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Abstract

The Middle East is fortunate to have large endowments of oil and gas. The economies of the Middle East vary considerably, but in this paper I will reduce the complexities of the region's endowments to two groups: Gulf States which have massive endowments and small populations, and other states which have more moderate endowments and much larger populations: I will refer to the latter as Middle-Income Middle-East States, or MIMES. These differences in endowments and populations have implications for both the decision as to how much of resource revenues should be saved, and how much of the savings should be invested domestically. Principles and rules for saving and investment appropriate to Gulf States and MIMES are discussed in this paper.

JEL Classification: O1, O5, P2

Keywords: Saving and Investment, Oil and Gas Endowments, Gulf Countries, Middle-income Middle-East States.

ملخص

يعد الشرق الأوسط الأكثر حظا بما لديه من منح كبيرة من النفط والغاز. تختلف اقتصاديات الشرق الأوسط اختلافا كبيرا، ولكن في هذه الورقة سوف نقلل من تعقيدات المنح في المنطقة من خلال تقسيمها إلى مجموعتين: دول الخليج التي لها منح ضخمة وقليلة السكان، وغيرها من الدول التي لديها منح أكثر اعتدالا وعدد سكان أكبر بكثير: سوف أشير إلى هذه الأخيرة بدول الشرق الأوسط المتوسطة الدخل. هذه الاختلافات في المنح والسكان لها آثار على القرارات المرتبطة بمدى الذى يجب ادخاره من إيرادات الموارد، ومدى استخدام هذه المدخرات فى الاستثمار المحلي. وتناقش هذه الورقة مبادئ وقواعد الادخار والاستثمار المناسب لدول الخليج ودول الشرق الأوسط المتوسطة الدخل.

1. Introduction[1]

The Middle East is fortunate to have large endowments of oil and gas. The economies of the Middle East vary considerably, but in this paper I will reduce the complexities of the region's endowments to two groups: Gulf States which have massive endowments and small populations, and other states which have more moderate endowments and much larger populations: I will refer to the latter as Middle-Income Middle-East States, or MIMES. These differences in endowments and populations have implications for both the decision as to how much of resource revenues should be saved, and how much of the savings should be invested domestically.

Savings behaviour should be distinctive because, unlike most other sources of tax revenue, the government revenues from the depletion of oil and gas are unsustainable and volatile. Revenues from the extraction of fossil fuels are unsustainable not only because they are finite and so a country might physically exhaust its endowment, but also because due to global warming it is not possible to burn all of the fossil fuels that have been discovered without overheating the planet. This implies that at some point during the current century either extraction will be capped by regulation or non-fossil energy technologies will have been developed that make fossil fuels redundant. Both the unsustainable nature of revenues and their volatility imply that the savings rate appropriate for resource revenues should differ from that on other revenues. Most OECD countries do not have significant resource revenues, and so their fiscal rules do not need to incorporate these considerations. Hence, for the savings rates of MIMES to be appropriate to their circumstances, the fiscal rules they adopt should differ from the OECD. Further, the fiscal rules of Gulf States should differ from those of the MIMES. I discuss the principles and rules for saving appropriate to Gulf States and MIMES in Section 2.

Middle East governments will also need distinctive policies towards investment. The MIMES should usually invest much of their savings from resource revenues domestically. Hence, the typical MIME will need to develop greater capacity for managing public investment than a country at the same level of income but without natural resources. In contrast, because the populations and territories of Gulf States are so small they have relatively few opportunities for productive domestic investment. Hence they need less capacity for managing domestic real investment than other countries at the same income level. I discuss the principles and rules for investment appropriate to Gulf States and MIMES in Section 3.

2. Savings Policies

Resource-rich countries need savings policies that offset the long term depletion of natural assets and manage year-to-year volatility. I consider them in turn.

2.1 Principles of offsetting depletion

The most straightforward framework for thinking through savings decisions from resource extraction is that of 'permanent income'. The framework provides a simple principle for the appropriate savings from a new income stream which is expected to be temporary. This is that sufficient savings should be accumulated to achieve the highest steady stream of consumption that can be sustained permanently. In turn, the highest steady stream of consumption can be estimated by taking the net present value (NPV) of the income stream, and then applying the expected return on assets to this value. Such a framework is not appropriate in all contexts: low-income countries which are rapidly converging on higher-income countries need a more sophisticated approach which recognizes that it is sensible to consume the resources now while the economy is poor, rather than save for a distant, much more prosperous future. However, for the Middle East the permanent income approach is

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[1] A fuller treatment of the themes discussed in this paper is in Collier (2010).

reasonable: the region is not so poor as to be confident of a phase of rapid catch up, so that exhausting oil and gas endowments without regard for future generations would not be ethically reasonable.

While the 'permanent income' (maximum sustainable consumption) from resource extraction is estimated by taking the NPV of the income stream, this does not imply that all resource revenues should be saved. Some of the revenues should indeed be set aside to accumulate as assets, but only at the point when the resource is exhausted will these assets generate sufficient income fully to cover the extra consumption that is warranted by the discovery. Thus, through the duration of extraction, some of the resource revenues should entirely legitimately be used for consumption, financing the shortfall between the consumption that is warranted and the income from accumulated assets.

Year-by-year, the appropriate savings rate from resource revenues depends upon their expected trajectory: how long will the resource last until exhaustion, and what will be the shape of revenues? The key insight can be seen from an extremely simple trajectory in which resource income is expected to be constant until the resource is exhausted after a known period of years. The first savings rule is that *the shorter the horizon until expected depletion the higher should be the savings rate*. This follows straightforwardly. For any given annual revenue, the shorter is the extraction period the lower is the present value of the resource endowment and hence the lower is the sustainable increase in consumption. With less consumption warranted from a given resource revenue, the higher is the proportion of revenues that should be saved.

A second savings rule follows from the first: *the savings rate should rise as resources are depleted*. Each year the horizon to full depletion is shorter and so the appropriate savings rate is higher. I term this *the depletion effect*. A simple way of thinking about this is that as depletion occurs and some revenues are saved, the stock of non-resource assets gradually accumulates. In turn, this rising stock generates a rising *sustainable* income, all of which should therefore be used to finance consumption. As a result, the level of consumption warranted by the natural resource endowment can increasingly be financed from these sustainable revenues. Less of the revenues from resource depletion need to be used for consumption: hence, more is left over for savings.

2.1.1 Adding some complexity

In practice, the most trajectory of expected resource revenues is unlikely to be flat until exhaustion. If revenues are not expected to be flat this generates a further effect on the rate of savings which is appropriate which I term the *extraction effect*. If resource revenues are expected to keep rising until the time of exhaustion, this reinforces the case for the savings rate out of revenues to rise over time: if resource income will be higher in the future it is warranted to consume a higher proportion of it now than later. If resource revenues are falling then the argument works in reverse and so the two effects oppose each other. However, even in this case the depletion effect will eventually predominate because as exhaustion approaches the optimal savings rate becomes very high. The most likely path of the quantities extracted from a discovery is hump-shaped: a phase in which the investment in extraction is building up is followed by one in which extraction becomes progressively more difficult as the most accessible resources have already been removed. Hence, the trajectory of revenues is likely to be hump-shaped. This turns out to reinforce the need for the savings rate to rise over the course of depletion. The first phase, of rising revenues, directly reinforces the need for the savings rate to rise, whereas the second phase, of falling revenues, occurs late enough in the overall trajectory of depletion that the depletion effect predominates. Hence, in the 'normal' case of a hump-shaped extraction path, the added complexity involved in allowing

for the fact that the expected trajectory of revenues is not flat ends up simply reinforcing the need for a rising savings rate.

A second complexity is that whereas the Gulf States have full access to international capital markets, the MIMES have limited access, especially in those subject to political uncertainties. While they can lend at world interest rates, they are constrained in the amount they can borrow. To see the consequences most clearly, suppose that the global rate of time preference is zero but that in the MIMES the domestic rate of time preference is high. To keep the analysis as straightforward as possible I will return to the assumption that revenue is flat until exhaustion. As extraction proceeds, the time profile of the remaining extraction shortens: each year it is as if the most distant year of extraction has been 'lost'. As extraction proceeds, the final 'lost' year gets progressively closer. The large difference between the domestic and the international social discount rate has an important implication for the valuation of this sequence of 'lost' years. For example, after the first year of a twenty-year discovery, the 'lost' twentieth year of extraction is not very valuable because, having been discounted at a high rate over a twenty year horizon, its NPV is only a small fraction of its eventual value. But after the nineteenth year, the 'lost' year is not the twentieth year of extraction but the second, and so the NPV of the loss is much greater. In consequence, because of the high social discount rate, in MIMES the value of resources remaining in the ground declines at an *accelerating amount*. In turn, this has unambiguous implications for the savings rate. Since resource wealth is declining by an accelerating amount, other assets must be accumulated by an accelerating amount. Hence, the amount saved must increase each year so that the rate of savings must rise. I term this the *divergent discount rates effect*: as with the two other effects, its implication is that the savings rate needs to rise over time.

2.1.2 Implications for policy rules

To summarize the theory discussed above, both Gulf States and MIMES should be aiming to convert their unsustainable resource incomes into sustainable consumption by saving a substantial share of their revenues. The rate of savings needs to be higher in the MIMES than in the Gulf States because the expected duration of resource revenues is much shorter. In both groups of countries the appropriate savings rate should be rising over time, perhaps rising somewhat more rapidly in the MIMES because their social discount rates are higher than in the Gulf States. As an illustration, suppose that the Gulf States have a horizon until exhaustion of oil and gas revenues of 70 years, given by future global concern over carbon emissions, while the MIMES have a horizon of 30 years given by physical exhaustion of their endowments. In 2013 the Gulf State may need to have a savings rate out of their resource revenues of around 30 percent, gradually rising to 100 percent by 2083. Hence, on this illustration, the savings rate of the Gulf States would rise by one percentage point each year. The MIMES may need to start with a rather higher savings rate of 50 percent. This would also need to rise to 100 percent by exhaustion which would occur in 2043. Hence, the savings rate in the MIMES would need to rise by nearly two percentage points each year.

Practical policy rules are set in budgets which are essentially decision processes for allocating revenues to a variety of expenditures. Over recent decades two principles of good budgeting have been widely accepted; one macro the other micro. The macro principle is that aggregate expenditures should be kept broadly in line with aggregate revenues (which for present purposes we will treat as exogenous). Commonly, this principle has been encapsulated in the *balanced budget rule* which sets ceilings both for the fiscal deficit and for the ratio of debt to GDP. The micro principle is that the marginal benefit of expenditures should be equated across categories. Since it is reasonably assumed that priorities will change over time, this principle has been encapsulated in the *integrated budget rule* which discourages pre-commitments of revenues, and earmarking of particular revenue streams, to particular items of expenditure.

Resource-rich developing countries face distinctive fiscal problems, the solutions to which involve distinctive principles. They therefore need distinctive rules which encapsulate these principles. At the core of the distinctive problem is that, unlike other countries, the key revenue source for government spending is *unsustainable*. Manifestly, this is not a marginal problem: unless it is properly faced the consequences for welfare are liable to be disastrous. Hence, we should not expect it to be adequately dealt with by minor tweaks to the budget process. It is particularly problematic because inter-temporal resource allocation is an issue that standard budget procedures barely address: budgets are essentially devices for annual commitment. At the most, governments announce Medium Term Fiscal Frameworks, but these are essentially informal statements of intentions over a three year horizon; not only do these statements of intent have only limited credibility, there is no intention that they will bind a successor government beyond an election.

The distinctive principle for a resource-rich country is that a certain proportion of revenues should be saved, whether in financial assets or domestic investment. Conventional budgeting processes are inadequate to deal with this problem in two important respects. First, they lack any mechanism for inter-temporal commitment, most especially over the horizon of around a generation which is likely to be required for resource depletion. Commitment technologies are valuable to governments to reduce the risk of temporary lapses resulting from random short term political pressures: that is indeed why they adopt the balanced budget rule and the integrated budget rule. But in the case of savings out of resource revenues a commitment technology is even more important. It is not just that without it there is a risk of a random lapse; rather, without it the incentive to save is reduced even for a good government. Without a commitment mechanism, the savings of one government may merely transfer spending power to a bad successor. Indeed, the rationale for augmenting permanent income depends upon the current government believing that *all* future governments will behave prudently. In the absence of a rule, a good government may reasonably decide that it is better to spend all the revenue now on items that it regards as desirable, rather than risk its savings being spent by a successor government on items that the current government regards as less valuable. Worse, without a commitment technology, as wealth accumulates the incentive to be a rogue government that favours only expenditure on consumption actually increases. Hence, a long-term savings rule is not a mere nice-to-have addition to the standard budget rules, it is paramount.

The second respect in which conventional budget design is inadequate is that while the key analytic building blocks concerning resource depletion are about savings and consumption, budgets work with the concepts of expenditure and revenue. Revenues equal the sum of consumption and asset accumulation (savings), but expenditures are the sum of consumption and domestic investment, a component of asset accumulation. Since a balanced budget rule is defined in terms of expenditure relative to revenues, it misses the key required distinction between expenditure on consumption and the acquisition of assets. Domestic investment, which is aggregated under the balanced budget rule with consumption as expenditure, is the activity which for a resource-rich country it is most important to distinguish. Hence, a recent IMF practice of modifying the balanced budget rule so as to exclude resource revenues – through the concept of 'the non-oil fiscal balance' – has no analytic basis in the need to offset resource depletion. Indeed, the government of a resource-rich developing country which actually constrained total expenditure to be equal to non-resource revenue would be massively misallocating its resource revenues, both under-consuming and under-investing. Conventional budget rules cannot be restored to relevance simply by setting resource revenues to one side. Rather, the principles underlying the optimal management of resource revenues must be woven into the foundation of a distinctive set of budget rules.

In its unmodified form, a balanced budget rule applied to a resource-rich country would preclude the accumulation of assets other than through domestic investment, and so seriously distort the process of asset accumulation. In its modified variant of the 'non-oil balanced budget' it has the opposite distorting effect of squeezing out domestic investment. Now consider the integrated budget rule: the principle that all expenditures should be left uncommitted so as to be freely allocated each year. This is also fundamentally at odds with the need to pre-commit some revenues to asset acquisition. Without such pre-commitment there is little chance that the marginal equivalences between expenditures, which are normally the ultimate justification for an integrated budget, can be maintained.

Were the government to have full information about all future needs and revenues, the optimal budget process for a resource-rich developing country would not be a series of annual budgets, but rather a single inter-temporal budget over the horizon of resource depletion. Such a budget would incorporate the optimal path of asset accumulation, thereby achieving the marginal equivalence between the value of current and future consumption. Obviously, no government has full information and so such a comprehensive budgeting process is inappropriate. The solution is to leave open as many expenditure decisions as possible, locking in only to the minimum necessary to ensure the inter-temporal equivalence of consumption expenditures. This is what is achieved by the rule of the rising savings rate. Having pre-determined savings, the composition of savings as between domestic investment and financial assets can be left open to the annual budget, as can the allocation of consumption spending between items. If we conceptualize all present and future uses of revenue as a matrix, with the rows being the years and the columns the various uses, the annual budget pre-commits the current row, while the rule of the rising savings rate pre-commits the assets column. All other items can be left for future decision. This structure mirrors the pattern of markets, with the markets for goods largely confined to the present period, while transactions concerning future periods are accommodated in an aggregated form through the capital market. Hence, the rule of the rising savings rate replaces the balanced budget rule but introduces a constraint into the integrated annual budget rule: aggregate expenditure on assets is ring-fenced.

The distinctive nature of budgeting in a country which receives major revenues from depleting its natural assets is of considerable practical importance. Globally, around 20 percent of *sustainable* tax revenues are saved: that is, they are used to acquire assets. In contrast, the appropriate savings rate for *unsustainable* revenues that can only be relied upon for the next 25 years, should probably start at over 30 percent, and gradually rise during the 25 years to close to 100 percent. Thus, the appropriate savings rate is radically different. Further, the allocation of these savings between domestic and foreign assets will differ radically. In the case of sustainable revenues, savings will be fairly stable and virtually all of the assets acquired will be in the form of domestic investment. In contrast, the savings from unsustainable revenues will be far from stable. They will initially leap as revenues come on stream, be subject to volatility as resource prices change, and rise considerably as exhaustion approaches. As a result, the appropriate allocation between domestic and foreign assets will change considerably from year-to-year, and should also reflect changes in the capacity of the economy to absorb domestic investment productively.

2.2 Managing volatility
Government revenues from natural resource extraction are volatile, primarily because prices are volatile. Since volatility in public expenditure is costly both politically and in socially, expenditures should be smoothed. This implies that revenue fluctuations should be accommodated either by changes in assets or by insurance. Volatility occurs both within years and between them.

2.2.1 Intra-year volatility

An annual budget incorporates, explicitly or implicitly, an assumption about the average price of the resource over the coming year and this assumption will inevitably prove incorrect. However, for oil it is now possible to hedge prices over this horizon. The whole point of annual budgeting is to enhance the coherence of spending, and so there is value in reducing uncertainty over intra-year revenues. Among hedging strategies, the first choice is in the form of payment. Either the payment can be explicit: a known expenditure to purchase a floor price, or the floor price purchased in exchange for a ceiling price. As between these, the former is likely to be preferable. Whereas it is important to avoid receiving a price below the floor price, there is no equivalent need to avoid particularly high prices since above some ceiling all revenues should be saved and marginal additions to such savings incur no cost. Hence, there is no point in paying an implicit risk premium to eliminate this range of uncertainty. Further, while the use of a ceiling may appear to have political advantages, disguising what would otherwise be an explicit budgeted payment, the circumstances in which it is triggered may be particularly damaging politically. Namely, an insurance against a very low price which has *a fortiori* turned out to be unnecessary has been paid for by sacrificing a high price which has materialized. A routine annual insurance premium for the purchase of a floor price securing the budget may be politically less exposed.

Having determined the form of payment, the remaining hedging choice is the precise floor price to be chosen. In the neighbourhood of the mean of market expectations, an additional dollar on the floor price will increase the cost of the hedge by around 50 cents. Hence, in this range half of the marginal revenue generated is eaten by the hedge: manifestly this is far too large a proportion to be warranted politically. An implication is that a floor price hedge should pitch the floor price conservatively, below the mean of market expectations. In fact, the floor price does not normally need to be particularly close to the mean of market expectations. The floor price is not itself a forecast but rather a way of protecting expenditure. Planned expenditure will on average be below expected revenue partly because not all planned savings will be invested domestically, and partly because expected revenues will be conservatively estimated due to a risk discount.

Hence, where the market expectation for the coming year is equal to the long run expected price, the hedged floor price needed to protect expenditure will be below this level.

Would hedging be more valuable for the Gulf States or the MIMES? Although the Gulf States need a lower overall savings rate out of resource revenues, much of their savings should be placed abroad rather than invested domestically. Since there is no need to protect the additions to foreign assets from volatility, there is no need to hedge such planned uses of revenues. In contrast, the MIMES may find that a high proportion of their savings to offset depletion should be invested domestically. Since volatility in domestic investment would be costly, they would probably benefit more from hedging their revenues.

2.2.2 Inter-year volatility

The revenues prevailing in any one year may be above or below the expected path. As long as actual (post-hedged) revenues are above planned expenditure for that year then it is of no consequence for spending if they are below their expected level. All the difference between actual and expected revenues can be borne by a deviation of actual financial savings from planned financial savings. If, however, actual revenues are below planned expenditure then either actual spending falls short of plans or the shortfall is financed.

In principle, finance can be through either borrowing or drawing down savings. However, in practice the two are often not alternatives. The ability to borrow depends upon a record of prudent savings and the prior accumulation of liquid assets. MIMES cannot rely upon continuous access to capital markets and so will need to accumulate financial assets.

However, for MIMES liquid savings have an opportunity cost in terms of more productive assets foregone. Hence, not all possible scenarios of needs for liquid savings should be accommodated: there will be times at which actual expenditure will indeed need to fall below planned expenditure. As liquid assets are drawn down, actual expenditures should be pre-emptively reduced to avoid the risk that finance will be exhausted, forcing a large, abrupt reduction in expenditure. In effect, this override is a second line of defence against an overly optimistic assessment of the path of future revenues, protecting accumulated assets intended to offset depletion from being used to finance an unsustainable level of consumption.

If revenues exceed planned expenditure then the surplus should evidently be saved. However, there are two distinct functions for such savings: the accumulation of liquid savings to buffer expenditure, and the accumulation of longer-term financial assets as part of the strategy of offsetting the depletion of natural assets. Although in MIMES in the long run a large majority of the assets that offset depletion should usually be domestic, the decision as to the composition between foreign and domestic investments should be taken year-by-year and reflect the limits on current capacities to invest well within the economy. There is therefore a need for some decision rule as to how much of the excess of revenues over planned expenditure should be used for future smoothing, and how much should be used for long term portfolio investment. As I discuss below, political considerations make it desirable to have distinct funds for these two purposes. The allocation might be decided according to whether the smoothing fund is at or below its target level. Until the fund reached this level all savings into foreign financial assets would be allocated to it, and beyond that all would be allocated to offsetting depletion.

To summarize, planned expenditure is derived from the path of expected revenues. Having determined planned expenditure for the coming year, these plans should be implemented even in the face of revenue shortfalls, subject to an override reflecting concerns over liquid savings. Because expenditure is to be protected from revenue fluctuations, it is important that there is a responsible process of regular updating of expected revenues, so that planned expenditure is based on realism tempered by risk. The override requires planned annual spending to be reduced if the country encounters a run of unexpectedly low revenues which drains liquid savings to a dangerous level.

The key operational concepts are the optimal level of expenditure, the average level of liquid savings to be held for maintaining expenditure at this level, and the rules for overriding the drawdown in savings. In turn, setting these parameters should rest on an analysis of the likely volatility of revenues, and the likely costs of volatility in expenditure.

In equilibrium the government will thus be holding foreign financial assets for two different purposes, expenditure smoothing and offsetting depletion. There is a good case for holding these assets in separate funds, with distinct rules. The key difference is that the depletion offset fund needs to be protected from being plundered to finance consumption. As discussed above, the distinctive challenge facing resource-rich societies is the need for commitment to long term asset accumulation. Hence, this needs to be embodied in the rules of the depletion offset fund. The rules cannot, however, be as simple as saying that financial assets cannot be liquidated, since it will be optimal gradually to shift the composition of the fund from foreign financial assets to domestic investment. Hence, the rule should be that *assets cannot be liquidated to finance consumption.* To distinguish this accumulation of both foreign and domestic assets from a conventional Sovereign Wealth Fund, I refer to it as a *Sovereign Development Fund*. In contrast, this is the part of the legitimate purpose of the smoothing fund. It is not the only purpose, since the fund is meant to smooth all expenditure, both on consumption and investment. Hence, for this fund, the rule should be that the assets cannot be liquidated to finance expenditures in excess of the planned expenditure. Further, it might be

useful to place the implementation of the hedging rule within the smoothing fund: analytically, it is a means of achieving expenditure smoothing, and politically it enables the Finance Minister to be distanced from the decision to spend money on any particular hedge which may or may not turn out to have been vindicated by events. The purpose of the fund is thus to make expenditure resilient to revenue shocks, whether by hedging or by the accumulation of liquidity, and so we term it a *Sovereign Liquidity Fund*.

Gulf States can ride out revenue volatility by varying their accumulation of foreign financial assets and so have little need of either hedging or Sovereign Liquidity Funds. They have few opportunities to invest domestically and so may find that a conventional Sovereign Wealth Fund is all that they need. In contrast, because MIMES should be investing domestically, they are likely to need both Sovereign Liquidity Funds and Sovereign Development Funds.

3. Investing Savings in Assets

3.1 What assets should be acquired with savings from resource revenues?

The choice of assets appropriate for the Gulf States is unlikely to be appropriate for the MIMES. The Gulf States already have abundant invested capital per worker and so have sensibly established Sovereign Wealth Funds to place savings in foreign financial assets. In contrast, the MIMES are short of domestically invested capital and, given political volatility in the region, face difficulties in attracting foreign capital. Hence, whereas it is appropriate for the Gulf States to save their oil and gas revenues predominantly in foreign financial assets, it is more sensible for the MIMES to save by investing domestically.

Quite what domestic investments have the highest returns depends upon circumstances. A common mistake is for governments to focus too heavily upon imagined opportunities in the resource extraction sector itself – 'value addition'. For example, Gulf States have probably over-invested in refining capacity. Often, it is unwise to invest heavily in adding value in this sector because it increases dependence upon the sector, and, once the resources are depleted, the adjustment needed in the economy will be all the greater.

In the short and medium term, the most important sector to expand is 'non-tradables': goods and services that are neither exported, not compete closely with imports. Precisely because they cannot be supplied by the rest of the world, these are the things that will become more expensive as aggregate spending from resource income increases. This, indeed, is what is meant by Dutch disease and so avoiding it requires expansion of this category of goods and services.

In the longer term MIMES will need to diversify their economies beyond resource-based activities. It is not possible to anticipate what the opportunities in global markets might be at the time when resources are nearly exhausted. Hence, until then the appropriate investments are those which can serve as platforms from which to launch a wide range of possible future activities. The prime examples of such platforms are efficient cities and human capital. Almost all future export activities are likely to be urban based and so would benefit from enhanced efficiency in how the country's cities function. Effective 21st century cities require enormous investments in transport systems, power infrastructure and telecommunications and so these are investments which prepare the country for diversification. Similarly, almost all future export activities are likely to require skilled labour. Investment in a high-quality education system and post-education training therefore prepares the labour force for diversification.

3.2 Investing in investing

However, while MIMES are short of domestic invested capital, they currently lack the capacity to invest efficiently. An attempt to scale up investment without the necessary

capacity can have dire effects, driving down the rate of return on investment and plunging the economy into the macroeconomic problems of Dutch disease.

I term the process of building the country's capacity to invest 'investing-in-investing'. It involves four distinct tasks. First, the capacity for *public* investment: the design, selection and implementation of projects. A useful new scoring system that benchmarks current capacities, country-by-country, is the *Public Investment Management Index* constructed jointly by the IMF and the World Bank; so far it covers 73 developing countries and is publicly available. To give a flavour of standards, South Africa comes out well with a score of 3.5 out of 4. Bangladesh is on the borderline between the third and top quartiles with a score of 2.0. Four of the MIMES are rated, although that it important to note that these ratings were done in 2010, prior to the Arab Spring. Tunisia was top-rated, with a score of 2.97. Jordan followed with 2.21. Turkey had a surprisingly low score of 1.88, while Egypt scored only 1.43, the worst score for any of the major middle-income economies. These poor scores, particularly for Egypt which is unlikely to have improved since 2010, suggest that there is much work to be done before savings can be productively absorbed domestically. However, the Index is broken down into four sub-components and this reveals potentially useful differences among the MIMES. Egypt is particularly weak at the selection and management of projects, but these are precisely the components on which Tunisia, Jordan and Turkey are strongest. Hence, there appears to be considerable scope for learning from each other.

Second, because public and private investments are complements, the capacity for *private* investment is also important. A useful index here is *Doing Business*, put out by the World Bank. While the government does not control public investment it does determine the policy environment that affects investment and this is what the Index tries to measure. The *Doing Business* index is available for 2013, and has a wider coverage than the Public Investment Management Index, with most Gulf States included. It reveals a very wide range of performance within the region. Many of the Gulf States have good business environments. Of the 189 countries that are ranked globally, the UAR is judged to have the 23rd best environment, with Bahrain, Oman and Qatar ranked 46th, 47th and 48th, while Kuwait is only 104th. The MIMES generally have worse business environments, and there is much wider dispersion. The best is Tunisia, which ranks 51st. But Jordan is rated only 119th, while Egypt is worse at 128th. As with its PIMI rating, this is an outlier for a major middle-income country and so should give rise to concern. Again, to get a sense of what might reasonably be judged to be attainable, South Africa is ranked 41st and Ghana 67th. Taken in conjunction with the PIMI, these indicators suggest that investing-in-investing needs to be a high and sustained priority.

Third, both public investment and private investment purchases capital goods – equipment and structures. Often the unit cost of these capital goods is far higher in small, poor countries than in the rest of the world. The price of imported equipment is often inflated because marketing channels are uncompetitive and transport costs high. The cost of constructing structures is often high because of a lack of competition, shortages of key inputs and skills, and poorly defined land rights. A high cost of capital goods eats into investment: what drives development is not how much is *spent* on investment, but how much capital it actually *buys*. So, government policies should try to reduce the unit cost of capital goods by establishing where prices are significantly higher than world levels and finding out why.

Finally, if the government wishes to invest a high proportion of GDP, it will be appropriate for some of it to be in the private sector rather than the public sector. Public investment in infrastructure and private investment in production are complements and so a balance between them is needed. This has implications for the allocation of both capital and labour between the public and private sectors.

As to capital, channelling public savings into private investment is politically challenging: bureaucrats are not normally good judges of investment prospects and decisions are exposed to political lobbying. The most straightforward way for the government to invest in the private sector is thus to acquire claims on the commercial banking system. This in turn depends upon that system being sufficiently well developed that it can successfully channel savings to productive investment. Hence, investing-in-investing may also involve the development of the financial sector.

As to labour, it is important that labour is not hoarded in the public sector but is available for productive use in the private sector. In an insightful paper, Ali and Elbadawi (2012) show that the desire to maintain political control has induced the Gulf States to hoard labour in the public sector. The MIMES, having had less revenue, tended to supplement the strategy of inflating public sector employment with techniques of political repression.

3.3 Avoiding Dutch disease: sequencing

Dutch disease occurs when the non-resource export sector of the economy becomes uncompetitive due to real exchange rate appreciation. Dutch disease is not an inevitable consequence of a increases in resource revenues, but it will happen if the government spends resource revenues ahead of extra investment which can increase domestic supply. To guard against this situation requires sequencing.

The policy sequence that helps to avoid Dutch disease is to begin by building the capacity to invest: investing-in-investing. Then, once the capacity to invest has been built, those resource revenues that are saved should be used to finance the scaling up of domestic investment. This extra productive investment will enhance the capacity of the economy to supply goods and services and so the government can then increase consumption (both public and private) without driving up prices: Dutch disease will have been avoided.

If total public spending increases too rapidly then Dutch disease is inevitable because supply will not be able to keep pace. Surges in demand can occur both if there is a rapid initial build-up of revenues which are spent too soon, and if revenues subsequently have large temporary increases because of the volatility of commodity prices. To guard against this expenditure needs to be subject to a sensible ceiling rate of increase and a rule for smoothing out volatility. A ceiling on the rate of increase of public spending is prudent partly because no bureaucracy can efficiently manage very fast increases in spending, and partly because large rapid increases will have macroeconomic effects - increasing inflation. Quite what the ceiling rate of increase should be is a matter of judgment in each country, but it is hard to believe that annual increases in real terms of more than 10-15 percent are prudent. If a government maintains a real increase of 10 percent for seven years public spending doubles in real terms and seven years may be around the time needed to cope with such a large increase in activity.

4. Conclusion

The management of resource revenues is the single most important economic challenge facing the Middle East. The standard rules of economic management were not devised for resource-rich countries and so fail to address problems that are distinctive but central. Although the Gulf States are high-income countries, their policy challenges are very different from OECD economies. In particular, they are critically dependent upon the accumulation and management of foreign financial assets. They thus have a strong interest in international financial order.

The MIMES face a more complex set of challenges. Their natural resources will deplete more rapidly that the Gulf States and so, despite being much poorer, they need higher savings rates. They also differ from the Gulf States in having many more opportunities for domestic investment. They should therefore have higher rates of domestic investment than both other

middle-income countries that are not depleting natural assets, and the Gulf States that lack their opportunities. To manage this process of high domestic investment successfully, their priority should be a phase of investing-in-investing. Without the capacity to invest high rates of savings in productive domestic projects they have little prospect of escaping the middle-income trap.

References

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