. Maximum correlation between average initial returns of IPOs and aggregate emission volume is observed with volume lagging initial returns by 2-3 months, though the general level of correlation is rather weak. In total, initial returns reached their maximum level already in 1998 (median: + 50%), emission volume peaked in 2000 only (i.e., at a time when the median initial return fell to around 15%). At the individual IPO level, the size of the IPO correlates slightly negatively with initial returns. However, one observes large discrepancies across the sectors covered by the Nemax with respect to initial returns and emission volume, as well as the point in time at which IPO activity took off. For example, in the Internet sector IPO activity became significant by Spring 1999 only, at a moment when emission volume within the software segment already decreased. Whereas in most cases average monthly initial returns peaked at around 200%, they exceeded 500% in the technology field.²¹ With respect to the primary market, given the heterogeneity observed in IPO activity and returns across the new economy sectors, it seems inappropriate to understand the new economy phenomenon as a homogeneous rush out of the old economy into the new economy.

2.1.5 Price earnings ratios

An important indicator frequently referred to when discussing stock market valuation is the price earnings ratio (PE ratio). PE ratios observed for technology-based indices in general and new economy companies in particular have often been considered unreasonable high. And indeed, PE ratios within the new economy sectors soared considerably throughout the bull periods

¹⁹ Due to the recent emergence of most new economy companies a profound analysis of dividend growth is infeasible.

²⁰ According to estimated figures, the FSE is the most important stock exchange within the euro area in terms of turnover.

²¹ Whether and how the important initial returns observed for IPOs of new economy stocks are fundamentally justifiable remains unclear and has been seriously put to question in the case of new economy firm IPOs launched on Wall Street. At present, Wall Street's leading investment banks are under siege from three probes into alleged malpractice in their allocation of shares in IPOs. The alleged malpractice refers to three areas: First, it is alleged the equity syndicate desks channelled shares to investors in exchange for supporting the value of the stock in the after-market. Second, it is alleged the equity desks channelled generous IPO allocations to investors in exchange for an unrelated business. Third, it is alleged banks won business by allocating IPO tranches to potential IPO candidates.

of the last four years. In early 1997, for example, the aggregate price earnings ratio for computer stocks was equivalent to three times the score observed for the Dow Jones index, whereas by early 2000, the multiple was above 10.

When interpreting PE ratios across firms, one must consider that a couple of variables may drive PE ratios of new economy stocks in a different way than that of old economy stocks. According to the classic dividend discount model, lower inflation and higher growth boost PE's of both old and new economy companies. But the relationship between PE's on the one hand and inflation and growth on the other hand is geometric which implies different behavioural patterns for the PE's of old (low growth) and new (high growth) economy stocks. From this, the following messages may be retained. First, the expected high growth projections for new economy companies may justify very high PE multiples. Second, PE ratios of new economy stocks may react stronger to changes in inflation and growth than PE multiples within old economy sectors. Third, growth stocks' PE appreciation is a double-edged sword. Just as high growth stocks are rewarded more in a low inflation environment, they are punished more severely if that high growth rate happens to fail. For example, if it turns out that effective earnings growth is some 20% below the expected figure, the normal PE's for high growth stocks would decrease – e.g., at some 2% of inflation – by almost 55%, whereas for average growth stocks the PE would fall by about 16%. Fourth, the decrease which a given stock's PE would experience is highly dependent on the level of inflation prevailing. Finally, the interpretation of new economy stock prices *ceteris paribus* becomes increasingly difficult when inflation is subdued.

Apart from higher growth expectations, higher PE ratios for new economy stocks could also be caused by higher dividend payout ratios and/or lower real equity discount rates. Such possible explanations seem however unlikely. First, new economy companies are still suffering from zero or negative earnings. Furthermore, though expected earnings growth is higher for new

economy companies, one has to take into account that the earnings component includes – apart from intrinsic business activity growth – elements such as sector-specific inflation (i.e., corporate pricing power). Still, the commitment of new economy firms to investment and intangible assets fuel price earnings ratios for new economy companies: on the one hand, investors buy future growth expectations at the expense of current earnings. On the other hand, the higher fraction of investment into intangible assets immediately and to the full extent shows up as costs in their balance sheets thereby reducing accounted current profits. Second, dividend yields within the Eurostoxx new economy sectors are relatively low. Third, given the higher risk commonly associated with new economy stocks, the real equity discount rate is expected to be higher.²²

2.1.6 Did investor preferences change?

The strong rise in stock prices and PE ratios raises the question whether investor behaviour has changed within the last years. One way to illustrate modifications in risk aversion among stock market investors relies on the utility function concept.²³ It assumes that the utility an investor has for money can be measured by a utility function describing the relationship between risk and return for an investor. By applying the observed means and standard deviations for different investment alternatives one can derive – for a given risk aversion constant – the optimum weighting coefficients or – for a given weighting matrix – the corresponding risk aversion parameter. Resulting implicit modifications to the latter then may reflect changes in investor risk attitude. Estimates for the German Dax 30 and the Nemax indicate that, in order to keep the portfolio allocation constant, until mid 1998 the utility maximising investor implicitly had to become less risk averse. Furthermore, the high implicit marginal rate of substitution indicates that even risk-averse investors maximised utility when investing primarily in the Nemax. From July 1998 onwards, indifference curve analysis indicates that a constant weighting vector required a continuous shift away from risk aversion. By

22 Obviously, PE ratios may also have increased over time due to other factors, such as financial innovations that help reducing transaction cost and allow for enhanced portfolio diversification (i.e., lower equity risk premium), substantial productivity growth or the tax treatment of corporate profits. Still, the recent rise in stock prices had been particularly strong relative to the historical record. Previous technological revolutions, such as the dissemination of electricity-based industries in the 1920's (which brought about considerable and lasting productivity gains), did not produce the sharp rise in stock valuation similar to that experienced within the IT sector (IMF World Economic Outlook: "Asset Prices and the Business cycle", 2000).

23 The most prominent ways to address this rely on the concept of the equity risk premium.

mid 1999, maximum utility required risk-neutral behaviour. When presuming that, from 1998 to early 2000, investors shifted funds from the Dax to the Nemax, one may conclude that the typical investor implicitly became less risk-averse from mid 1998 onwards. From Spring 2000 onwards, however, risk-averse as well as risk-neutral and even slightly risk-seeking investors would have allocated their entire portfolio on the Dax. At that time, only in the unlikely case of marked risk-seeking behaviour, an investment in the Nemax would have been justifiable.

2.1.7 Stock prices and fundamentals

Whether stock prices in 1999 and 2000 have been in line with fundamentals or, instead, subject to “irrational exuberance” has been addressed on numerous occasions. In order to test the relevance of macroeconomic fundamentals, but also firm-specific hard facts in explaining stock returns a two-sector-multiple factor model has been estimated based on observed monthly returns for a total 219 firms listed on the Eurostoxx.²⁴ A separate panel data analysis is applied to both the new economy sector and the old economy sector. The range of macroeconomic factors includes different types of deflators (GDP, services, communications), industrial production, productivity growth, exchange rates²⁵, central bank rates and money market rates.

Panel estimates suggest that returns on old economy stocks are significantly²⁶ determined by common firm-specific ratios as well as industrial production and the money market rate. More specifically, important scores

for the PE ratio and the price to book multiple in the past significantly reduce current return rates. Industrial production growth fuels stock market returns. A given increase in money market rates would imply a more than proportional reduction in return rates. The role of the exchange rate is inconclusive: its coefficient is but borderline significant and unstable.

As expected, the explaining moment is less convincing in the case of the TMT segments (e.g., both industrial production and money market rate coefficients become insignificant). By splitting the sample period into two sub-samples (i.e., prior to versus after April 2000), one observes for the “prior to period” a significant coefficient for the exchange rate (positive sign) and the firm fundamentals (negative sign). The idea of a self-inflating thirst for high PE ratios could not be confirmed. The explanation content can however be ameliorated significantly by means of a dummy variable from September 1999 onwards. The otherwise unexplained part in monthly returns on TMT stocks amounts to approximately 16%. The role of the price deflator applicable to communication remains inconclusive. Estimates obtained for the period after April 2000 indicate that past firm-specific fundamentals affect monthly returns in a negative way, whereas industrial production exerts a positive impact. The inconclusive results obtained for the remaining macroeconomic variables probably reflect the limited explaining moment of the “after period” (very short reference period, probably entailing corrections to the preceding bull period).

²⁴ See also footnote 17.

²⁵ Note that the exchange rate may have a different meaning in the context of new economy firms (i.e., indicator for investing competitiveness instead of exporting competitiveness).

²⁶ The notion of significance within this paragraph, in general, implies statistical significance at the 95% percent confidence level.