

**Switzerland's growth deficit:
A real problem – but only half as bad as it looks**

Ulrich Kohli
Chief Economist
Alternate member of the Governing Board
Swiss National Bank

Revised March 23, 2005

**Paper prepared for the Avenir Suisse conference on economic growth
Technopark, Zurich, 4 March 2005**

Switzerland's growth deficit:

A real problem - but only half as bad as it looks

1. Meet the Celtic Tiger

According to a recent, much publicised OECD press release, Ireland has now surpassed Switzerland in terms of GDP (gross domestic product) per capita. The index of 2002 real GDP per head at PPP (purchasing power parity) exchange rates reached 129 for Ireland vs. 128 for Switzerland. Ireland's income per capita, it would thus appear, is now higher than Switzerland's. This is hard to believe... This and similar reports have caused much alarm in Switzerland and considerable scepticism in Ireland. As for me, I am rather sceptical too.

For a start, even though the title of the OECD press release states that the comparison pertains to GDP figures, the OECD itself refers to "income" after just two paragraphs. Few other commentators even bothered making the distinction.¹ Yet income and GDP are rather different concepts. A far better measure of national income would be provided by GNI (gross national income), a concept that includes net factor income from abroad.² Since Switzerland is an international net creditor (thanks to its chronic current account surplus), its GNI typically exceeds GDP, by as much as 8% in recent years. 2002 was a rather bad year on international financial markets, so that Swiss GNI exceeded GDP by about 4% only. Nonetheless, this difference would still lift the OECD index for Switzerland from 128 to around 133. Ireland, on the other hand, is a net debtor. It has been the recipient of much foreign investment, so that a substantial part of Irish domestic value added is not Irish income at all. Indeed, in 2002, Irish GNI was about 17% lower than GDP. Thus, to get a better measure of income, the OECD estimate would have to be reduced from 129 to 107. On this basis, Swiss real national income per

¹ Charles Wyplosz in *Le Temps*, January 31, 2005 : "C'est maintenant confirmé : le revenu par tête (corrige du coût de la vie) irlandais a dépassé le niveau suisse en 2002 ...", and Henry Habegger in *Blick*, January 31, 2005 : "Heute sind wir punkto Kaufkraft noch das fünftreichste Land der Welt" (Ireland was ranked fourth by the OECD).

² GNI is the income counterpart of GNP (gross national product), an aggregate that is no longer published in the context of the ESA95 system of national accounts.

head exceeds the figure for Ireland by close to 25%, a difference that is hardly trivial.

Moreover, the odds are that Irish GDP overestimates domestic value added anyway as a result of transfer pricing. Indeed, the low Irish tax rates are an incentive for multinational corporations to overstate their profits realised in Ireland and to understate them elsewhere. The magnitude of this phenomenon is difficult to assess, but it unquestionably leads towards an upward bias in the measure of GDP and GNI. Thus, the real income gap between Ireland and Switzerland is almost certainly wider than 25%.

The OECD comparisons rest on PPP (purchasing power parity) exchange rates. Although PPP exchange rates are widely used, they do raise conceptual problems as well, since they seek to compare what is essentially incomparable. A large share of the consumption basket is made of non-tradables. Since these goods and services tend to be very country specific, it is problematic to compare them. How can one compare the rental prices of two apartments, one in Zurich and one in Dublin? The size might be similar, but differences in location, view, setting, equipment, and comfort are difficult to price. The quality of most other services, such as health care, dining, shopping, transportation, etc. are difficult to compare as well. This is just to say that international price level comparisons are very risky and that they are not very reliable. If one looks at tradables, such as cars, electronic and photographic equipment, international airfares, and so on, it does not appear that prices are that much lower, if at all, in Ireland. If the price level difference between Switzerland and Ireland is overestimated, the real income gap between the two countries might well be even wider than 25%. At the limit, taking market exchange rates, Swiss GNI per capita exceeds the Irish figure by over 50%. Market exchange rates do have one important characteristic speaking in their favour: actual transactions do take place at these rates, which is certainly not true for PPP rates.

Of course, national product does not tell the whole story when it comes to real income and standards of living. One must also look at the supply of public and club goods, which all impact on welfare. Apparently, some Irish citizens feel

that their quality of life has deteriorated in recent years due to congestion, pollution and inadequate public infrastructure. This too has to be included in the equation, and it tilts the balance towards Switzerland, which tends to invest massively – perhaps too much so – in its public infrastructure. It is noteworthy that the 2004 Mercer Human Resource Consulting world quality of life city survey places Zurich and Geneva in the top two positions. Berne is 5th, while Dublin is 23rd. So, whatever such international comparisons might be worth, it seems that Switzerland is still doing something right after all.

2. Switzerland's growth paradox: Going slowly, and yet staying ahead

It thus appears that we are not doing all that badly in terms of our level of income. What about our growth rate, though? Once again the picture is alarming at first sight. Indeed, from 1980 to 2003, for instance, Swiss real GDP grew at an average rate of about 1.5% per annum, a rather poor performance that places Switzerland pretty much at the bottom of the league table of OECD countries. Interestingly enough, the low growth performance of Switzerland is nothing new. According to data constructed by Dewald extending over a period of 115 years, from 1880 to 1995, Switzerland had the second lowest per-capita average growth rate in a sample of 12 European countries.³ This raises the question: how can Switzerland go slower than most, and yet always be in the lead pack?

To some extent the solution to this puzzle – the Swiss growth paradox – again has to do with measurement. There are a number of technical reasons that lead me to believe that Swiss real growth is being underestimated by official statistics. In my recent research, I focused on three aspects: 1) direct indices vs. chained indices, 2) simple means vs. superlative indices, and 3) the role of terms-of-trade changes.

Until recently, Switzerland used the direct Laspeyres quantity index formula to compute real GDP. Direct indices are defined relative to a base period, say 1990. These indices are adequate to make a direct comparison between an arbitrary year and the base period, but not to make comparisons between an

³ William G. Dewald "Money, Prices, and Interest Rates in Industrial Countries, 1885-1995: Lessons for Today", Ohio State University, Columbus, OH (2002).

arbitrary pair of periods, including consecutive ones. Thus, the index can be legitimately used to compare 1991 with 1990, and 1992 with 1990, but not to compare 1992 with 1991. Yet, it is precisely to make such comparisons over consecutive years that indices of real GDP (and direct indices in general) are mostly used, e.g. to compute yearly growth rates. This can be remedied by switching to chained weighted indices, where the index is rebased every year.⁴ This is the solution recommended by Eurostat in the context of ESA95 (European standardised accounts), and indeed the solution adopted by Switzerland. Since 2003 the Swiss Federal Statistical Office computes real GDP as a chained Laspeyres quantity index. As a consequence of the revision, average real growth over the past decade has been found to be about 0.2% higher than previously thought.⁵

The second item on my list concerns the functional form of the index number. Most countries use a linear form, such as the Laspeyres, which means that the implicit GDP price deflator has the Paasche form, a harmonic mean. In the supply context, the Paasche price index tends to lie above the true price index.⁶ The Laspeyres quantity index therefore tends to underestimate real GDP. Better approximations would be given by Fisher's ideal index and by the Törnqvist index, both of which belong to the family of superlative indices.⁷ Only a few countries so far have followed this route in the context of their national accounts. Perhaps another 0.1% of annual real growth goes missing for this reason.

Another reason why real GDP might underestimate the growth in domestic real value added has to do with changes in the terms of trade. Over the past two decades Switzerland has experienced a massive improvement in its terms of trade, more so than any other country in the OECD. The price of exports

⁴ See Ulrich Kohli "Inexact Index Numbers and Economic Monotonicity Violations: The GDP Price Deflator" prepared for the *SSHRC International Conference on Index Number Theory and the Measurement of Prices and Productivity*, Vancouver, B.C., June 30 - July 3, 2004.

⁵ Revised data are not available for the 1980s.

⁶ The reverse is true in the demand context : the Paasche price index is then a lower bound and the Laspeyres price index an upper bound of the true index.

⁷ See Ulrich Kohli "An Implicit Törnqvist Index of Real GDP", *Journal of Productivity Analysis* 21 (2004), 337-353. The concept of superlative indices has been introduced by W. Erwin Diewert in "Exact and Superlative Index Numbers", *Journal of Econometrics* 4 (1976), 115-145.

relative to the price of imports increased by close to 30% over that period. An improvement in the terms of trade is similar to a technological progress. It is a blessing, since the country essentially gets more for less. Yet, changes in technology and in the terms of trade are treated very differently by national accountants. The former type of change is rightly viewed as a real phenomenon, whereas the latter is treated as a price phenomenon. A *drop* in the price of imports – which *ceteris paribus* must unquestionably lead to an increase in real value added, in real income, and in welfare – will have little or no effect on measured real GDP.⁸ Instead, it will lead to an *increase* in the GDP price deflator. This phenomenon is illustrated in Figure 1 that shows the paths of the price deflators for exports (PX), imports (PM), and domestic sales (PS), from 1980 to 2003. The improvement in the terms of trade is visible from the fact that the price of exports has increased more rapidly than the price of imports. The fact that the price of domestic sales has increased at a higher pace than the price of exports is a reflection of the real appreciation of the Swiss franc over that period. Now consider the GDP implicit price deflator (PGDP). This price index is often interpreted as the average price of production. As an average, one would intuitively expect it to lie somewhere between the paths of PM, PX and PS. Instead, it is found to lie outside the range set by these three paths: PGDP grows more rapidly than any of its three components. The reason for this somewhat curious result is attributable to the fact that the GDP price deflator is a mean of PM, PX and PS, with PM being negatively weighted. The figure also illustrates why, by deflating nominal GDP by PGDP – thus treating the terms-of-trade effect as a price phenomenon – one tends to underrate the purchasing power of Swiss GDP. According to my own calculations, real GDP underestimated the growth of Swiss real value added by about to 0.4% per annum between 1980 and 2003 for this reason.⁹

⁸ In fact, if real GDP is measured by a Laspeyres quantity index, the *drop* in import prices will have a perverse effect: real GDP will *decline*; see Ulrich Kohli “Technology and the Demand for Imports”, *Southern Economic Journal* 50 (1983), 137-150, for details.

⁹ See Ulrich Kohli “Real GDP, Real Domestic Income, and Terms-of-Trade Changes”, *Journal of International Economics* 62 (2004), 83-106, for additional details.

There are many additional measurement issues one could raise. I have already mentioned the difference between GDP and GNI. It turns out that in recent years GNI has grown significantly more rapidly than GDP. Between 1990 and 2000, for instance, the difference amounted to about 0.5% per year on average.¹⁰ Another important topic concerns the proper deflator for financial services. The nominal value added by the financial sector is in principle observable, but one needs an appropriate price index for these services if one wants to get an accurate measure of the quantity produced. Such an index is difficult to construct, and there is a general feeling that real value added in the financial sector is being underestimated. Given the importance of this sector in Switzerland, and its rapid growth in recent years, one sees that this question is particularly relevant for our country. Considerable efforts are presently devoted to this question at an international level, and we will hopefully get a better reading soon. More generally, it is noteworthy that more efforts go into recording manufacturing and industrial activities, rather than services, even though services today make up the bulk of economic activity. A further issue, which I already mentioned, and to which I will return later, addresses the fact that GDP and similar measures are ill-suited to capturing improvements in the quality of life. Positive and negative externalities, together with non-market activities tend to be overlooked. Switzerland devotes large resources to projects that do not yield any tangible or visible returns. Thus, investments destined to protect the environment generally do not yield returns that are captured by the national accounts. I need only mention here anti-noise barriers erected along freeways and railway lines, water cleaning plants, and the doubling up of the sewer system in order to separate the rain water from the spoilt water. The construction of new railway tunnels through the Alps (the so-called NEAT) also absorbs massive amounts of resources that could be used profitably elsewhere, and yet these investments will not increase our GDP potential anytime soon. If tolls were collected on the use of our highways and road tunnels, like it is done in many European countries, our GDP would be that much higher. By

¹⁰ No GNI data are available for Switzerland prior to 1990. As already mentioned, 2001 and 2002 were bad years on world financial markets, and the difference was actually negative. The figures are not yet out for 2003, but one can expect GNI to have grown much more rapidly than GDP.

being provided free of charge, the services produced by this infrastructure go unrecorded.

To sum up, I would argue that Swiss real income growth over the past couple of decades has been underestimated by real GDP, probably by around 1% per annum on average. This leads me to conclude that the growth problem we are experiencing is probably only half as bad as it looks. Nonetheless, there is a problem. Even though there is no doubt in my mind that Ireland has not yet passed Switzerland in terms of real income per capita, we can be sure that if current trends persist, it will do so eventually. To avoid being left behind, Switzerland must react now. This is all the more important because our population is rapidly ageing, and because economic growth offers the best protection against this ticking time bomb.

Before moving on to an examination of the possible causes of Switzerland's poor growth performance, I would like to emphasize that I am not saying that official statistics underestimate real GDP growth, but rather that in Switzerland real GDP growth underestimates real national income growth. While the points I raised in this section apply to all countries to various degrees and in either direction, they are particularly relevant for our country. This is because Switzerland is an outlier, both when it comes to the gap between GDP and GNI and when one considers the improvements in the terms of trade. Moreover, both effects act in the same direction. My analysis should therefore in no way be perceived as a criticism of the Swiss Federal Statistical Office, which follows internationally recognized practices and does an excellent job with very limited resources.

3. Switzerland's growth problem: Causes and remedies

I see many causes for Switzerland's growth problem. Many of them are well known. Many of the cures to these problems are equally familiar, but implementing them somehow seems to be beyond reach. All in all, the solutions are simple: one must mobilise all possible factors of growth and use them efficiently. The main growth engines are labour and capital, technological progress and international trade. To make the best possible use of these, the key is to avoid distortions, artificial hurdles and disincentives.

The first obvious cause of our anaemic growth performance, in my opinion, is the very substantial increase in the size of the public sector that has taken place since the late seventies. The sum of government purchases and transfers has grown enormously.¹¹ In fact, of all the OECD countries, it is Switzerland that has experienced the largest increase in the share of the public sector over the past two decades. Given the negative correlation that seems to exist between real growth per capita and the *increase* in the size of the public sector, our poor performance should probably not come as a surprise.¹² Within Europe, Switzerland has long been an outlier when it came to the magnitude of its public sector. This is no longer true. If one adds up the spending of all levels of government, the social insurances (including health insurance and compulsory pension schemes), and the public enterprises (the utilities, the railways, the post office, etc), one is not far off 50% of GDP.¹³ In fact, if one refers to nominal *net* domestic product, which is a better measure of domestic net output, the 50% mark is probably already breached. Thus, just about every second franc that is spent in Switzerland transits through, is diverted by, or is regulated in some way by the public sector. The allocation of resources no longer responds to economic forces; it tends to become inefficient. Some might object that it is misleading to include the railways, the post office or public television in the sphere of government, since in some countries these are part of the private sector. This is precisely the point, though: in Switzerland, they are not.

The rapid growth in the public sector also helps to explain Switzerland's relatively poor productivity achievements. Since output is conventionally measured by input when it comes to the government sector, productivity increases are ruled out by construction, which weighs negatively on the average productivity performance for the economy as a whole.

¹¹ In my opinion, public expenditures are a better gauge of the ascendancy of the public sector than current taxes would be, since it is the spending that signifies an absorption or a diversion of resources, and expenditures must necessarily be fully financed, either by taxes now, or by taxes later.

¹² See Ulrich Kohli "Le véritable impôt", University of Geneva (1999).

¹³ See Ulrich Kohli "La montée des dépenses publiques en Suisse", University of Geneva (1998).

Much of the increase in the size of the public sector has to do with the expansion of social security and transfers in general. Transfers are a particularly problematic type of public spending: not only do they absorb resources that are then no longer available for other uses, but they also tend to reduce the amount of resources available in the first place. Unemployment insurance is a case in point. By taxing those who work and diverting purchasing power in favour of those who do not, the scheme can provide a strong disincentive to work at both ends of the so-called solidarity chain. Naturally, less work performed also means less output. In this respect, the enduring discussion about reducing the length of the work week and lowering the retirement age – measures that would go exactly in the wrong direction – is quite revealing about the lack of economic literacy in certain circles.

Health care too is a constant source of concern. Somehow there seems to be a consensus in Switzerland that this sector need not obey economic laws. It is difficult to understand, though, why an oversupply of hospital beds or doctors should drive prices up, rather than down. More market mechanisms surely would help. In the meantime, the unrelenting and merciless increases in insurance premiums are penalising households by slashing their real disposable income, thereby holding consumption back.

The lack of competition in many sectors of the Swiss economy is also often cited as one of the main causes of Switzerland's lacklustre growth performance. Sheltered industries are not prone to increase their productivity. Too many regulations, restrictions, and domestic barriers to internal trade take their toll. Administrative hurdles use up valuable resources and create distortions. There seems to be no end to Swiss creativity when it comes to devising exotic taxes and duties. Some new levies are on the drawing board as we speak.

Federalism tends to act as a hindrance as well. Local regulations limit domestic trade and factor movements. They can create distortions, inefficiencies, inequities, and lead to a waste of resources. In a world that is more and more globalised, and with an increasing number of international

agreements creating a new layer of regulations and bureaucracy, maybe it is time to consider some offsetting measures at the lower levels.

Labour mobility, which is an essential element for the efficient allocation of resources, could also be enhanced by a reform in our pension system. The free selection of a pension fund would allow workers to switch jobs without changing pension scheme, and vice-versa, thus giving them more freedom and flexibility. Indeed, there is no reason why the choice of employment should be linked to the choice of the provider of a financial service. Elementary portfolio theory teaches us that it is unwise to invest one's two largest assets (human capital and pension capital) in more or less the same institution. Furthermore, a system of widespread, transparent, individual pension accounts might do much to incite workers to increase their work effort.¹⁴

Swiss perfectionism might be yet another culprit. An obsession for detail has its cost and can lead to a misallocation of resources. Do buildings really have to be erected to last for an eternity? Do we really need bomb shelters in every dwelling? Does it really take a certified electrician to connect two wires, or a licensed plumber to repair a faucet? Do we really always need to be model pupils in every respect?

The bursting of the housing bubble of the late 1980s has also taken its toll. It has severely penalised the building industry, and it has forced many economic agents, banks and households notably, to clean up their balance sheets. This has had a restrictive impact on domestic expenditures for an extended length of time.

There is always a temptation to blame others for our failings. This ought to be resisted. There is no doubt, though, that the Swiss economy has evolved in a difficult European environment over the past 15 years. The burden of German reunification, restrictive fiscal policies in the struggle to satisfy the Maastricht criteria, and, more recently, the constraints of a one-size-fits-all monetary

¹⁴ See Ulrich Kohli "L'impact économique de la sécurité sociale", in *Fünf Expertenberichte zur Dreisäulenkonzeption der Schweizerischen Alters-, Hinterlassenen- und Invalidenvorsorge* (Berne: Département fédéral de l'intérieur) 1991.

policy have held growth back on the Continent, and have impacted negatively on us as well.

I would like to conclude this section on a positive note, however, and mention what did *not* go wrong during the past decade and a half when it comes to macroeconomic policy. It is sometimes argued that monetary policy is largely responsible for the long period of stagnation that Switzerland has endured in the 1990s. In my opinion, such a view is not tenable. Admittedly, a monetary policy that is too restrictive would tend to restrain activity for a period of time, leading to less growth and higher unemployment. Such real effects can only be temporary, however. It is well known that monetary policy has no hold on real variables in the long run. In no way could an overly restrictive monetary policy strangle activity for a period as long as 10 or 15 years. An overly restrictive monetary policy would also impact on the price level, eventually leading to deflation. Far from experiencing deflation, Switzerland has enjoyed an unprecedented period of price stability, which leads me to conclude that Swiss monetary policy was, all in all, very successful during the 1990s. I do not feel embarrassed to say so, since I was still a professor at the University of Geneva at the time, and I was thus in no way involved in policy making. This is not to say that no monetary policy mistakes were ever made. I would certainly argue that SNB's policy was too expansive in the late 1980s. This fed a housing market bubble and led to a sharp increase in inflation. The restrictive monetary policy that followed in the early 1990s, which is often criticised even to this day, was not a mistake. Quite the contrary, it was the only appropriate policy response given the earlier excesses.

4. A High-Price Island?

Switzerland has the reputation of being a high-price country. To some extent, the high prices we pay for the goods and services we consume reflect the lack of competition, the rigidities, the administrative hurdles, and the inefficiencies to which I alluded earlier. For a large part, though, the high prices that we face reflect the high wages that we enjoy. Our country is well endowed with capital and skilled labour, and relatively scarce in unskilled labour and land.

Consequently, returns to capital are relatively low and the real wages of unskilled workers are high by international standards. Land is relatively expensive too. The high level of wages in Switzerland reflects the high value of the marginal product of its workers. To be sure, there are some activities where productivity is no higher than in the rest of the world. These are typically highly labour intensive, non-traded services, such as haircuts. Given our high wages, this translates into relatively high prices for these products. There is no way around it, though, at least not as long as we expect these services to continue to be offered in Switzerland. Given the current technology, it would be most unpractical and prohibitively expensive to travel to Greece or to Malaysia every time one needed a haircut. Nonetheless, the traded component of what we consume – except for agricultural products – is hardly more expensive than in the rest of the world. Our high wages therefore still imply a comparatively high purchasing power. This is for real, it is not an illusion.

Deregulation, more competition and technological progress will lead to adjustments in relative prices, and to a more efficient utilisation and allocation of resources. Our purchasing power will increase further, together with our real income. What this evolution might do to the price level is unclear, however, and indeed quite irrelevant. The price level *per se* is a quite meaningless concept: it cannot be assessed *in abstracto*, i.e. independently of wages, the exchange rate, and monetary conditions in general.¹⁵ Ultimately, it is the course of monetary policy that will shape the path of the price level. Some voices have been heard calling for a drop in all prices, including wages, in Switzerland. Even if such a drop could be engineered (what happened to yesterday's fears about deflation?), it would have little real impact, since the price of foreign exchange would most likely fall in the same proportions, leaving the *real* exchange rate – the only one that matters – unchanged, and still leaving us under the impression that Switzerland is a high-price country. As a first approximation, such a development would have no real impact. A

¹⁵ The price of a good or of a basket of goods can only be assessed relative to a standard of measurement. By appropriately choosing the “numéraire”, one can convey the impression that Switzerland is really a low-price country. According to a recent study by UBS, for instance, a Big Mac only costs 14 minutes of average work in Zurich, whereas it costs over 3 hours in Nairobi !

closer look, though, would reveal a potentially damageable side-effect, namely an arbitrary redistribution of wealth from debtors to creditors.

While many of the goods and services that we consume are non-tradables – and thus largely sheltered from international competition – circumstances are changing. The dramatic drop in transportation, telecommunication and computing costs makes it feasible today to trade goods and services, which until recently were considered to be strictly domestic. More and more of the services that are relatively intensive in unskilled labour can be outsourced to low-wage countries. This flux of change is compounded by the simultaneous integration of China – with its huge pool of cheap, unskilled labour – into the world economy. Some people fear that China, given its wage advantage, can do everything more cheaply than we can, and that eventually, there will be nothing left for us to do. This, of course, is total nonsense. For a start, it is most unlikely that China has an absolute advantage in everything. Just think of highly sophisticated processes where human capital is essential. Second, and much more importantly, China, by definition, *cannot* have a comparative advantage in everything. Thus, it will have to focus on those activities it is relatively best at, leaving all the others to the rest of the world.

These changes create both opportunities and risks for Switzerland: opportunities to further exploit our own comparative advantages and to reap the benefits from the fragmentation of production and expanded international trade. It will require adjustments, however. And here is the risk: if these changes are being resisted, if the necessary corrections in relative prices and wages are not allowed to take place, and if the reallocation of resources is being hindered, some new equilibrium will emerge nonetheless, but it will be an unattractive one for us: one with more idle capacity, less income, and less growth. It is up to us to decide whether we want a 20th or a 21st-century income in the future.

Figure 1

Price deflators for exports, imports, domestic sales, and GDP, 1980-2003

