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Economic policy challenges in an open economy:  
Coherence between trade and finance

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by

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## 1. Trade and finance in theory

After the end of the Second World War the creation of a coherent international economic order was understood to integrate aspects of the financial or monetary order with the order of the trade flows and future steps towards a full liberalisation of goods and capital flows. The architects of the new Bretton Woods arrangements fully understood that without that integration of money and trade a stable and, in terms of sustainable growth and jobs, successful order could not be built. In May 1944, Lord Keynes, speaking in the House of Lords about the coming world economic order, said:

*“To begin with, there is a logical reason for dealing with the monetary proposals first. It is extraordinarily difficult to frame any proposals about tariffs if countries are free to alter the value of their currencies without agreement at short notice. Tariffs and currency depreciations are in many cases alternatives. Without currency agreements you have no firm ground on which to discuss tariffs. In the same way, plans for diminishing the fluctuations in international prices have no domestic meaning to the countries concerned until we have some firm ground in the value of money. Therefore, whilst the other schemes are not essential as prior proposals to the monetary scheme, it may well be argued, I think, that the monetary scheme gives a firm foundation on which the others can be built. It is very difficult while you have monetary chaos to have order of any kind in other directions.”<sup>1</sup>*

Unfortunately, after the breakdown of the Bretton Woods system at the beginning of the 1970s, the world monetary system slipped back into the kind of “monetary chaos” that had characterised the pre-war period and its dismal economic and political outcomes. Nevertheless, the liberalisation of the trading system, even after the end of the Bretton Woods system, was pushed forward by policy makers as if a consistent approach on the monetary side, i.e. a coherent monetary order, would have existed. Only recently, with the Asian crisis as well as with the Latin American currency turmoil, the shortcomings of the “monetary chaos” and its repercussions on the trading system have been acknowledged, even by mainstream economic theory and the WTO.

<sup>1</sup> Keynes, J.M. (1980), p. 5

The inherent instability of the system of multiple exchange-rate systems, ranging from free floating to absolutely fixing, has led many observers to ask for a global approach in monetary affairs or, at least, for improved regional co-operation. But instability is only part of the story. Given the frequent overshooting of exchange rates since the collapse of the Bretton Woods agreement, the more pressing question is about the real allocative distortions and the disincentives to invest stemming from the monetary side of the economy. If exchange rate movements follow a random walk, i.e. if changes in the international value of money are in no way related to the fundamentals of countries with open markets for goods and capital, traditional trade theories quickly lose their grasp on reality and trade liberalisation loses much of its alleged justification.

The philosophy of trade liberalisation on a global scale is still mainly based on the doctrine of “comparative advantage” or “comparative costs”.<sup>2</sup> In a two country-two goods world with a common currency, like the Gold Standard, the logic of this doctrine is simple and irrefutable. David Ricardo wrote in 1821:

*“Two men can both make shoes and hats, and one is superior to the other in both employments; but in making hats, he can only exceed his competitor by one fifth or 20 per cent - and in making shoes he can excel him by one third or 33 per cent; will it not be for the interest of both that the superior man should employ himself exclusively in making shoes, and the inferior man in making hats?”<sup>3</sup>*

The example should prove that even countries lagging behind in terms of absolute cost in the production of both goods had a chance to participate in the division of labour and income. But countries, even with a common currency, do not always share the same characteristics as persons living in the same country. Obviously, Ricardo’s example is conclusive if both men receive the same wage despite their different skills. Across countries this is not necessarily the case. If labour is immobile and the wage of each man in his country exactly reflects his productivity, i.e. if the wage of the superior man is much higher than the one of his inferior competitor, the result of competition is not as simple. Moving to a multi-goods, multi-country world increases the complexity further.

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<sup>2</sup> Viner (1975), p. 451

<sup>3</sup> Ricardo (1951), p.136

With differing wage and productivity levels between products and countries, the “comparative advantage” cannot easily be identified. In the real world absolute advantages regarding the wage level and/or the technology (productivity) in the production of a certain good may be much more important than the construct of comparatively lower costs under Ricardo’s assumptions. Moreover, if prices and costs in money terms are the main determinants of trade, and if capital is mobile, countries with relatively low wages have huge advantages, producing even products of the high-wage country spectrum, like computer chips, if they are able to import and to apply the high-wage country technology. With “high-tech” and low wages, production of high-tech products in the low-wage country yields an extra-profit or a rising market share for domestic producers or foreign investors. This extra-rent, ignored by mainstream trade theory and trade policy, may be an important source of catching up of developing countries.

Regarding the puzzles faced by the pure trade cum comparative advantage approach, dealing with nominal costs and prices, including differing wage and productivity levels as well as exchange rate changes is more promising. Nevertheless, developing countries with low wages, even in this world, export a certain number of goods produced at the low productivity end, thereby exploiting lower costs. The industrial countries export at the higher end of the productivity scale despite higher wages. But regardless of this rough pattern, there is no simple rule explaining the international division of labour. Manufactures are exported by developing countries that can be produced cheaper because of lower wages and despite lower skills of labour. The production of these products may incorporate high technology as well as low technology with no clear rule at hand. Finally, the whole process is, in a world of “monetary chaos”, permanently overlaid by monetary shocks and huge gaps between imports and exports stemming mainly from real exchange-rate movements.

The classical idea that trade advantages and disadvantages reflect different “endowments” with labour, capital or natural resources, has lost explanatory power, as the assumptions on which the idea had been based no longer apply. It introduces a divide between real analyses on the one hand and monetary analyses on the other hand, suggesting to policy makers both areas could be tackled separately. However, trade flows in the real world are distorted by huge differences in wage formation, inflation rates and, even more important,

wide over- and undervaluation of exchange rates. In fact, many kinds of “monetary or nominal” disturbances distort the division of labour between the industrial and the developing world. If exchange rates change by 20 % in a week or if countries or regions manage to keep their currency (with fixed or with flexible rates) undervalued by 10-20 % over periods of 5 to 20 years, an analysis based on the classical paradigm is misleading.

The main objective of this paper is to discuss conditions at the micro- and macroeconomic levels, as well as in the transmission process between the national and the international economy that must apply for entrepreneurs to enjoy benefits from innovative investment. After a brief discussion of the concept of the competitiveness as used in this paper and its applicability to developing countries, sections 3 to 5 concentrate on these conditions. Section 6 discusses measures of competitiveness. Section 7 discusses the possibility of using currency undervaluation as a general solution to maintaining competitiveness, and the last section presents conclusions and policy implications.

## **2. A pragmatic solution: The concept of competitiveness**

Historical evidence shows that countries raise the standard of living of their population by raising labour productivity. This is associated with a substantial change in the sectoral pattern of production and employment, from agricultural to industrial products, and a shift from labour-intensive activities to a growing range of capital- and technology-intensive activities. The production structure of an economy is of key importance for the development process, because, at any point in time, both the level of productivity and the potential for technical progress and productivity growth vary significantly across agriculture, industry and services, as well as within these sectors.

Transformation of the production structure requires entrepreneurs who are capable and willing to invest in activities that are new to the domestic economy. Indeed, Schumpeter (1911) pointed to the importance of innovative investment for economic development, and Baumol (2002) argues that innovation, and the consequent rise in productivity, account for much of the extraordinary growth record that has occurred in various parts of the world since the Industrial Revolution. He suggests that market pressures arising from oligopolistic competition force firms to integrate innovative investment into their routine decision processes and activities – thus, the innovation process is neither largely autonomous nor largely fortuitous. Market forces achieve much of this through financial incentives, by

providing higher pay-offs to those firms that are more efficient and whose products are most closely adapted to the wishes of consumers.

However, the occurrence of innovative investment is not automatic; it could encounter structural and institutional impediments. Moreover, the macroeconomic environment could be inappropriate for encouraging and supporting investors seeking to create or expand productive capacity and, in particular, to increase productivity and international competitiveness. The main incentive for investors to discover a more efficient way of producing an existing good or to produce a new good arises when they can appropriate at least part of the rent generated by the creation of new knowledge. Within this framework, for an innovative entrepreneur to enjoy such benefits, a number of conditions must apply at different levels.

Linkages between investment, productivity growth, successful integration into the international trading and financial systems, and economic development have been seen in recent years through the lens of international competitiveness. A wide range of criteria and measures of the competitiveness of countries have been elaborated, some of which have been extensively publicised. Indeed, "competitiveness" has become not only a management buzzword, but also a term widely used in economics and economic policy-making.

The concept of competitiveness can contribute to an understanding of the distribution of wealth, both nationally and internationally, if it is recognized that: (i) it can be applied at both the enterprise and the country level, (ii) when applied at the enterprise level, it relates to profits or market shares, (iii) when applied at the country level, it relates to both national income and international trade performance, particularly in relation to specific industrial sectors that are important in terms of, for example, employment or productivity and growth potential, (iv) it is based on a Schumpeterian logic that sees the nature of capitalist development as a sequence of innovative investments associated with dynamic imperfect competition and productivity gains, and that sees a major role for public policy in facilitating productivity-increasing investment,<sup>4</sup> and (v) not all countries can simultaneously improve the competitiveness of their firms or sectors relative to other countries, but all countries can simultaneously raise productivity and wages to improve their overall economic welfare without altering their relative competitive positions.

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<sup>4</sup> Fagerberg, Knell and Srholec (2004) present a similar argument.

If new technology in the form of added capital per worker (or embodied technological change) is at the heart of the development process through which nations become rich, and if embodied technological change is driven by investment based on either innovation of domestic entrepreneurs or putting imported capital equipment to efficient use, then approaching the concept of competitiveness in the context of economic development needs to take account of the interdependence of investment, trade, finance and technology.

Looking at competitiveness from the perspective of interdependence, two key questions relate to how different price, wage, exchange-rate and trade arrangements (i) influence the determinants of innovative investment, and (ii) determine whether productivity gains of individual firms translate into benefits for the overall economy, as reflected in rising living standards, while maintaining external balance.

Emphasizing interdependence also implies that competitiveness in international markets is determined by both real and monetary factors. Competitiveness may increase as a result of the relatively strong productivity performance of companies or the national economy as a whole; but greater competitiveness can result also from a depreciation of a country's real effective exchange-rate following either a depreciation of its nominal effective exchange-rate or a smaller rise in the ratio between wages and productivity (i.e. unit labour costs) than in other countries.<sup>5</sup>

### **3. Conditions for competitiveness at the microeconomic level: the key role of innovative investment**

Linkages between capital accumulation, technological progress and structural change constitute the basis for rapid and sustained productivity growth, rising living standards and successful integration into the international economy. Investment holds a central place in this interplay, because it can simultaneously generate income, expand productive capacity, and

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<sup>5</sup> The concept of competitiveness as defined here is relevant for countries where economic success depends on investment that leads to sustained improvements in productivity. This excludes many of the poorest countries, where capital accumulation can help raise per capita income and living standards simply by allowing a fuller use of underutilized labour and natural resources without altering the efficiency with which resources are utilized.

carry strong complementarities with other elements in the growth process, such as technological progress, skills' acquisition and institutional deepening.

However, a given rate of investment can generate different growth rates, depending on its nature and composition as well as the efficiency with which production capacity is utilised. Particularly important for productivity growth and structural change is investment in new techniques and/or new products. This is because new procedures generally reduce production costs of established products, while new products are often more attractive to consumers than any of the previously available alternatives. Assuming constant wages, successful innovative investment will be reflected in growing market shares, if the investor chooses to pass on innovation rents in the form of lower prices; or it will lead to (temporary) monopoly profits, if the investor chooses to leave sales prices unchanged and enjoy innovation rents from the rising revenue-cost ratio until competitors succeed in imitating the innovator. Which of these strategies the investor chooses will depend on the intensity of competition. This means that in the microeconomic sphere, changes in competitiveness relate to changes in relative labour productivity across different firms, and that technological progress and the ensuing growth in labour productivity (i.e. the drivers of sustainable rising competitiveness) are associated with oligopolistic, rather than perfect, competition.

Innovative investment in developed countries extends the technological frontier. By contrast, in developing countries it generally relates to the adoption, imitation and adaptation of technology invented elsewhere. While this does not affect the key importance of productivity-enhancing investment for competitiveness at the firm level, or significantly alter the determinants of investment decisions, there are three issues that specifically concern productivity-enhancing investment in developing countries. First, in building their industrial capacity and competitive strength, newly industrializing countries must typically import a large volume of capital goods and intermediate inputs. However, an inability to obtain additional export earnings (i.e. if the country's products are not competitive on international markets or face prohibitive market access or entry barriers), and thus to finance these imports, may be a serious constraint on the industrialisation process. The extent of this balance-of-payments constraint and dependence of developing countries on foreign technologies embodied in imported capital goods are perhaps greatest during the initial stages of industrialisation. However, the need for large-scale imports of machinery and equipment

persists throughout much of the industrialisation process, especially when catching up is based on imitating technological leaders.

Secondly, in addition to directly facilitating a rise in the level of technology used by domestic firms, developing-country imports of goods that embody foreign technology positively affect domestic imitation and innovation. For example, a notable feature of the process of technological improvement in the East Asian economies in the early stages of their industrialisation was their emphasis on research and development (R&D) spending, not only for backward engineering but also to match or surpass the product quality of foreign manufacturers by adapting and improving imported technology. The former enabled firms, for example, to fully assess the merits of a new foreign technology and thus to determine whether to secure a licence or not, and to unbundle foreign technology, thereby enhancing their bargaining power in negotiating with suppliers. As the industrialisation process unfolded and firms came to master imitation, an increasing share of R&D spending was channelled into own innovation (*TDR 1994*, Part Two, chapter one). Taking a wider geographical perspective, and looking at a large number of countries from all developing regions, a recent empirical study (Connolly, 2003) also reveals the positive impact of technology imports from developed countries on domestic imitation and innovation in developing countries.

Thirdly, the realisation of technological improvements in developing countries is closely related both to the skill level of their labour force – which determines the amount and degree of sophistication of technology that can be adopted and efficiently used – and to managerial capabilities, which must meet the requirements to function effectively in new sectors and new markets. As such, technological upgrading in developing countries is usually associated with a painstaking and cumulative process of technological learning. Human capital formation, including through learning, is instrumental in preventing a decline in the marginal product of capital, despite the rapid growth in the capital-labour ratio generated by rapid accumulation of physical capital. It also helps prevent a decline in the marginal product of labour, despite the rise in wages that results in a higher standard of living.

The competitiveness of affiliates of foreign transnational corporations (TNC) is likely to be significantly higher than that of domestic firms. Labour productivity in TNC affiliates tends to be higher than in their domestic counterparts, because they can combine the

comparatively lower general level of labour costs in the host country<sup>6</sup> with the advanced production technology and management techniques used in their home countries, and with supplies of raw materials and intermediate production inputs from the cheapest sources.<sup>7</sup> Indeed, in the context of the concept of competitiveness, the decision of a foreign company to invest abroad is generally based on the objective to reduce unit labour costs in production. Setting aside other host country characteristics (such as income or corporate tax treatment or provision of infrastructure), this implies that for FDI to occur, the investor must expect the ratio between labour productivity and wages in the affiliate to exceed that in the parent company. In other words, if expected unit labour costs in the host country are lower than in the TNC's home country, the TNC will consider moving part of its production activities abroad.

#### **4. Competitiveness of firms at the level of the national economy**

At the level of the national economy, the decisive factor for realising technological upgrading and productivity-driven structural change is the ability of investors to sell the products resulting from their product or process innovations without a significant change in cost conditions (i.e. to enjoy a (temporary) monopoly profit). In other words, if an economy is characterised by high domestic labour mobility and by a similar level of wages for workers with similar qualifications across the economy, its dynamic development will be driven by profit differentials, rather than wage differentials. Indeed, as noted by Keynes (1930: 141), “the departure of profits from zero is the mainspring of change in the ... modern world. ... It is by altering the rate of profits in particular directions that entrepreneurs can be induced to produce this rather than that, and it is by altering the rate of profits in general that they can be induced to modify the average of their offers of remuneration to the factors of production.”

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<sup>6</sup> If labour mobility within the host country is high, the wage level will be determined by the economy-wide average level of labour productivity, rather than by marginal labour productivity.

<sup>7</sup> The development effect of foreign direct investment (FDI) for the host economy depends on a range of factors, including the amount of technological spillovers from affiliates to domestic enterprises, the creation of forward and backward linkages, and the effects on domestic investment. The large body of literature on this, including successive UNCTAD *World Investment Reports*, provides ambiguous findings, and shows that much depends on host-country characteristics and the way foreign affiliates operate.

Hence, the closer actual conditions on the labour markets get to the law of one price, the stronger will be the effects of profit differentials on the evolution of economic systems.<sup>8</sup> The observed asymmetry between uneven productivity growth and the more even growth in wage rates across enterprises or industrial sectors is frequently emphasized as providing an important source of both structural change in the domestic economy and changes in the comparative cost advantages of different countries in specific industrial sectors. Uneven productivity growth across firms, combined with more even growth in wage rates, implies that workers in industries with relatively higher productivity growth are not fully compensated.

Under this scenario, innovative investors may decide to leave sales prices unchanged and obtain a sizeable extra profit equal to the difference between their productivity gain and the economy-wide average growth in productivity. Alternatively, they may prefer to reduce sales prices by the amount to which their profit per unit of output rises, and thus, assuming normal price elasticities of demand, increase their market share. This will lead to a rise in their absolute level of profits in line with the rise in sold output. This potential for extra profits is the major incentive for starting the process of “creative construction” or “destruction” along Schumpeterian lines, and hence for making innovative investments. By contrast, if wages in each firm rise more in line with firm-specific productivity gains, innovative investors will obtain a much lower extra profit, which will be much less of an incentive for innovative investment.

Enterprises whose productivity gains fall short of the national average will experience shrinking profits if labour costs rise at equal rates across firms. These enterprises will therefore attempt to raise the sales prices for their goods so as not to risk a complete erosion of profits.<sup>9</sup> This implies that sectorally uneven productivity gains, combined with even labour cost increases across the entire economy, generate price pressures in non-innovative sectors. However, the net impact of this supply-side effect on price pressure depends on effects originating from the demand side. Rising labour productivity induces increases in income, and

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<sup>8</sup> Looking at developed countries, Scarpetta and Tressel (2004) point out that in addition to wage-bargaining regimes, two main aspects of labour-market policy and institutional settings are closely related to the incentives for firms to undertake investment with a view to expanding and innovating production facilities: (i) the stringency of employment protection legislation, which influences the costs of hiring and firing, and (ii) the possible interactions between this legislation and industry-specific technology characteristics. However, a discussion of the importance of these factors for developing countries is beyond the scope of this report.

hence consumption. If demand for innovated and non-innovated goods were to grow at the same rate, demand effects would not skew price pressure towards one or the other group of goods, thus the supply-side effect would dominate. By contrast, if demand for the innovated good were to grow faster than for the other goods, the supply-side effect would be offset, partly or completely. And if demand were biased towards goods for which productivity gains were low (such as services), the demand effect would reinforce the supply effect. This will be the case particularly when productivity gains are high in the traded sector, while domestic consumption demand is biased towards non-traded goods.

A second important condition for innovative investment to govern the evolution of the economic system is that firms should have access to reliable, adequate and cost-effective sources for financing their investments. This condition is best met when profits themselves are the main source of investment financing. Indeed, if an investment-profit nexus can be ignited, profits from innovative investments simultaneously increase the incentive for firms to invest and their capacity to finance new investments.<sup>10</sup> When enterprises are heavily dependent on borrowing to meet their needs for fixed investment and working capital, as is the case for new enterprises, the stance of domestic monetary policy is of crucial importance, because high levels of nominal and real interest rates tend to increase production costs. In addition to its adverse impact on the cost of capital, a restrictive monetary policy may bias investment decisions in favour of financial assets, or fixed investment in production activities with known cost and demand schedules over innovative production activities for which investors face uncertainty as to the volume of sales and the true costs of production.

## **5. Transmission mechanisms between the national and the international economy**

Entrepreneurs invest in the industrial sector of that country in which they expect to realise the highest return on their investment. Cross-country differences in the expected return on investment expressed in a common currency are determined by a number of factors,

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<sup>9</sup> Note that this example assumes that the innovative and the non-innovative firms operate in different sectors, so that they are not in direct competition. If they operated in the same sector, an attempt to raise sales prices would make the non-innovative firm even more likely to be driven out of the market.

<sup>10</sup> As argued by Akyüz and Gore (1996), the presence of such an investment profit nexus played an important role in East Asian industrialisation. The investment profit nexus played an important role also in the growth performance of Western Europe during the three decades after the Second World War.

including relative rates of income growth; relative wages and labour productivity, macroeconomic and institutional factors that influence the average level of nominal labour costs in an economy as a whole; relative costs of intermediate production inputs; relative transaction costs associated with information, communications, transportation and distribution; and the use of different currencies. Moreover, market access and entry conditions and the availability of trade finance also determine whether improved cost competitiveness translates into improved export performance. This shows that a wide range of conditions must combine for firms that are competitive on the domestic market to become successful exporters.

The availability of adequate transport and communications infrastructure and information systems has a crucial influence on the ability of developing-country firms to conduct trade and to successfully compete in foreign markets.<sup>11</sup> Innovative investors in economies with comparatively high communication, transport and information costs may need to offset this disadvantage by paying lower wages or reducing costs elsewhere in the production process in order to be able to compete in world markets. Firms in countries that are landlocked or geographically distant from major international shipping routes are particularly disadvantaged in this respect. While this is a well-known problem, the impact on trade flows of other forms of trade facilitation, such as the availability of networked information technology and compliance with product standards, has gained in importance over the past few years.

Secondly, trade finance provides the liquidity for firms to bring their products to the market. Exporters with limited access to working capital often require credit to buy imported raw materials and intermediate production inputs, as well as financing to manufacture products before receiving payments. Trade finance may be provided directly through loans from commercial banks, pre-payments by buyers, and delayed payments by sellers, or indirectly from either export-credit agencies (in the form of guarantees, insurance and government-backed loans), private insurance companies, or multilateral development banks.

Thirdly, assuming constant nominal exchange rates, preserving the international cost competitiveness of domestic firms requires that the ratio of average nominal labour cost growth and average domestic productivity growth in the domestic economy does not rise

faster than in the rest of the world. Macroeconomic and institutional factors play an important role in fulfilling this condition. For example, the pressure for sharp general wage increases in an economy approaching full employment is likely to be higher than in an economy with substantial unemployment. Moreover, indexation of wage rises based on factors other than productivity growth is likely to cause substantial and lasting divergence between wage and productivity developments.<sup>12</sup>

Fourthly, stable nominal exchange rates are perhaps the single most important condition for the transmission of domestic productivity improvements to gains in international competitiveness. Exchange-rate movements alter the relative competitive position of firms in different countries. On the one hand, this implies that a currency appreciation will wipe out improvements in the international competitiveness achieved by innovative firms on the basis of improved labour productivity if the change in the exchange rate exceeds the gain in productivity. If technological progress relies on cumulative and incremental innovations that individually lead to comparatively small productivity gains, it does not take exchange-rate changes of a spectacular size for this to occur.<sup>13</sup> On the other hand, this implies that currency depreciation can give a further boost to the international competitiveness of an innovative firm and maintain the relative competitive position of non-innovative enterprises in the short run. However, there can be little doubt that long-term economic success and maintaining international competitiveness depend on sustained improvements in productivity. Moreover, resorting to currency depreciation may allow for some breathing space to adjust to changes in the relative competitive position of foreign competitors, but it also entails the risk of igniting a process of competitive devaluations.

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<sup>11</sup> Local wholesale and distribution costs also affect trade costs. But since they apply to both imports and domestic goods, they do not affect relative prices to buyers and international competitiveness.

<sup>12</sup> This is the case, for example, if wage increases are indexed to inflation, and if external supply shocks such as price increases of imports (e.g. oil) have a strong impact on inflation.

<sup>13</sup> For example, according to Gordon (2003: 208), the average annual rate of growth of labour productivity in the United States during the period of the information and communications technology boom (1995–2000) was about 2.5 per cent.

### **Box: Cost competitiveness at the enterprise level and export performance**

To understand how the mechanisms discussed in this paper work in practice, it is useful to consider a two-country world comprising a developing country, with a low average level of both labour costs and labour productivity, and a developed country, with a high average level of labour costs and labour productivity. Expressed in a common currency, these levels are assumed as 5 and 10 in the developing country and 50 and 100 in the developed country (case 1 in the table). Furthermore, assuming that in both countries the average level of labour costs reflects the average level of labour productivity, firms in both countries face the same average level of unit labour costs (i.e. 0.5 currency units). If labour is the only internationally immobile production factor, these assumptions imply that firms from both countries are, on average, internationally competitive. Moreover, if firms set sales prices on the basis of a mark-up of 100 per cent over labour costs, the absolute level of profits in the developed country will be 10 times higher than in the developing country.<sup>14</sup>

Case 2 in the table introduces the effects of innovative investment by assuming that productivity increases by 20 per cent in innovative firms of both countries. If the weight of these firms in their domestic economies is too small for these productivity gains to have a marked impact on the economy-wide average level of productivity, nominal labour costs will remain unchanged, and unit labour costs in the innovative firms will decline by 20 per cent. Profits per unit of output will also remain unchanged if the innovative firms reduce their sales prices in line with the decline of their unit labour costs. This implies that the innovative firms from both countries will experience an increase in both their export-market shares and their absolute level of profits. By contrast, non-innovative firms will suffer a decline in export-market shares and in profit levels due to the increase in their sales prices relative to those of the innovative firms.

Case 3 in the table shows that affiliates of TNCs can gain considerable advantages in international competitiveness by combining developed-country technology with developing-country labour costs. The levels of the affiliate's unit labour costs will be substantially lower

<sup>14</sup> However, the developed country will tend to employ a higher stock of capital in production than the developing country. Thus the rate of return over capital (i.e. the absolute profit relative to the value of the capital stock) may be very similar in the two countries. In other words, the example relies on the assumption that the internationally immobile factor – labour – absorbs the entire wealth difference between the developed and the developing country, while the internationally mobile factor – capital – obeys the law of one price.

than of either its parent company in the developed country or of domestic firms in the developing country. While it is unlikely that the relatively less educated workers in the developing country can match the productivity level of workers in the developed country, it is probable that the TNC will experience a strong reduction of its unit labour costs by moving its labour-intensive production activities to a low-wage country.

Changes in the nominal exchange rate that are caused by “autonomous” capital flows (i.e. that are unrelated to the flow of goods) can offset the effects discussed above. In case 1, export-market shares will move from firms of the country whose currency appreciates towards firms of the country whose currency depreciates, even though none of the firms has undertaken productivity-enhancing investments and unit labour costs, measured in domestic currency units, have not changed in any of the firms. More importantly, the innovative firms in case 2 will lose, rather than gain, export-market shares if the appreciation of the exchange rate exceeds productivity gains. For example, assuming the currency of the developing country to appreciate by more than the productivity gains achieved by innovative firms, these firms will lose export-market shares to both the innovative and non-innovative firms of developed countries. This example shows that adverse external monetary shocks can wipe out the gains resulting from an improvement in the international competitiveness of developing-country exporters based on innovative investments and a decline in unit labour costs.

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### Innovative investment, exchange rate changes, and international competitiveness: a numerical example

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	Case 1		Case 2				Case 3
	No innovative investment		Innovative firm average <sup>a</sup>		Non-innovative firm average		TNC affiliate investing in developing-country export-oriented production
	Developing country	Developed country	Developing country	Developed country	Developing country	Developed country	
Productivity	10	100	12	120	10	100	120>productivity>10
Nominal labor costs	5	50	5	50	5	50	5
Unit labour costs	0.5	0.5	0.4	0.4	0.5	0.5	0.5>ULC>0.04
Profits per unit of output	5	50	5	50	5	50	115>profits>5
Price	1	1	1-x	1-y	1+x	1+y	1-z

  

1. Unchanged nominal exchange rate							
Export market share	unchanged	unchanged	up	up	down	down	up
2. Nominal exchange rate <sup>b</sup>							
appreciation by more than 20 per cent							
Export market share	down	up	down <sup>c</sup>	up <sup>c</sup>	down <sup>c</sup>	up <sup>c</sup>	up
3. Nominal exchange rate <sup>b</sup>							
Export market share	up	down	up <sup>c</sup>	down <sup>c</sup>	up <sup>c</sup>	down <sup>c</sup>	up

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**Source :** Authors' calculations.

**Note :** x and y are the shares of the innovative investors' products in total consumption of their respective economies. z is the share of the multinational firm's reimported product in total consumption of the economy of the parent company.

**a** The scenario in the table is based on the assumption that innovative investors fully transmit gains in profits per unit of output into price reductions.

**b** Developing-country currency/developed-country currency.

**c** The net effect depends on the relation between the gain in productivity and the exchange rate misalignment.

The assumption for the effects noted in the table is that the misalignment is far greater than the gain in productivity.

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## 6. Measuring competitiveness: the real exchange rate

Given the complexity of the issue of competitiveness, it is not surprising that there is a multitude of competitiveness indicators. Some analysts use competitiveness indices that combine several dozens of individual measures spanning across a wide range of economic and non-economic factors. The probably two best-known competitiveness indices, contained in The Global Competitiveness Report of the World Economic Forum and in The World Competitiveness Report of the International Institute for Management Development, are frequently invoked in policy discussion and economic policy making. However, the way these indices combine the very large range of individual indicators is not transparent and, more

importantly the complex theoretical issues that underlie the concept of competitiveness are insufficiently discussed.<sup>15</sup>

By contrast, the indicator that is most widely used in applied economic analysis is the real exchange rate based on relative price and/or cost indices expressed in a common currency. Real exchange-rate indices based on relative unit labour costs may be the preferred measure of competitiveness, in particular for economies with a well-established industrial base and strong backward linkages. This measure is defined as the ratio of employee compensation (including non-wage labour costs) per employee and the volume of output (value added at constant prices) per employee expressed in a common currency. Thus, relative unit labour costs depend on relative labour costs per worker, relative labour productivity and the exchange rate. As such, a 10 per-cent slower rise in nominal labour costs, a 10 per-cent depreciation in the exchange rate or a 10 per-cent faster increase in labour productivity all have an identical impact on measured relative unit labour costs. Moreover, the real exchange rate based on relative unit labour costs allows the decomposing of changes in international competitiveness into the relative impact of changes that emanate from the domestic economy (i.e. productivity gains and nominal wage changes) and those that have their origin in international relations (nominal exchange rate changes).<sup>16</sup> A drawback of this measure is that it tends to overestimate the impact of exchange-rate changes on the competitiveness of domestic exporters to the extent that exports rely on imported intermediate inputs. A relatively high import content of exports offsets, to a considerable degree, the competitive edge provided by nominal currency depreciations. Moreover, comprehensive data required to calculate relative unit labour costs are not available. This explains why empirical assessments of changes in real exchange rates usually rely on changes in relative consumer prices.<sup>17</sup>

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<sup>15</sup> However, Lall (2001) has significantly contributed to a clarification of how these indices are actually constructed.

<sup>16</sup> Some analysts, such as Boltho (1996), have argued that using the real exchange rate as an indicator for competitiveness reflects short-term macroeconomic management concerns. However, when countries are subject to frequent external shocks, such as significant volatility in the nominal exchange rate or in commodity prices – that have an adverse effect on the country's terms of trade – or lasting exchange rate misalignments, concerns about the level of the real exchange rate also reflect long-term development objectives.

<sup>17</sup> However, Turner and Golub (1997) show that, for most countries for which comprehensive data are available, there is a substantial positive correlation between the two measures of real exchange rates, even though large differences between the two measures occur over the medium term, in particular for developed countries.

## **7. Undervaluation as a general solution?**

For policy makers in developing countries, the fact that exchange-rate changes can influence the overall competitiveness of a country and have the potential to directly improve the overall trade performance of the majority of their firms and the balance of payments is a promising prospect. On the other hand, the use of the exchange rate as a powerful tool of economic policy is often strictly limited by the influence that the global capital market and the policy of other countries exert on that rate. The exchange rate of any country is, by definition, a multilateral phenomenon, and any rate change has multilateral repercussions.

In the last three decades, developing and emerging-market economies in all the major regions have had to struggle with financial crises or their contagion effects once they have tried to manage the exchange rate unilaterally or even opted for free floating. Nevertheless, in the Bretton Woods era, as well as in the period of floating or managed floating thereafter, some patterns of successful adjustment to the vagaries of the international capital market emerged, which have been increasingly adopted by developing countries' economic and financial policies. Since the Second World War, some experiences of successful catching up – such as by Western Europe, Japan and the newly industrialising economies (NIE) – suggest that, among other factors, long-lasting currency undervaluation can be extremely helpful to fully reap the benefits of open markets. Today, as multilateral arrangements do not exist on a global scale, a strategy to avoid overvaluation by any means has become the preferred tool of many governments and central banks.

This is in stark contrast to the experience of the 1990s in Latin America. During that decade many Latin American countries maintained hard or soft currency pegs with some overvaluation during the 1990s, and used the exchange rate as a nominal anchor to achieve rapid disinflation. This led to an impressive improvement in their monetary stability (Fischer, 2001: 9; Mussa et al., 2000) but also to currency appreciations that impaired the competitiveness of exporters in these countries. Today, with inflation rates being relatively low and stable due to favourable domestic conditions, adopting a strategy designed to avoid currency overvaluation has become feasible for a much larger number of developing countries. Indeed, many developing countries (such as China, Brazil and South Africa) have recently sought to avoid a revaluation of their currencies through direct central bank

intervention, with the result that they have accumulated substantial amounts of foreign-exchange reserves.

It is clear that for these countries, avoiding currency overvaluation is not only a means to preserve or improve macroeconomic competitiveness, but also an insurance against the risk of future financial crises. The accumulation of current-account deficits, and frequent financial crises, with overshooting currency depreciations, proved very costly in the past. Surges in inflation, huge losses of real income, and rising debt burdens have been a common feature of all recent financial crises.

However, as TDR 2004 shows, a strategy of avoiding currency overvaluation cannot easily be implemented if the capital account is open. If inflation rates in developing countries exceed those in the developed world, or if there are expectations of an imminent currency appreciation, monetary policy will often face a dilemma in trying to keep the exchange rate stable and yet at a level that preserves the international cost competitiveness of the country's exporters. Calculations by the UNCTAD secretariat show that even a slightly diverging inflation trend between two open economies is sufficient for highly volatile short-term international capital flows to force the central bank of the country with high inflation to give up its undervaluation strategy or to face the severe fiscal costs that can be associated with this strategy.<sup>18</sup>

The results of these calculations are straightforward. Only if the nominal short-term interest rate in a financially open emerging-market economy exceeds that in a developed country by more than the growth differential, the nominal exchange rate of the former should depreciate at a (annual) rate that equals the difference in (annual) interest rates. If this is not the case, the situation is not sustainable, as either the high interest rate or the overvalued exchange rate hampers sustainable economic development in the emerging market economy.

Hence the political choice to combine floating of the currency with restrictive domestic monetary policy to bring down inflation will destabilise the external account. Speculation on uncovered interest rate parities will yield high returns to arbitraging

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<sup>18</sup> Diverging inflation trends in open economies are much more important for the viability of an exchange rate strategy than the usually discussed "asymmetric shock", first introduced by Mundell in his paper on optimum currency areas (Mundell, 1961). With diverging inflation trends grounded in different labour market regimes, the arguments used to defend hard pegs or dollarisation (e.g. Calvo, 1999) no longer apply, as long-lasting remedies to preserve competitiveness are sought and not just one-off measures.

international portfolio investors, as nominal and real interest rates in the developing economies are higher than in the leading industrialised economies. The currencies of the high-inflation countries will tend to appreciate, thereby, temporarily, even increasing the incentive for foreign investors to buy domestic assets and the incentive of domestic borrowers to borrow abroad.

Overall, the dilemma for developing-country policy-makers of a situation in which international investors earn high rates of return in their countries, despite falling real income, domestic profits and employment, cannot be resolved under conditions of free capital flows. Developing-country policy-makers are usually unable to reduce interest rates to stop the speculative capital inflow, because doing so would endanger the credibility of their monetary policy domestically. The political will to achieve economic stability is reflected in the decision to keep nominal interest rates high. How long an external economic imbalance following an exchange rate peg or an appreciation can be sustained is an open question. With growing visible external imbalances, the developing country's exchange-rate policy will begin to lose credibility in markets. Once investors are convinced that the anchoring country will not be able to manage slowing down the growth of its external debt smoothly, confidence will deteriorate. This will lead to renewed crisis, a reduction of reserves and eventually a depreciation of the country's exchange rate.

In any case, exchange-rate changes are necessary to compensate for the opening scissor blades of the price and cost developments between a high-inflation and a low-inflation country. As long as developing countries are not able to converge perfectly in nominal terms with the developed countries, devaluations are unavoidable in order to preserve the competitiveness of the high-inflation countries. However, exchange rate changes, and in particular, real exchange-rate changes, that determine the competitiveness of the whole economy, cannot be left to the market. Given the arbitrage opportunities between high- and low-inflation countries, a rule of competitive neutrality of the exchange rate, like the PPP rule, has to be enforced by governments and/or central banks. Ideally, such a rule should be the result of multilateral agreements, as exchange-rate changes always have multilateral repercussions. But if the international community is not able to agree on rules to avoid competitive devaluations and huge destabilizing shocks, countries will continue to manage the floating of their currencies unilaterally.

Managed floating, however, faces an adding-up problem on the global scale. Not all countries can simultaneously manage the movements of their exchange rate and achieve their targeted rates. The exchange rate, by definition, is a multilateral phenomenon, and attempts by many countries to keep their currencies at an undervalued rate may end up in a race to the bottom – or in competitive devaluations – that would be as harmful for the world economy as in the 1930s. Moreover, given the size of international short-term capital flows and the inherent volatility of these flows, only those developing countries that are big and competitive enough to withstand strong and sustained attempts of the international financial markets to move the exchange rate in a certain direction, will be able to manage the floating successfully. A small and open developing economy will hardly be able to continue fighting a strong tendency to appreciate over many years or even decades.

Multilateral or even global arrangements are clearly the best solutions to this problem. The idea of a cooperative global monetary system would be to assure, on a multilateral basis, the same rules of the game for all parties involved, more or less in the same way as multilateral trade rules apply to every party equally. That is why the main idea behind the founding of the International Monetary Fund in the 1940s was to avoid competitive devaluations. In a well-designed global monetary system, the need and the advantages of the currency depreciation of one country have to be balanced against the disadvantages to the others. As changes in the exchange rate, deviating from purchasing power parity, affect international trade in exactly the same way as changes in tariffs and export duties do, such changes should be governed by multilateral regulations. Such a multilateral regime would, among other things, require countries to specify their reasons for real devaluations and the dimension of necessary changes. If such rules were strictly applied, the real exchange rate of all the parties involved would remain more or less constant, as strong arguments for creating competitive advantages at the national level would rarely be acceptable.

In a world without a multilateral solution to the currency problem, the only way out for high-inflation or high-growth countries that are not members of a regional monetary union is to resort to controls of short-term capital flows or to follow a strategy of undervaluation and unilateral fixing. If developing countries are able to avoid destabilising inflows and outflows, either by taxing those flows or by limiting their impact through direct intervention in the market, the hardest choices and misallocations due to erratic exchange-rate changes can be

avoided; but the resort to controls or permanent intervention should not replace the search for an appropriate exchange rate system at the regional or global level.

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